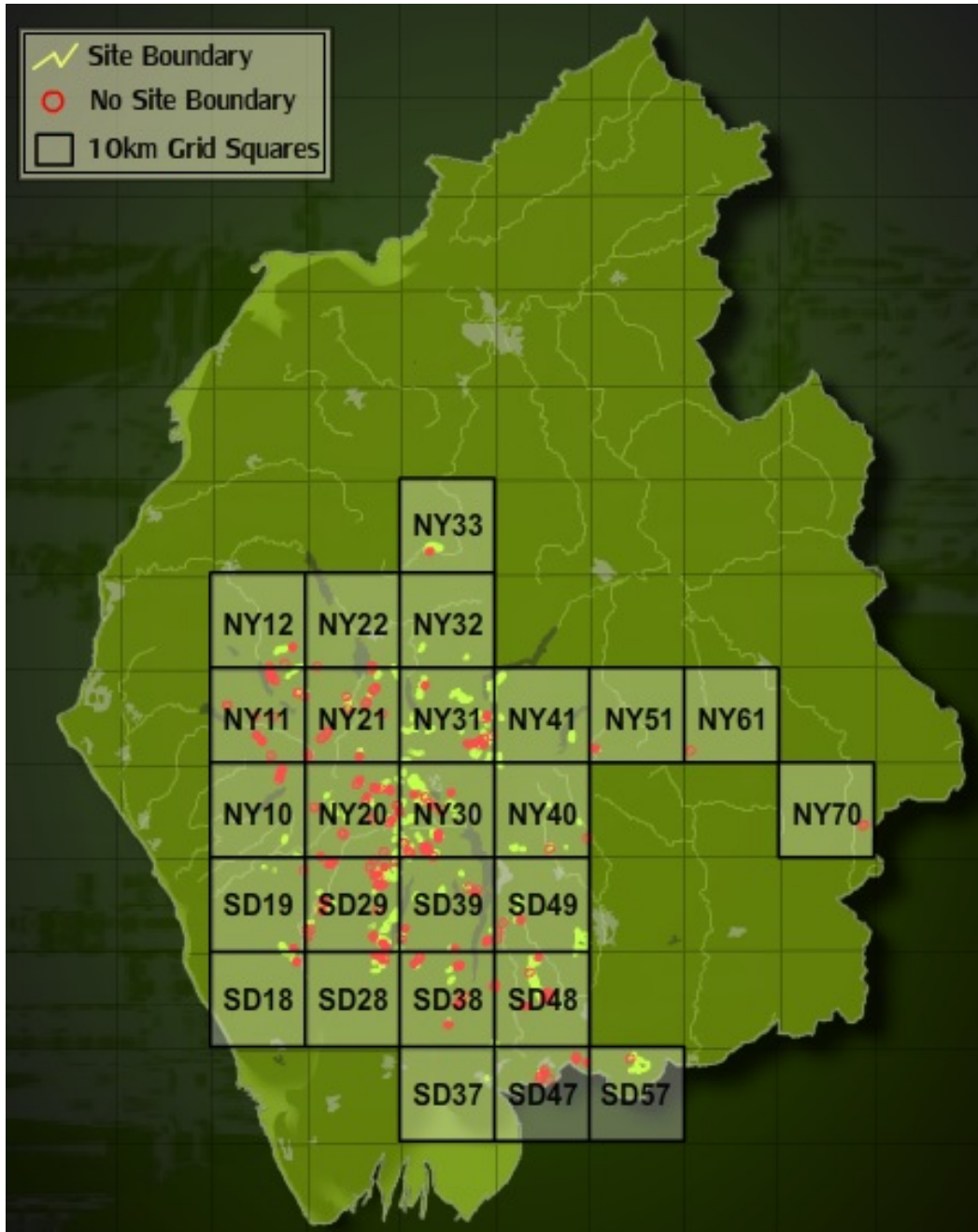
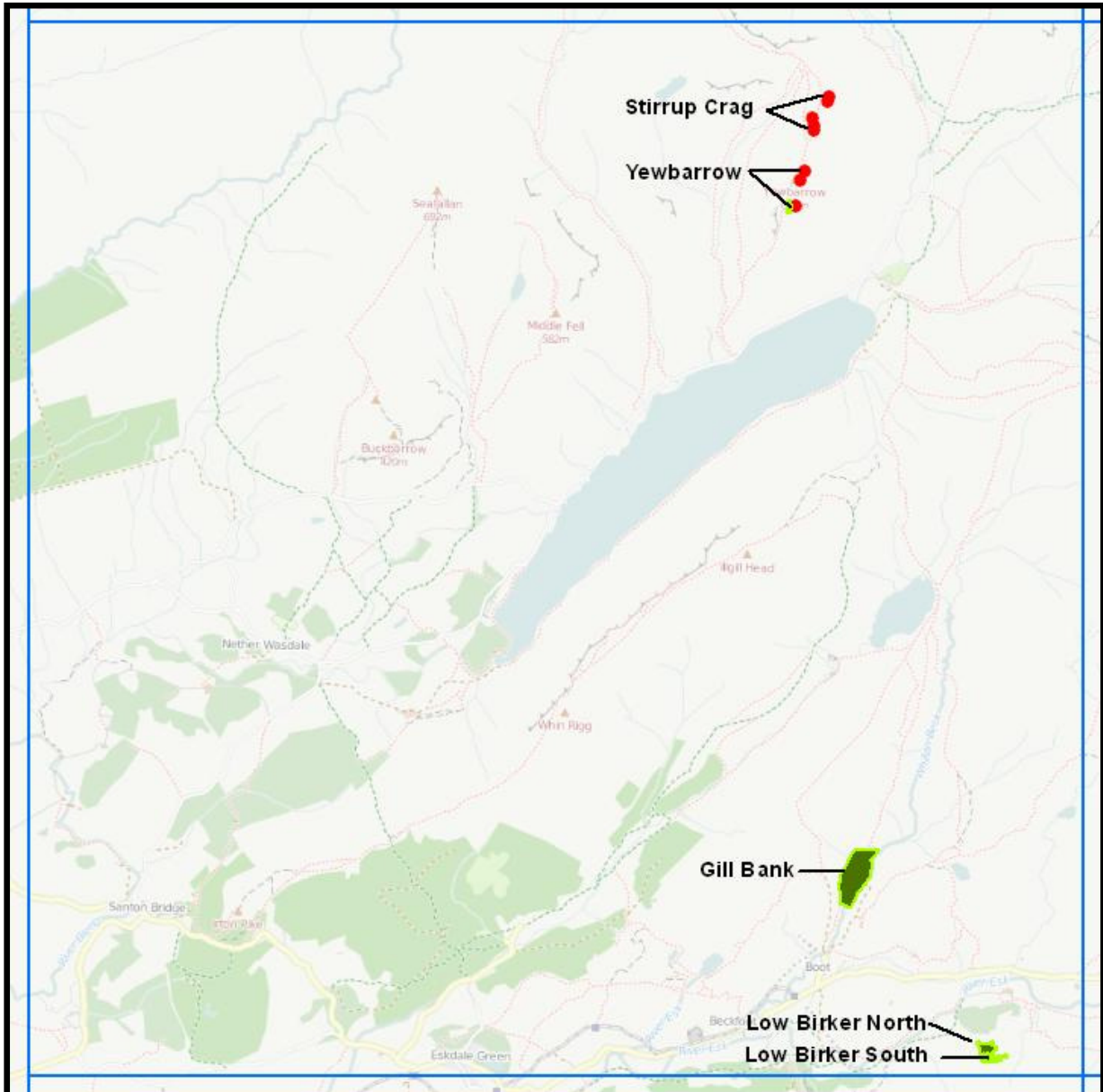


# Uplands for Juniper Survey



March 2014

# NY10



## Sites List:

Jun-NY1701-01	Gill Bank
Jun-NY1708-01	Yewbarrow
Jun-NY1709-01	Stirrup Crag
Jun-NY1900-01	Low Birker North
Jun-NY1900-02	Low Birker South



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Gill Bank	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY1701-01	Survey date: 27/12/12
Recorder name (s): David Benham, Betty King	Cent. grid ref: NY 179 019
Valley / area: Eskdale	Altitude: 130 - 210
Aspect: SE	Ownership:

### 2. Stand area:

- Have you changed the boundaries of the stand on the survey map?  
N / A
- GPS number and track name / label?
- Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	11.75									11.75
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm....

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>235</b>									
Method	<b>VP / WT</b>									
Confidence	<b>H</b>									

### 4. Dominant Vegetation ...acid grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Appears to be moderately grazed and terrain and boulders limit grazer access in some areas. Currently managed under HLS.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
20	24	45	5	0	1
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY1701-01A	NY17960 02151	250 degrees		Juniper in North-western field
Jun-NY1701-01B	NY17918 02089	255 degrees		Prostrate juniper in North-western field
Jun-NY1701-01C	NY17766 01657	270 degrees		Juniper and standard trees in southern most field.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Healthy juniper growing amongst a mixture of standard trees including gorse, holly, hawthorn, rowan and birch.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Low Birker North	Equiv. L. Ward site (s): Low Birker (part of)
Site Ref. Code: Jun-NY1900-01	Survey date: 27/04/2012
Recorder name (s): D Benham and B King	Cent. grid ref: NY19103 00262
Valley / area: Eskdale	Altitude: 100m – 170m
Aspect: 340 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N/A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.7									1.7
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp comm.....

Sub stand	A									<b>Total</b>
Count	850									850
Method	Walk through									Walk through
Confidence	H									H

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Short grass with moss around most juniper. No seedlings found. Wool and grazing damage.

**6. Other threats:**

None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
x	present	present	>90%	present	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

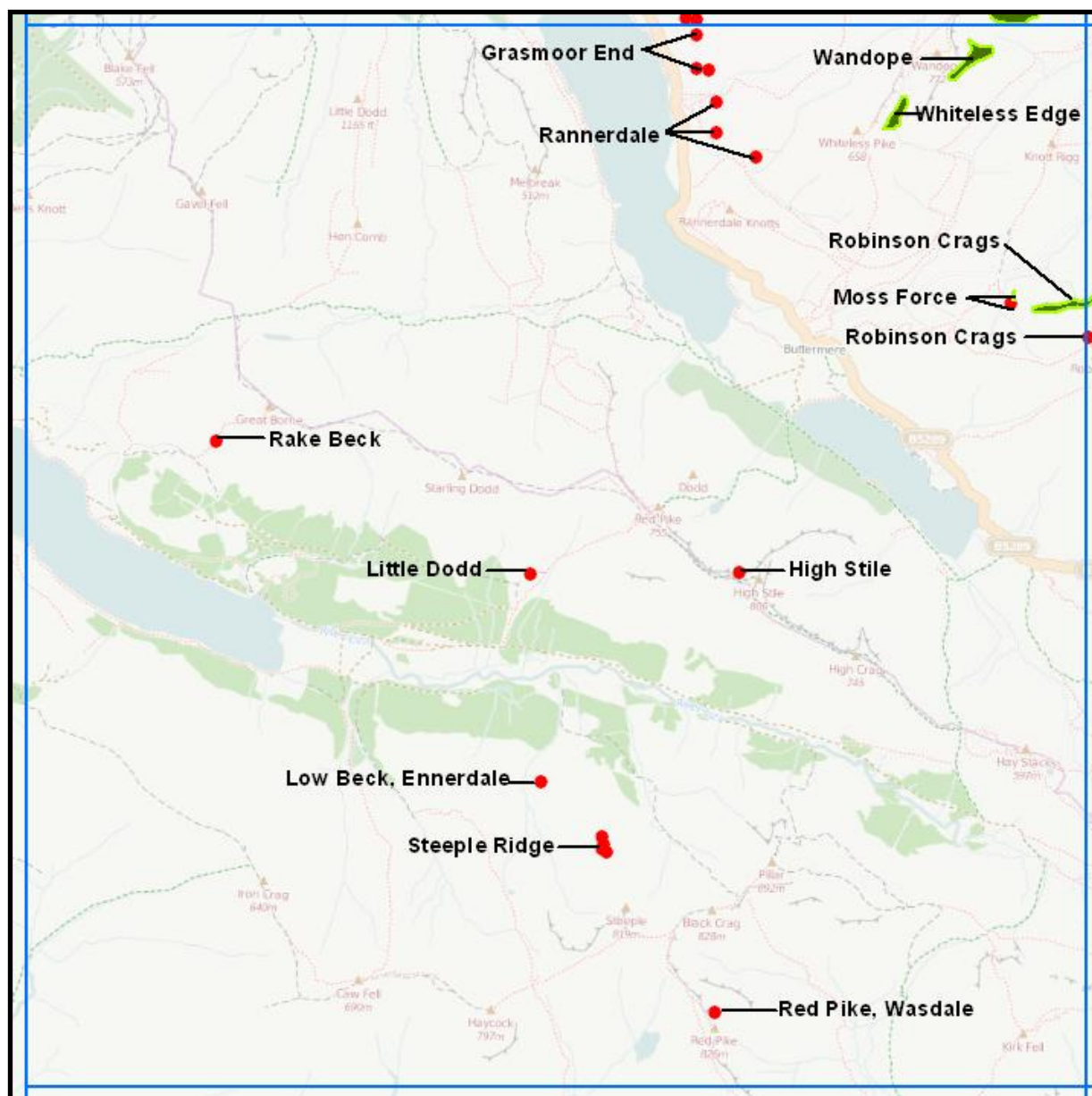
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY1900-01A	NY18970036	NNE		Single browse lined tree
Jun-NY1900-01B	NY18990035	SE		Looking uphill across stand
Jun-NY1900-01C	NY19820020	NW		Sheep and short grazed pasture.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Little sign of disease – none recently dead and brown. Many junipers very old, layered and ‘scraggy.’

# NY11



## Sites List:

Jun-NY1116-01	Rake Beck
Jun-NY1412-01	Low Beck, Ennerdale
Jun-NY1414-01	Little Dodd
Jun-NY1512-01	Steeple Ridge
Jun-NY1610-01	Red Pike, Wasdale
Jun-NY1614-01	High Stile
Jun-NY1618-01	Rannerdale
Jun-NY1619-01	Grasmoor End
Jun-NY1819-01	Wandope
Jun-NY1819-02	Whiteless Edge
Jun-NY1917-01	Moss Force
Jun-NY1917-02	Robinson Crags



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Ennerdale Forest below <b>Little Dodd</b>	Equiv. L. Ward site (s): nil
Site Ref. Code: Jun-NY1414-01	Survey date: 18 March 2012
Recorder name (s): Pete & Barbara Nelson	Cent. grid ref: NY 14766 14835
Valley / area: Ennerdale	Altitude: 305m
Aspect: South	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
Not shown on survey map
- b) GPS number and track name / label?  
Waypoint: 001 Track: Ennerdale Forest Below Little Dodd.gpx
- c) Area of sub stands and total area?

Sub stand	1	<b>Total</b>
Area	130 m <sup>2</sup>	130 m <sup>2</sup>
Confidence	Low – too small for 10m accuracy on GPS	

**3. Plant numbers and Juniper sub-species?                      Ssp.....**

Sub stand	<b>1</b>									<b>Total</b>
Count	<b>13</b>									<b>13</b>
Method	<b>Exact Count</b>									
Confidence	<b>High</b>									

**4. Dominant Vegetation:** Rough Grass and Heather

**Other vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | <u>wet heath</u> / mire   |
| Limestone grassland | Bracken                   |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other: Roe Deer

**Indicators of high grazing / browsing pressure?**

Light grazing. Tops nipped out in places. Sheep seen in area; roe deer and red deer known to be present

**6. Other land management affecting juniper?** Forestry Plantation

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
25 % (4)	25% (3)	25% (3)	25% (3)	nil	nil
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

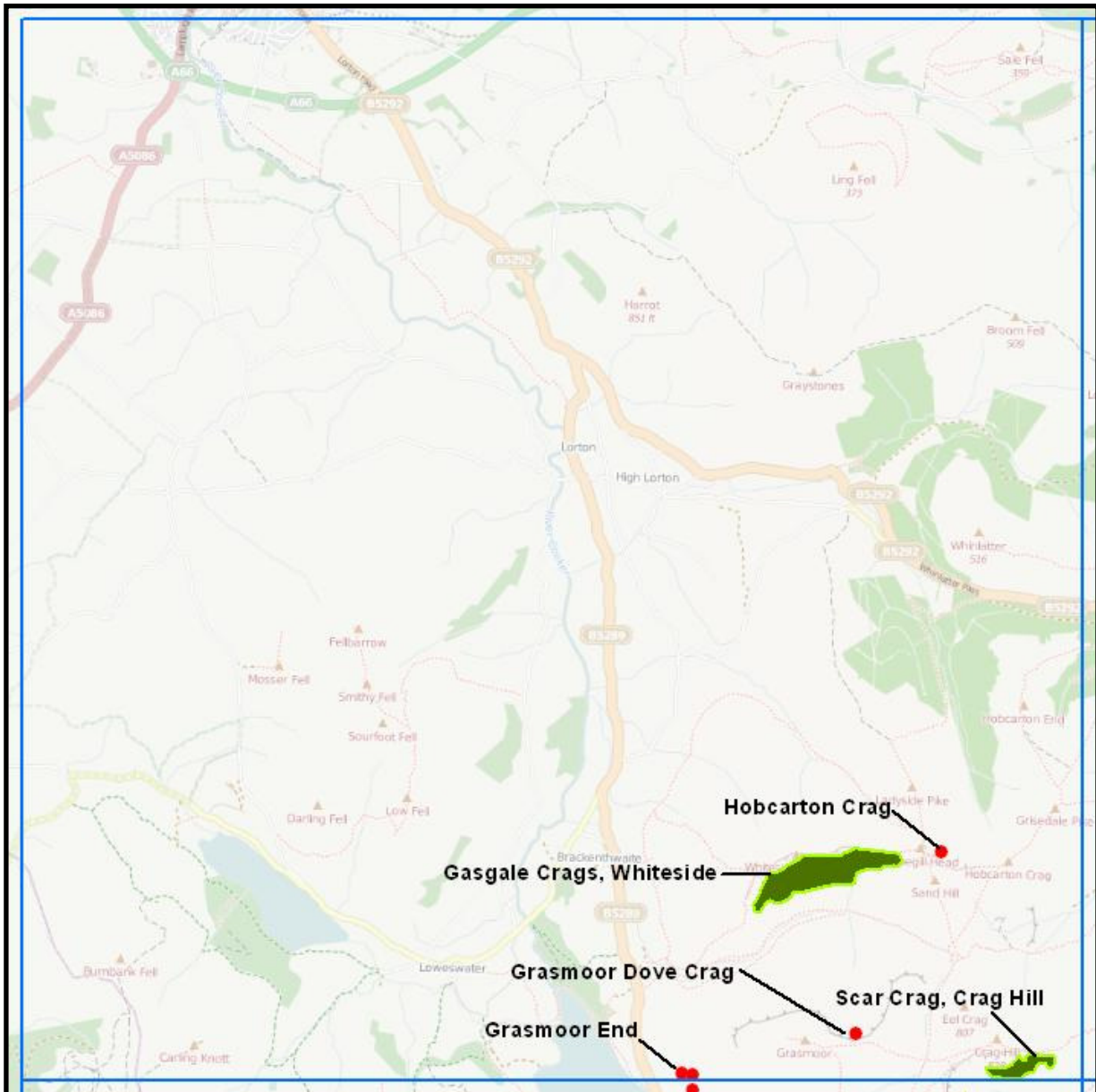
Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Looking SE	NY 1476 1483	135 <sup>0</sup>		All taken from within the stand (very small area)
Looking South	NY 1476 1483	190 <sup>0</sup>		
Looking NW	NY 1476 1483	300 <sup>0</sup>		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Within plantation boundary, in clearing on edge of more mature trees. Regeneration of Sitka Spruce within clearing, close to some of the juniper.

Access from forest road to within 150m of stand.

# NY12



## Sites List:

Jun-NY1619-01	Grasmoor End
Jun-NY1720-01	Grasmoor Dove Crag
Jun-NY1721-01	Gasgale Crag, Whiteside
Jun-NY1822-01	Hobcarton Crag
Jun-NY1920-01	Scar Crag, Crag Hill



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Gasgale Craggs, Whiteside	Equiv. L. Ward site (s): Whiteside
Site Ref. code: Jun-NY1721-01	Survey date: 28/02/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY17540 21940
Valley / area: Buttermere Fells	Altitude: 500m – 730m
Aspect: 170 degrees	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	33.89									33.89ha
Confidence	2									2

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c.nana .....**

Sub stand	A									<b>Total</b>
Count	1635									1635
Method	VP									VP
Confidence	L									L

**4. Dominant Vegetation ...Dry heath.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | wet heath / mire          |
| Limestone grassland | Bracken                   |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

**6. Other threats:**

None

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	X	X
Comments: Most juniper not closely accessed. Some old juniper along summit path more than 2.5 m across.					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY1721-01A				
Jun-NY1721-01B				
Jun-NY1721-01C				

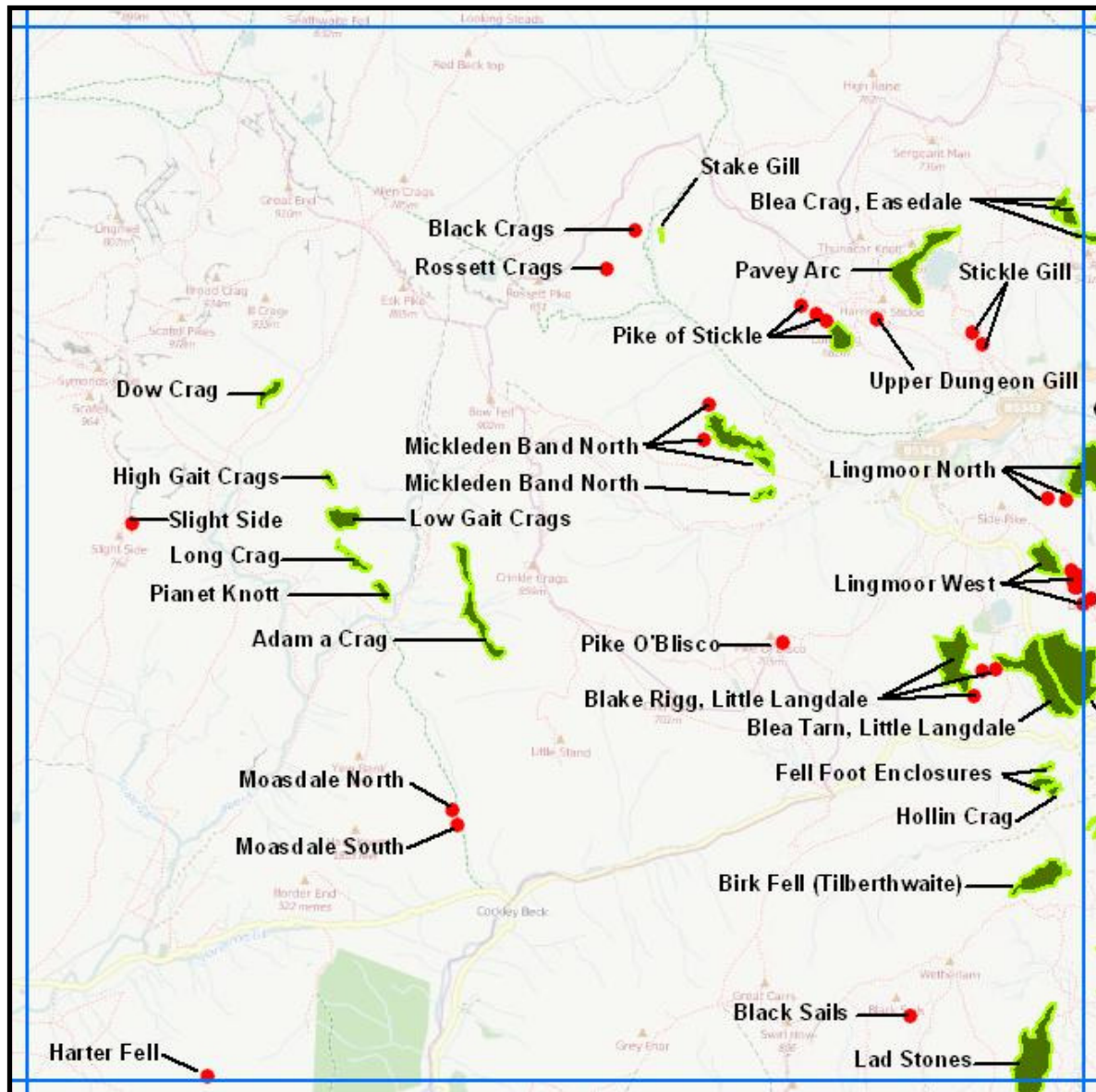
## 9. Comments (associated flora and fauna, survey / access difficulties?):

This is probably the biggest population of dwarf juniper in the county (and England) and is one of the few examples of H15 *Calluna vulgaris* – *Juniperus communis* ssp. *nana* heath. Bush numbers were counted from the summit path and lots of individuals will have been missed, with perhaps only half of the population counted.

The juniper are growing on very friable outcrops and scree amongst a *Calluna* dominated heath. Cowberry, *Vaccinium vitis-idaea* is constant (low cover), crowberry, *Empetrum nigrum* is occasional to abundant and bilberry, *Vaccinium myrtillus* occasional.

Stags horn clubmoss, *Lycopodium clavatum* was also seen to the east of Whiteside summit.

# NY20



## Sites List:

Jun-NY2100-01	Harter Fell	Jun-NY2704-01	Pike O'Blisco
Jun-NY2105-01	Slight Side	Jun-NY2707-01	Pike of Stickle
Jun-NY2205-01	High Gait Crags	Jun-NY2800-01	Black Sails
Jun-NY2206-01	Dow Crag	Jun-NY2804-01	Blake Rigg, Little Langdale
Jun-NY2304-01	Pianet Knott	Jun-NY2807-01	Pavey Arc
Jun-NY2304-02	Long Crag	Jun-NY2807-02	Upper Dungeon Gill
Jun-NY2305-01	Low Gait Crags	Jun-NY2900-01	Lad Stones
Jun-NY2402-01	Moasdale South	Jun-NY2901-01	Birk Fell (Tilberthwaite)
Jun-NY2402-02	Moasdale North	Jun-NY2902-01	Hollin Crag
Jun-NY2404-01	Adam a Crag	Jun-NY2902-02	Fell Foot Enclosures
Jun-NY2507-01	Rossett Crags	Jun-NY2903-01	Blea Tarn, Little Langdale
Jun-NY2508-01	Stake Gill	Jun-NY2904-01	Lingmoor West
Jun-NY2508-02	Black Crags	Jun-NY2907-01	Stickle Gill
Jun-NY2605-01	Mickleden Band South	Jun-NY2908-01	Blea Crag, Easedale
Jun-NY2606-01	Mickleden Band North	Jun-NY3005-01	Lingmoor North



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Rossett Crags	Equiv. L. Ward site (s): none
Site Ref. Code: Jun-NY2507-01	Survey date: 15/11/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY 25480 507700
Valley / area: Great Langdale	Altitude: 400m – 600m
Aspect: 135 degrees	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
N / A
- b) GPS number and track name / label?
- c) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?**

**Ssp** *J.c.communis* and *J.c.*

*nana*.....

Sub stand	A									<b>Total</b>
Count	286									286
Method	VP									VP
Confidence	L									L

**4. Dominant Vegetation ...Outcrop.....**

**Other habitats / vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| <u>dry heath</u>      | wet heath / mire          |
| Limestone grassland   | Bracken                   |
| <u>Scree</u>          | Outcrop / cliff           |
| Limestone scree       | Limestone outcrop / cliff |
| Woodland              |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Most juniper growing on inaccessible crags. Almost all accessible juniper is heavily browsed, including this year's shoots.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	present	X	X
Comments: Most juniper not accessed. Some counted using binoculars.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

None

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Rowan, hawthorn and holly present (scattered and few). Ad peregrine with prey and raven pr.

Total numbers came from the following observations:

NY 25420 07830 20j (counted through binos)

NY 25518 07692 166j

NY 25310 07690 60j

Rossett Pike min of 40j (counted through binos – poor light)

This stand was separated from the Black Craggs stand by a gully at NY 25582 07909.

Along with Black Craggs, this is an important stand of juniper at relatively high altitude. With a large number of dwarf juniper present, this area should be a priority for restoration work if the opportunity arises. Reducing numbers of out-wintered sheep is essential if this site is to survive and expand, though this would have to be tied into agri-environment scheme for the whole of Grasmere Common. The potential for natural regeneration on sheep free parts of the crag may depend on visits from frugivorous birds such as ring ouzel, song thrush and blackbird. More of these could be attracted to the site if more rowan trees were planted. If planted alongside birch and aspen, these would also improve the habitat for other birds and invertebrates.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Stake Gill	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY2508-01	Survey date: 18/06/2012
Recorder name (s): Mike Douglas and Peter Howlett	Cent. grid ref: NY 25991 08038
Valley / area: Langdale	Altitude: 370m – 410m
Aspect: 180 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
N / A
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	0.01									0.01 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

*Ssp nana and communis*

Sub stand	A									<b>Total</b>
Count	23									23
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation Outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

All trees on inaccessible crags within Gill

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			present	1 tree	
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

More than 50% of trees *J.c. nana*, with at least three *J.c. communis*.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Black Crag	Equiv. L. Ward site (s): None
Recorder name (s): M. Douglas	Survey date: 15/11/2012
Site Ref. Code: Jun-NY2508-02	Cent. grid ref: NY 25764 08073
Valley / area: Great Langdale	Altitude: 400m – 560m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

c) Have you changed the boundaries of the stand on the survey map?

N / A

f) GPS number and track name / label?

g) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?**  
and intermediates.....

**Ssp...***J.c. communis, J.c.nana*

Sub stand	A									<b>Total</b>
Count	173									173
Method	VP									VP
Confidence	M									M

**4. Dominant Vegetation ...outcrop.....**

**Other habitats / vegetation types present:**

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep

Cattle

Red Deer

Other .....

**Indicators of high grazing / browsing pressure?**

Most juniper growing on inaccessible crags. Almost all accessible juniper is heavily browsed, including this year's shoots.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: one seedling and one young tree found (on crags inaccessible to sheep)					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

None

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Rowan, hawthorn and holly present (scattered and few). Ad peregrine with prey and raven pr.

Total numbers came from the following observations:

Mansey Pike – 42 j counted through binoculars from the south.

NY 25832 08016 – 14 j (50% *J.c. nana*)

NY 25733 08134 – 49j

NY 25634 08077 – 18j

NY 25566 08042 – 24j

NY 25582 07909 – 26j

Overall it appeared that at least 20% of bushes were *J.c. nana*, with *J.c. communis* and intermediates also present.

This area was separated from the Rossett Crags survey by the gully / beck immediately to the SW of NY 25582 07909.

**Restoration:** Along with Rossett Crags, this is an important stand of juniper at relatively high altitude. With a large number of dwarf juniper present, this area should be a priority for restoration work if the opportunity arises. Reducing numbers of out-wintered sheep is essential if this site is to survive and expand, though this would have to be tied into agri-environment scheme for the whole of Grasmere Common. The potential for natural regeneration on sheep free parts of the crag may depend on visits from frugivorous birds such as ring ouzel, song thrush and blackbird. More of these could be attracted to the site if more rowan trees were planted. If planted alongside birch and aspen, these would also improve the habitat for other birds and invertebrates.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Mickleden Band South	Equiv. L. Ward site (s): Mickleden Band South
Recorder name (s): Mike Douglas	Survey date: 02/02/2012
Site Ref. Code: Jun-NY2605-01	Cent. grid ref: NY27000 05580
Valley / area: Great Langdale	Altitude: 180 – 250 m.
Aspect: 170 degrees	Ownership:

### 2. Stand area:

d) Have you changed the boundaries of the stand on the survey map?

Yes

h) GPS number and track name / label?

N/A

i) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.44									1.44
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp comm...

Sub stand	A									<b>Total</b>
Count	180									180
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation Acid grassland.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Short cropped grass with no DSH. No J. seedlings present and difficult to find unbrowsed juniper. Some showing signs of year on year browsing and suppressed growth.

### 6. Other threats: None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	present
Comments: Dominated by old trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2605-01A				Close up of heavily browsed juniper

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Heavily browsed stand with no seedlings. Holly, birch and hawthorn present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Mickleden Band North	Equiv. L. Ward site (s): Mickleden Band North
Site Ref. Code: Jun-NY2606-01	Survey date: 02/02/2012
Recorder name (s): Mike Douglas	Cent. grid ref: NY26800 06040
Valley / area: Great Langdale	Altitude: 190m. – 420m.
Aspect: NE	Ownership:

### 2. Stand area:

- e) Have you changed the boundaries of the stand on the survey map?  
yes
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A	B								Total
Area	8.63	1.84								10.47ha
Confidence	4	4								4

### 3. Plant numbers and Juniper sub-species?

*Ssp..comm and nana*

Sub stand	A	B	C	D						Total
Count	>2200	>800	30	50						>3080
Method	Aerial	Aerial	VP	VP						Aerial photo
Confidence	L	L	H	H						L

### 4. Dominant Vegetation ...Acid grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Very difficult to find unbrowsed juniper and some juniper with 100% of shoots browsed back to woody material. Many trees topiarised or showing browse lines. Signs of past browsing into woody material common. Only three seedlings found in relatively inaccessible areas and very few young trees present. Although one red deer

stag was seen, there are few signs of red deer browsing and most of the damage seems to be as a result of out-wintered sheep.

**6. Other threats:** None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	present
Comments: > 80% of trees are old and 10 – 20% mature.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This is a heavily sheep browsed stand which has seen very little regeneration in many decades. Associated trees are sparse throughout most of the stand, with occasional birch, holly and rowan, though there is a more dense patch of birch to the east of the stand.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blake Rigg, Little Langdale	Equiv. L. Ward site (s): Blake Rigg N and S
Site Ref. Code: Jun-NY2804-01	Survey date: 26/06/2012
Recorder name (s): Mike Douglas	Cent. grid ref: NY 2879 0398
Valley / area: Little Langdale	Altitude: 220m to 500m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

f) Have you changed the boundaries of the stand on the survey map?

Yes

l) GPS number and track name / label?

N / A

m) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area	n/a	n/a	12.81							12.81
Confidence	5	5	4							4

### 3. Plant numbers and Juniper sub-species? intermediates

**Ssp comm, nana and**

Sub stand	A	B	C							Total
Count	24	60	1770							1854
Method	VP	VP	VP photo							
Confidence	H	H	M							M

### 4. Dominant Vegetation ...Outcrop.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper growing on inaccessible cliffs. Browsing easy to find on accessible trees.

Large areas dominated by mat grass, *Nardus stricta*, with abundant heath rush, *Juncus squarrosus*. *Empetrum nigrum* browsed along upper boundary.

**6. Other threats:** Rhododendron bush close to base of cliffs.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	x	Present
Comments: Ten seedlings found along upper boundary. Ages not assessed due to poor accessibility.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2804-01A	NY296 042	270 degrees		Overview of Blake Rigg crags

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Upper boundary walked with GPS. Lower boundary drawn with aid of aerial photograph. Yew, holly, oak, ash, hazel, rowan and willow spp present. Ring ouzel singing and then alarming at NY28890 03780. Whinchat pair alarming at NY 28990 03780. Alpine and fir club mosses growing alongside each other along upper boundary.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Pavey Arc	Equiv. L. Ward site (s): Pavey Arc
Site Ref. Code: Jun-NY2807-01	Survey date: 18/06/2012
Recorder name (s): M. Douglas and P. Howlett	Cent. grid ref: NY28480 507870
Valley / area: Langdale	Altitude: 530m – 670m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
Yes
- n) GPS number and track name / label?  
N / A
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	13.5									13.5 ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species? intermediates

**Ssp comm, nana and**

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>120</b>									<b>120</b>
Method	<b>VP</b>									<b>VP</b>
Confidence	<b>L</b>									<b>L</b>

### 4. Dominant Vegetation / Habitat: Outcrop.....

#### Other habitats / vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

Woodland

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

All juniper on relatively inaccessible crags, where there's good growth of DSH and tall herb fen.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	present	X	X
Comments: No seedlings found but difficult to assess due to poor access					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2807-01A	NY 28559 07574	328 degrees		Overview of crag
Jun-NY2807-01B				J.c. nana at base of crags
Jun-NY2807-01C				View down crags with juniper, willow and DSH

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Up to 50% of trees encountered were *J.c.nana*, the rest being intermediates or *J.c. communis*. Willow present on distant ledge (poss *Salix aurita*). Good tall herb vegetation, possible *Alchemilla wichurae* and mountain sorrel, *Oxyria digyna* along Jack's Rake. Raven present and peregrine apparently nesting. Male northern eggar moth at base of crags.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Lad Stones	Equiv. L. Ward site (s): Lad Stones
Site Ref. Code: Jun-NY2900-01	Survey date: 13/01/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY 29500 00140
Valley / area: Tilberthwaite	Altitude: 340m – 600m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

h) Have you changed the boundaries of the stand on the survey map?

Yes

p) GPS number and track name / label?

N / A

q) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	22.14									22.14ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	3650									3650
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Much of the grassland throughout the stand dominated by *Nardus stricta*. DSH mostly on inaccessible crags or where present elsewhere, browsed to cushions or drumsticks. Occasional browsing of last year's shoots throughout, and browsing of some of the more accessible junipers has limited growth dramatically. Less grazing higher up (above 480m) where there is some *Empetrum nigrum* and better growth of *Vaccinium myrtillus*.

6. Other threats: none

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	Present
Comments: Only three seedlings seen on more inaccessible parts of the crag.					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2900-01A	NY 30009 00491	258 degrees		Whole stand photo
Jun-NY2900-01B				Heavily browsed junipers
Jun-NY2900-01C	NY 29375 00420			<i>Juniperus communis nana</i> or intermediate form.

9. Comments (associated flora and fauna, survey / access difficulties?):

Declining stand due to lack of regeneration. This is unlikely to change under current management regimes with too many out-wintered sheep limiting the growth of plants and preventing regeneration.

Clone of aspen trees (30 stems) at NY 29651 00105.

*Juniperus communis nana* or hybrid growing amongst common juniper on Steel Edge at NY29375 00420.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Birk Fell, Tilberthwaite	Equiv. L. Ward site (s): Tilber Birk Total
Recorder name (s): Mike Douglas, Alastair Ross, Sandra and Steve Kruger	Survey date: 12/07/11. Second visit 07/05/2013
Valley / area: Tilberthwaite	Cent. grid ref: NY 295 019
Aspect: SSE	Altitude: 410 – 490 metres
	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map?  
Yes
- r) GPS number and track name / label?  
7 - Greenburn
- s) Area of sub stands and total area?

Sub stand	A							<b>Total</b>
Area	8.8 ha							8.6 ha

### 3. Plant numbers and Juniper sub-species?

Ssp...comm..

Sub stand	A							<b>Total</b>
Count	6027							
Method	VP using photo							
Confidence	M							

### 4. Dominant vegetation and summary of other vegetation types within and immediately around the stand: Acid grassland.

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

Was a grazing impact assessment carried out?      Yes / no

### Indicators of high grazing / browsing pressure?

Abundant mat grass, *Nardus stricta* and lack of dwarf shrub heath suggests previous long term high grazing impact. Sward height, flowering of grasses, health of juniper and presence of numerous juniper seedlings suggest a recent relaxation in grazing pressure however.

07/05/2013 visit: Of 20 seedlings found, 75 % were browsed, two of these heavily, with all foliage removed. I passed around double this number of young bushes, and if anything a greater proportion of these were heavily browsed.

Walking along the upper boundary of the juniper stand, uprooted and scattered *Nardus* tussocks were abundant and most *Juncus squarrosus* rosettes were heavily grazed.

### 6. Other land management affecting juniper?

#### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	10%	90%	present	present
Comments: Many tens of seedlings and young trees were present around the periphery of the stand, but few within the stand					

Are fruit bearing trees present?

Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Tilber-Birk stand file, July 2011 051	NY 29910 03520	191°		From roadside nr Blea Moss. Overview of stand.
Tilber-Birk Stand file, 081				Large Juniper.
Tilber-Birk Stand file, 091				View of stand from Eastern boundary.

### 9. Comments (associated flora and fauna, survey / access difficulties?):

Taller standard trees almost absent, with only the occasional holly amongst the stand. Most juniper were within the 'old' category and it may be that there has been little if any regeneration within the stand over the last century. A more recent batch of young trees now seems to be supplemented with many seedlings of up to a couple of years old. Previously suppressed trees now seem to be growing well.

Given the late summer date, few birds were present, but redpoll, siskin, song thrush and dunnock were using the stand.

07/05/2013

The regeneration of juniper that has occurred around the eastern boundary of the stand has not been replicated elsewhere around the boundary. The young and seedling trees are now more heavily and frequently browsed (see grazing impact section). The general impression is that a pulse of natural regeneration occurred between ten and three years ago, but this has now stopped and many of the new individuals are now being suppressed by sheep browsing.

Listened to singing willow warbler, chaffinch, robin, wren, dunnock and goldcrest on this visit. Also spotted a couple of rowan amongst the juniper, and two birch and one larch further downslope.

There was a patch of 30 long-dead juniper around NY29592 01835 and there were more scattered dead bushes to the west of this patch.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blea Tarn	Equiv. L. Ward site (s): Blea Tarn
Site Ref. Code: Jun-NY2903-01	Survey date: 26/07/11
Recorder name (s): Mike Douglas, Sarah Johnston	Cent. grid ref: NY 297 038
Valley / area: Little Langdale	Altitude: 130m. - 320m.
Aspect: Various	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
Yes
- t) GPS number and track name / label?  
5 Blea Tarn East
- u) Area of sub stands and total area?

Sub stand	A (east)	B (West)	C (outlier)					Total
Area	23.7ha	16.6ha						40.3ha

### 3. Plant numbers and Juniper sub-species?

**Ssp *J.c.communis***

Sub stand	A	B	C					Total
Count	1580	2015	30					3625
Method	VP photo	VP	VP					VP photo
Confidence	M	M	H					M

### 4. Dominant habitats and other features / vegetation present: bracken dominated.

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Almost all accessible juniper show evidence of browsing and only one seedling was seen.

### 6. Other land management affecting juniper? Shading – tall trees and bracken.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	None seen	>90%	present	Present
Comments: 1 seedling seen. Dead trees may have been under-estimated due to bracken cover.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Blea Tarn and Lingmoor file, July 2011, 060	NY29546 04137	171°	N/A	Overview of valley bottom (sub-stand B)
Blea Tarn and Lingmoor file, July 2011, 072	NY29554 04154	61°	N/A	Looking across valley to sparse juniper (sub-stand A)
Blea Tarn and Lingmoor file, July 2011, 073	NY29554 04154	77°	N/A	Looking across valley to sparse juniper (sub-stand A)

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Standard trees include holly, yew, rowan, sycamore, oak, birch and ash. Recorded 4 redstart, yellowhammer, willow warbler, whitethroat, robin, great and coal tit, redpoll, blackbird and siskin.

Most of the younger juniper were found in wet flushes / damp areas, and some of these were acting as a base for Sphagnum growth.

Stand generally heavily browsed, with high sheep density at present.

Additional notes after 26/06/2012 visit. Two male beautiful demoiselle along stream NY296036. Three small pearl bordered butterflies in same area.

October 2013:

After two seasons of stock exclusion juniper seedlings are now easy to find on thinner soils around crags. Despite frequent incursions by small numbers of sheep, seedlings, established bushes and planted juniper further upslope have not been browsed since exclusion.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Lingmoor West	Equiv. L. Ward site (s): Blea Tarn
Site Ref. Code: Jun-NY2904-01	Survey date: 15/09/2011
Recorder name (s): MD JA AC	Cent. grid ref: NY2904-01
Valley / area: Little Langdale	Altitude: 210 – 370m
Aspect: WSW	Ownership:

### 2. Stand area:

k) Have you changed the boundaries of the stand on the survey map? YES

v) GPS number and track name / label? GPS6 Blea Tarn

w) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	5.73									5.73
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>570</b>									<b>570</b>
Method	<b>VP Photo</b>									<b>VP photo</b>
Confidence	<b>Medium</b>									<b>Medium</b>

### 4. Dominant Vegetation Dry Heath

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer ?

Other .....

#### Indicators of high grazing / browsing pressure?

Med/patchy – more accessible areas have grazed sward incl. Molinia, some Calluna & Erica c. grazed to cushions. Found 10's of seedlings in couple of wet patches.

### 6. Other threats:

Larch plantation self-seeding elsewhere on slope. Old & young Sycamore present.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Yes	10%	40%	45%	No	5%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
	29551 04747	32deg		Oblique shot of slope showing bulk of Juniper and assoc. habitat
	29116 04541	63deg		VP photo from other side of tarn, for VP count.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Larch plantation self-seeding across slope, Birch, Sycamore (some large old trees & younger individuals), Hawthorn, Rowan, Holly, Oak, Cherry.

Birds – 5 Ring Ouzel, Kestrel, Chaffinch.

Butterflies – Tortoiseshell, Peacock & Red Admiral.

Some more base-rich areas on the slope, rich in Thyme & Fairy flax. Didn't walk through Larch plantation, at the south boundary of the stand, to define extent of Juniper.

Restoration:

Although this site has a good mix of habitats and juniper age classes, it appears that some areas are heavily grazed and juniper regeneration will be limited at these locations. On the other hand, there is some self-seeding of larch amongst the juniper and there are many other tree species present close by. Drastic reductions in sheep stocking density may allow the spread of more tall trees including sycamore, and as such the best option for this area may be a greater degree of off-wintering of sheep.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Stickle Gill	Equiv. L. Ward site (s): none
Site Ref. Code: Jun-NY2907-01	Survey date: 18/06/2012
Recorder name (s): M. Douglas and P. Howlett	Cent. grid ref: NY2901 0705
Valley / area: Langdale	Altitude: 230m – 300m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- l) Have you changed the boundaries of the stand on the survey map?  
N / A
- x) GPS number and track name / label?  
N / A
- y) Area of sub stands and total area?

Sub stand	A	B								Total
Area										
Confidence	4	4								

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B								Total
Count	7	5								12
Method	VP	VP								VP
Confidence	H	H								H

### 4. Dominant Vegetation / habitat ...Outcrop.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper on inaccessible crags.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Comments: Not assessed due to difficult access					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blea Crag	Equiv. L. Ward site (s): Easedale (part of)
Site Ref. Code: Jun-NY2908-01	Survey date: 20/09/2011
Recorder name (s): MD	Cent. grid ref: NY29900 08200
Valley / area: Grasmere	Altitude: 360 – 500m
Aspect: NE	Ownership:

### 2. Stand area:

m) Have you changed the boundaries of the stand on the survey map?

z) GPS number and track name / label?

aa) Area of sub stands and total area?

Sub stand	A	B	C								Total
Area	2.2	2.4	3								7.6Ha
Confidence	3	3	3								

### 3. Plant numbers and Juniper sub-species?

Ssp.....

Sub stand	A	B	C								Total
Count	90	60	30								180
Method	VP	VP	VP								
Confidence	Medium	Medium	Medium								

### 4. Dominant Vegetation: Acid grassland.....

#### Other vegetation types present:

acid grassland	<u>wet grassland</u> / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Nardus dominant & abundant over large areas. Most Juniper accessible to sheep show browsing signs, but most Juniper is growing on crags.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Present	Present	Present	Present	Present	Present
Comments: Not accessed closely for accurate assessment.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2908-01A	NY30316 08024			Oblique shot of slope.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Numerous Ash, Rowan & Birch with small clone of Aspen. Lime rich flushes with greater floral diversity (S. aizodes, S. stellara, A. alpine & Allchemilla sp.) all short-cropped.

Inputted to mapinfo 17/11/11



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Lingmoor North	Equiv. L. Ward site (s): Lingmoor Oak How W and E
Site Ref. code: Jun-NY3005-01	Survey date: 31/07/2012
Recorder name (s): M. Douglas, S. Johnson	Cent. grid ref: NY3013 0587
Valley / area: Gt Langdale	Altitude: 150m – 330m
Aspect: 358 degrees	Ownership:

### 2. Stand area:

n) Have you changed the boundaries of the stand on the survey map?

Yes

bb) GPS number and track name / label?

N / A

cc) Area of sub stands and total area?

Sub stand	A	B	C							<b>Total</b>
Area	19.80	-	-							19.80
Confidence	5	3	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B	C							<b>Total</b>
Count	1770	132	20							1922
Method	VP photo	VP	VP							VP photo
Confidence	L	h	h							L

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

Woodland

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Along the lower altitude boundary browsed juniper were found after some searching, and *Calluna* and *Erica cinerea* were browsed to cushions. As we gained altitude browsing and grazing pressure decreased to almost zero – even holly experiencing very light browsing and getting away. There was one small patch of light red deer

browsing – on two adjacent junipers at a height of five foot. DSH around the upper boundary was very healthy with very little browsing obvious over the last decade.

**6. Other threats:**

Sycamore: Present in good numbers, with a number of age classes present, including seedlings. First patch of at least ten trees around NY29895 05730, oldest at least thirty years old. Second patch of at least 11 sycamores around NY 30202 05641, oldest at least forty years old. Third patch of at least 5 sycamores around NY 30150 05940.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: Tens of seedlings found around boundary – well spread amongst a variety of vegetation types. Young trees growing and establishing well through deep <i>Calluna</i> .					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3005-01A	NY3006 05649	344 degrees		View from upper boundary
Jun-NY3005-01B	NY30261 05676	285 degrees		
Jun-NY3005-01C	NY30261 05676	317 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

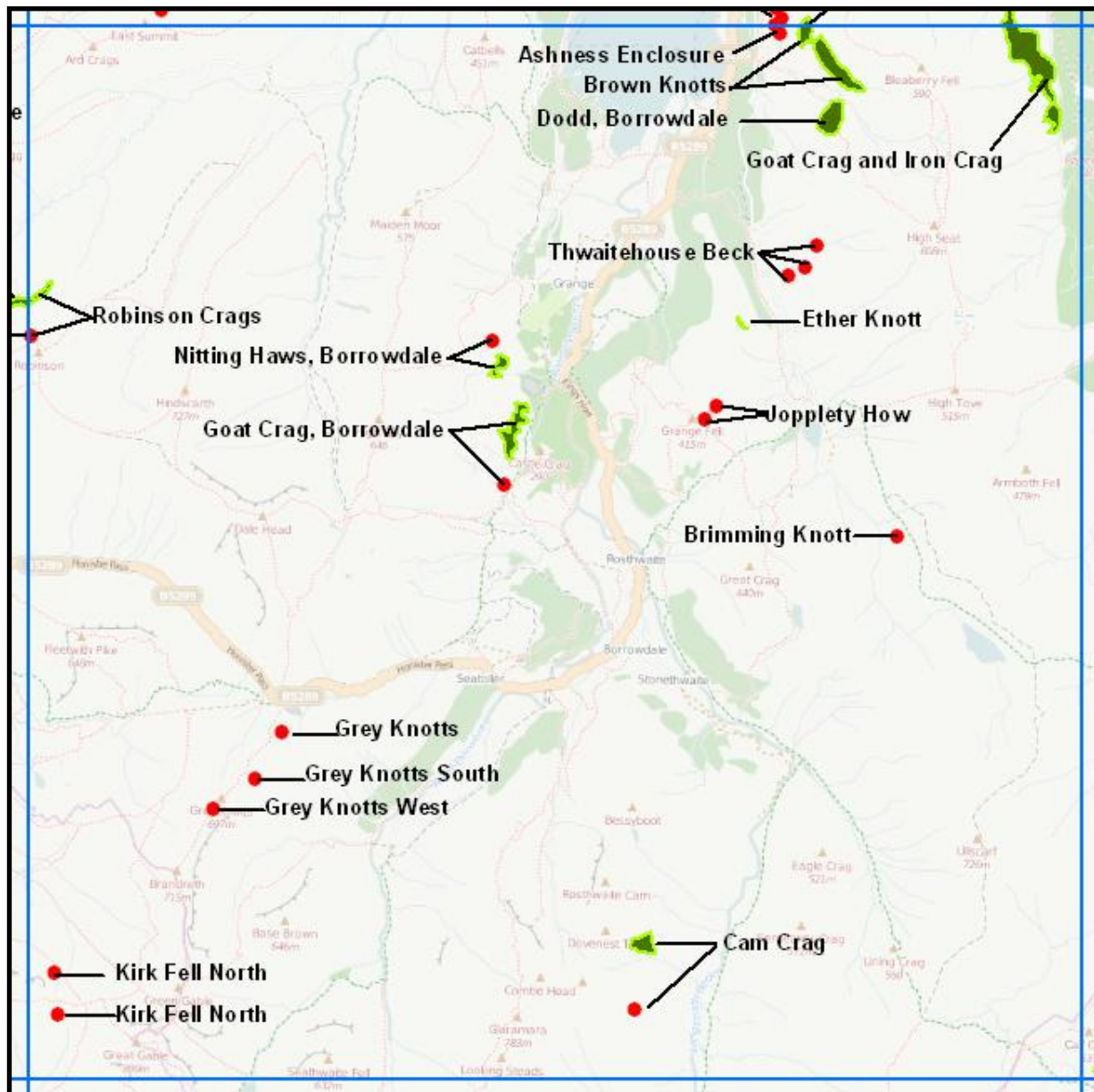
This is a very healthy stand which has experienced frequent (continuous?) regeneration events in the last 50 years. Regeneration of tall trees within the juniper may be a problem lower down the slope, but regeneration of juniper at the southern end may allow the stand to migrate upslope over time, producing a sequence of woodland and scrub habitats along the altitudinal gradient. The juniper here is one of very few in the Lake District which grades into dwarf shrub heath along its upper boundary rather than grass or bracken. Associated trees include ash, rowan, larch, yew, holly, birch and oak, including an ancient coppiced oak at NY 30465 05788. Sycamore is also present though and this may be a threat to the juniper, as it is currently regenerating well from the numerous large seed trees scattered throughout the stand. The count of 1922 bushes is likely to

be a large underestimate, and the resulting juniper density when using this total – of 100 bushes per hectare, seems to be easily exceeded throughout the stand.

A breeding bird survey was carried out here in 2013, and the following species were observed as holding territories:

<b>Species</b>
Willow warbler
Lesser redpoll
Chaffinch
Wren
Robin
Dunnock
Blackbird
Song thrush
Coal tit
Siskin
Linnet
Goldcrest
Tree pipit
Mistle thrush
Cuckoo
Bullfinch

# NY21



## Sites List:

Jun-NY1917-02	Robinson Crags	Jun-NY2719-01	Brown Knotts
Jun-NY2010-01	Kirk Fell South	Jun-NY2719-02	Dodd, Borrowdale
Jun-NY2011-01	Kirk Fell North	Jun-NY2720-01	Ashness Enclosure
Jun-NY2112-01	Grey Knotts West	Jun-NY2815-01	Brimming Knott
Jun-NY2212-01	Grey Knotts South	Jun-NY2919-01	Goat Crag and Iron Crag
Jun-NY2213-01	Grey Knotts		
Jun-NY2416-01	Goat Crag, Borrowdale		
Jun-NY2416-02	Nitting Haws, Borrowdale		
Jun-NY2511-01	Cam Crag		
Jun-NY2616-01	Jopplety How		
Jun-NY2617-01	Ether Knott		
Jun-NY2717-01	Thwaitehouse Beck		



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: <b>GOAT CRAG</b>	Equiv. L. Ward site (s):
Site Ref. Code: Jun-NY2416-01	Survey date: <b>09/01/2012</b>
Recorder name (s): <b>MD</b>	Cent. grid ref: <b>NY24610 - 16200</b>
Valley / area: <b>BORROWDALE</b>	Altitude: <b>190 – 400m</b>
Aspect: <b>E</b>	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?
- b) GPS number and track name / label? **GAOT CRAG 5**
- c) Area of sub stands and total area?

Sub stand	<b>A</b>									<b>Total</b>
Area	<b>5.44</b>									<b>5.44</b>
Confidence	<b>3</b>									<b>3</b>

### 3. Plant numbers and Juniper sub-species?

**Ssp COMM**

Sub stand	<b>A</b>	<b>B</b>								<b>Total</b>
Count	<b>700</b>	<b>14</b>								<b>714</b>
Method	<b>VP</b>	<b>VP</b>								<b>VP</b>
Confidence	<b>M</b>	<b>H</b>								<b>M</b>

### 4. Dominant Vegetation ...ACID GRASSLAND....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
<b>dry heath</b>	wet heath / mire
Limestone grassland	Bracken
<b>Scree</b>	<b>Outcrop / cliff</b>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

**Sheep**                      Cattle                      **Red Deer?**                      Other .....

#### Indicators of high grazing / browsing pressure?

Juniper showing past browsing with 1 mature tree cropped to a small lollipop 20cm high. However, young trees & seedlings doing well close by. Calluna & Erica browsed to carpets where sheep can access them – sheep present in January.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Y	Y	Y	Y		
Comments:					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2415-01 A	24854 15972	270 deg		Overview south

9. Comments (associated flora and fauna, survey / access difficulties?):

Yew, Birch, Holly, Ash, Hawthorn & Larch present.

Access difficult.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Nitting Haws	Equiv. L. Ward site (s): None
Site Ref. Code: NY2416-02	Survey date: 09/01/2012
Recorder name (s): Mike Douglas	Cent. grid ref: NY 24480 16780
Valley / area: Borrowdale	Altitude: 240 – 350m.
Aspect: 90 degrees	Ownership: ?

**2. Stand area:**

- b) Have you changed the boundaries of the stand on the survey map?  
N / A
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A	B								<b>Total</b>
Area	1.87	N/A								1.87ha
Confidence	3									3

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm...**

Sub stand	A	B								<b>Total</b>
Count	470	35								505
Method	VP	VP								VP
Confidence	M	M								M

**4. Dominant Vegetation ...acid grassland.....**

**Other vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| <u>dry heath</u>    | wet heath / mire          |
| Limestone grassland | <u>Bracken</u>            |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Lower slopes dominated by Nardus in some areas and both Herdwick and Swaledale sheep present in January. Browsing of last year's juniper shoots hard to find but frequent evidence of previous browsing back to woody material. Found one bark stripped stem and one bush lightly browsed by red deer.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present		Present
Comments: Seedlings not difficult to find around N side of stand.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2416-02A	NY24678 16836	264 degrees		Overview of stand from knoll to the east.
Jun-NY2416-02B	NY24737 16395	322 degrees		Overview from Goat Crag
Jun-NY2416-02C				Juniper in foreground with upper Borrowdale valley in the background.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Associated trees – ash, rowan, holly, yew and birch.

Grazing impacts much lower along high altitude boundary with DSH dominating the upper slopes.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Goat Crag and Iron Crag	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY2919-01	Survey date: 27/02/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY2960 1960
Valley / area: Thirlmere	Altitude: 280m – 500m
Aspect: 80 degrees	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
N / A
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	19.91									19.91
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	964									964
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation / habitat ...outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsed juniper easy to find on lower slopes and below main crag, with 100% of shoots sheep-browsed on some bushes. DSH is restricted to crags here and Deschampsia cespitosa is grazed back hard in some cases. Higher up grazing is lighter and although some Calluna vulgaris is browsed to cushion form at the crag

top, some young junipers have got away within the last ten years. Light red deer browsing was found on one bush at the south end of Iron Crag.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: Dominated by old trees but close inspection not possible for most bushes. Regeneration hotspot at NY2956 1950, where there were 6 seedlings and 5 young trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2919-01A	NY29654 19421	284 degrees		View of dense juniper above gully, Iron Crag
Ju-NY2919-01B	NY29753 20007	250 degrees		Looking up at lower slopes of Goat Crag

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper largely restricted to crags where other tree species such as larch, ash, rowan, willow spp, hazel, holly and birch are numerous and there are also a few individuals of Scot's pine, oak and aspen. Aspen locations are shown below:

- NY 29399 19950 13 stems.
- NY 29304 19926 4 stems
- NY 29538 19504 1 stem

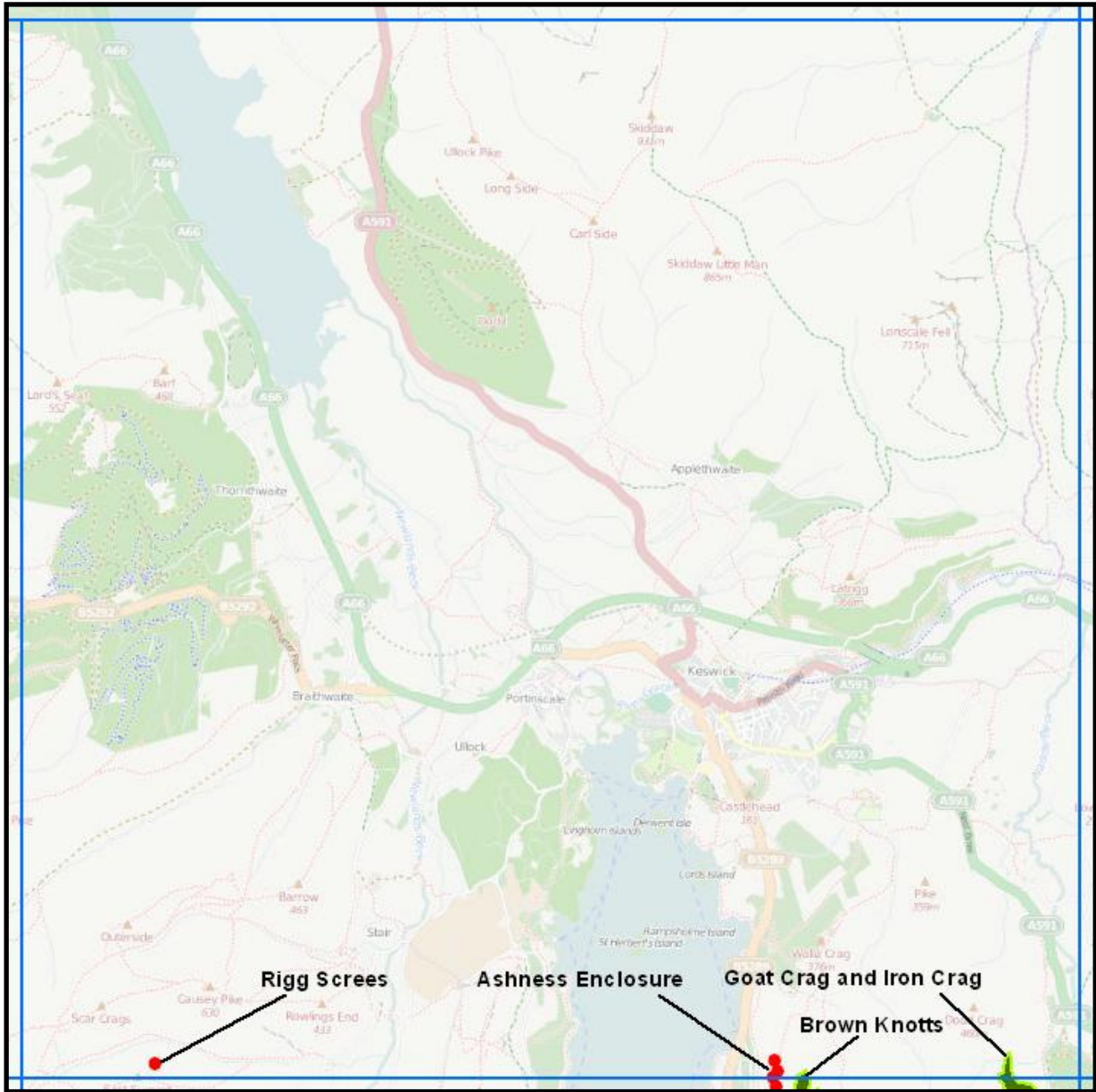
A few juniper are regenerating around the margins of the stand but the numbers of young and seedling bushes seen are insufficient to maintain the population in the long term.

A red fox (dog) was disturbed from the crags and *Racomitrium ericoides* found on the scree below Goat Crag.

A large patch of bearberry was identified at NY 29327 19787 and four more patches were found on the base of the crags as far north as NY29304 19926.



# NY22



## Sites List:

Jun-NY2120-01	Rigg Screes
Jun-NY2719-01	Brown Knotts
Jun-NY2720-01	Ashness Enclosure
Jun-NY2919-01	Goat Crag and Iron Crag



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Ashness Enclosure	Equiv. L. Ward site (s): Brown Knotts (part of)
Site Ref. code: Jun-NY2720-01	Survey date: 17/10/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY 2715 2007
Valley / area: Borrowdale	Altitude: 180 – 240m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area										
Confidence	4	4	4	3						4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A	B	C	D						Total
Count	234	9	25	11						279
Method	VP	VP	VP	VP						VP
Confidence	L	H	H	L						L

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
<u>Limestone grassland</u>	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Stock excluded and browsing generally light, but sheep dung present and browsing on planted yew over (?) the guards suggests that red deer may be visiting occasionally. Established juniper have recovered well since severe browsing pre-enclosure (2001).

**6. Other threats:** Shading – from taller trees and dense bracken.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: M. Pankhurst (NT) suggests that at least 200 of 500 seedlings planted up to 2003 have survived. There has obviously been some natural regeneration since this time with 8 young and 2 seedlings found away from planted areas.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This site seems to be doing well since enclosure (2001), but bracken growth means that juniper planted up to 2003 still need annual bracken weeding. The strong bracken growth probably limits natural regeneration of juniper to thinner soils around crags and given the numerous tall trees present within the enclosure some form of livestock grazing in the future will be important if juniper is to persist in the long term.

Patches of thick gorse present along with hawthorn, blackthorn, oak, ash, birch, hazel, rowan and yew.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Goat Crag and Iron Crag	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY2919-01	Survey date: 27/02/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY2960 1960
Valley / area: Thirlmere	Altitude: 280m – 500m
Aspect: 80 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
N / A
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	19.91									19.91
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	964									964
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation / habitat ...outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsed juniper easy to find on lower slopes and below main crag, with 100% of shoots sheep-browsed on some bushes. DSH is restricted to crags here and Deschampsia cespitosa is grazed back hard in some cases. Higher up grazing is lighter and although some Calluna vulgaris is browsed to cushion form at the crag

top, some young junipers have got away within the last ten years. Light red deer browsing was found on one bush at the south end of Iron Crag.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: Dominated by old trees but close inspection not possible for most bushes. Regeneration hotspot at NY2956 1950, where there were 6 seedlings and 5 young trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2919-01A	NY29654 19421	284 degrees		View of dense juniper above gully, Iron Crag
Ju-NY2919-01B	NY29753 20007	250 degrees		Looking up at lower slopes of Goat Crag

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper largely restricted to crags where other tree species such as larch, ash, rowan, willow spp, hazel, holly and birch are numerous and there are also a few individuals of Scot's pine, oak and aspen. Aspen locations are shown below:

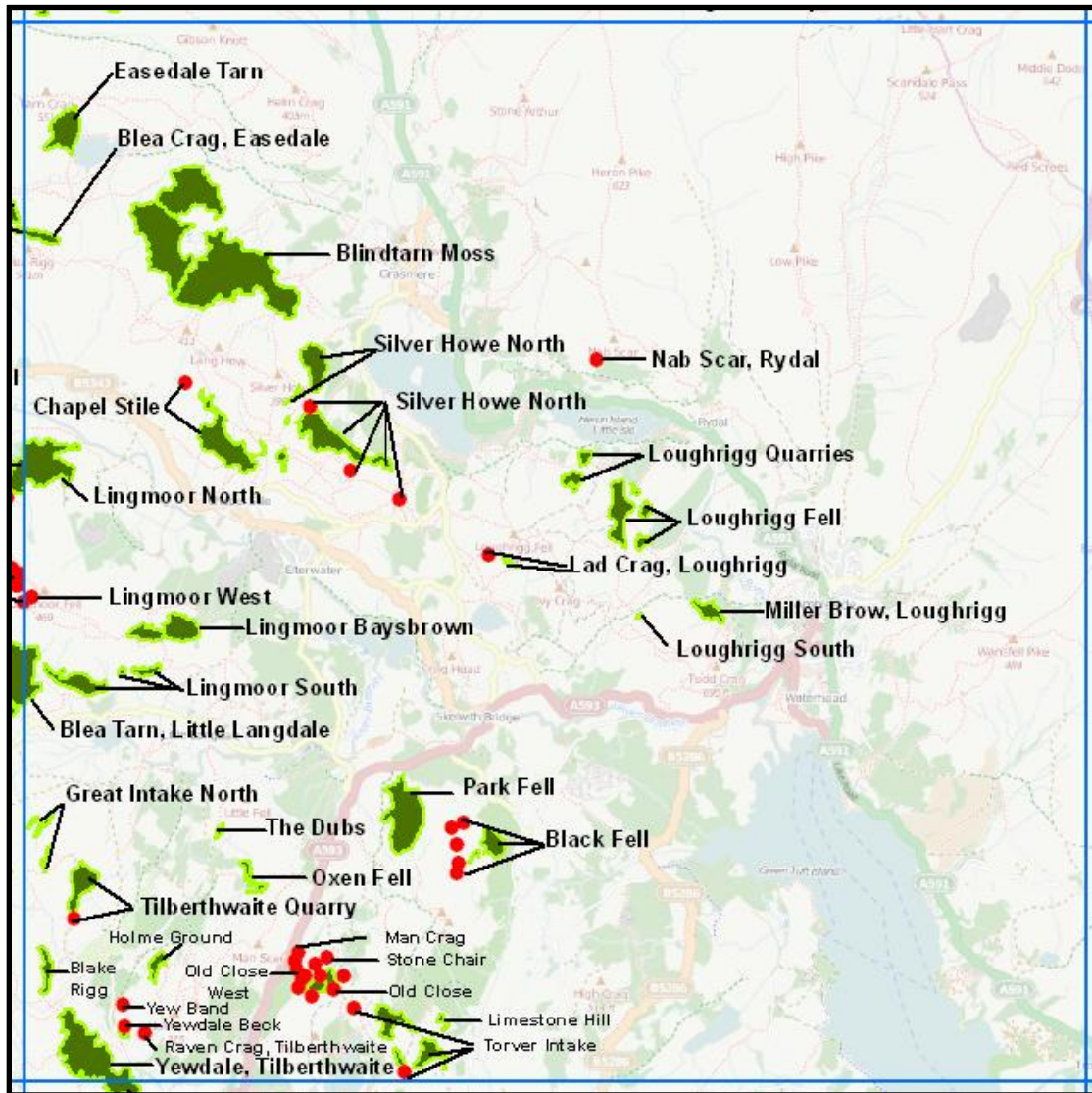
- NY 29399 19950 13 stems.
- NY 29304 19926 4 stems
- NY 29538 19504 1 stem

A few juniper are regenerating around the margins of the stand but the numbers of young and seedling bushes seen are insufficient to maintain the population in the long term.

A red fox (dog) was disturbed from the crags and *Racomitrium ericoides* found on the scree below Goat Crag.

A large patch of bearberry was identified at NY 29327 19787 and four more patches were found on the base of the crags as far north as NY29304 19926.

# NY30



## Sites List:

Jun-NY2903-01	Blea Tarn, Little Langdale	Jun-NY3200-01	Old Close
Jun-NY2904-01	Lingmoor West	Jun-NY3201-01	Oxen Fell
Jun-NY2908-01	Blea Crag, Easedale	Jun-NY3201-02	Old Close West
Jun-NY3000-01	Yewdale Beck	Jun-NY3201-03	Stone Chair
Jun-NY3000-02	Yew Band	Jun-NY3201-04	Man Crag
Jun-NY3000-03	Yewdale, Tilberthwaite	Jun-NY3206-01	Silver Howe South
Jun-NY3001-01	Tilberthwaite Quarry	Jun-NY3206-02	Silver Howe North
Jun-NY3001-02	Blake Rigg	Jun-NY3300-01	Torver Intake
Jun-NY3002-01	Great Intake North	Jun-NY3300-02	Limestone Hill
Jun-NY3003-01	Lingmoor South	Jun-NY3302-01	Park Fell
Jun-NY3005-01	Lingmoor North	Jun-NY3402-01	Black Fell
Jun-NY3008-01	Easedale Tarn	Jun-NY3404-01	Lad Crag, Loughrigg
Jun-NY3100-01	Raven Crag, Tilberthwaite	Jun-NY3504-01	Loughrigg South
Jun-NY3101-01	Holme Ground	Jun-NY3505-01	Loughrigg Fell
Jun-NY3102-01	The Dubs	Jun-NY3505-02	Loughrigg Quarries
Jun-NY3104-01	Lingmoor Baysbrown	Jun-NY3506-01	Nab Scar, Rydal
Jun-NY3105-01	Chapel Stile	Jun-NY3604-01	Miller Brow, Loughrigg
Jun-NY3107-01	Blindtarn Moss		



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blea Tarn	Equiv. L. Ward site (s): Blea Tarn
Site Ref. Code: Jun-NY2903-01	Survey date: 26/07/11
Recorder name (s): Mike Douglas, Sarah Johnston	Cent. grid ref: NY 297 038
Valley / area: Little Langdale	Altitude: 130m. - 320m.
Aspect: Various	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
5 Blea Tarn East
- c) Area of sub stands and total area?

Sub stand	A (east)	B (West)	C (outlier)					Total
Area	23.7ha	16.6ha						40.3ha

### 3. Plant numbers and Juniper sub-species?

**Ssp *J.c.communis***

Sub stand	A	B	C					Total
Count	1580	2015	30					3625
Method	VP photo	VP	VP					VP photo
Confidence	M	M	H					M

### 4. Dominant habitats and other features / vegetation present: bracken dominated.

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

Woodland

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Almost all accessible juniper show evidence of browsing and only one seedling was seen.

### 6. Other land management affecting juniper? Shading – tall trees and bracken.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	None seen	>90%	present	Present
Comments: 1 seedling seen. Dead trees may have been under-estimated due to bracken cover.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Blea Tarn and Lingmoor file, July 2011, 060	NY29546 04137	171°	N/A	Overview of valley bottom (sub-stand B)
Blea Tarn and Lingmoor file, July 2011, 072	NY29554 04154	61°	N/A	Looking across valley to sparse juniper (sub-stand A)
Blea Tarn and Lingmoor file, July 2011, 073	NY29554 04154	77°	N/A	Looking across valley to sparse juniper (sub-stand A)

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Standard trees include holly, yew, rowan, sycamore, oak, birch and ash. Recorded 4 redstart, yellowhammer, willow warbler, whitethroat, robin, great and coal tit, redpoll, blackbird and siskin.

Most of the younger juniper were found in wet flushes / damp areas, and some of these were acting as a base for Sphagnum growth.

Stand generally heavily browsed, with high sheep density at present.

Additional notes after 26/06/2012 visit. Two male beautiful demoiselle along stream NY296036. Three small pearl bordered butterflies in same area.

### October 2013:

After two seasons of stock exclusion juniper seedlings are now easy to find on thinner soils around crags. Despite frequent incursions by small numbers of sheep, seedlings, established bushes and planted juniper further upslope have not been browsed since exclusion.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Lingmoor West	Equiv. L. Ward site (s): Blea Tarn
Site Ref. Code: Jun-NY2904-01	Survey date: 15/09/2011
Recorder name (s): MD JA AC	Cent. grid ref: NY2904-01
Valley / area: Little Langdale	Altitude: 210 – 370m
Aspect: WSW	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
YES
- d) GPS number and track name / label? GPS6 Blea Tarn
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	5.73									5.73
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>570</b>									<b>570</b>
Method	<b>VP Photo</b>									<b>VP photo</b>
Confidence	<b>Medium</b>									<b>Medium</b>

### 4. Dominant Vegetation Dry Heath

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer ?

Other

.....

### Indicators of high grazing / browsing pressure?

Med/patchy – more accessible areas have grazed sward incl. Molinia, some Calluna & Erica c. grazed to cushions. Found 10's of seedlings in couple of wet patches.

### 6. Other threats:

Larch plantation self-seeding elsewhere on slope. Old & young Sycamore present.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Yes	10%	40%	45%	No	5%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
	29551 04747	32deg		Oblique shot of slope showing bulk of Juniper and assoc. habitat
	29116 04541	63deg		VP photo from other side of tarn, for VP count.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Larch plantation self-seeding across slope, Birch, Sycamore (some large old trees & younger individuals), Hawthorn, Rowan, Holly, Oak, Cherry.

Birds – 5 Ring Ouzel, Kestrel, Chaffinch.

Butterflies – Tortoiseshell, Peacock & Red Admiral.

Some more base-rich areas on the slope, rich in Thyme & Fairy flax. Didn't walk through Larch plantation, at the south boundary of the stand, to define extent of Juniper.

Restoration:

Although this site has a good mix of habitats and juniper age classes, it appears that some areas are heavily grazed and juniper regeneration will be limited at these locations. On the other hand, there is some self-seeding of larch amongst the juniper and there are many other tree species present close by. Drastic reductions in sheep stocking density may allow the spread of more tall trees including sycamore, and as such the best option for this area may be a greater degree of off-wintering of sheep.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Blea Crag	Equiv. L. Ward site (s): Easedale (part of)
Site Ref. Code: Jun-NY2908-01	Survey date: 20/09/2011
Recorder name (s): MD	Cent. grid ref: NY29900 08200
Valley / area: Grasmere	Altitude: 360 – 500m
Aspect: NE	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?
- f) GPS number and track name / label?
- g) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area	2.2	2.4	3							7.6Ha
Confidence	3	3	3							

### 3. Plant numbers and Juniper sub-species?

Ssp.....

Sub stand	A	B	C							Total
Count	90	60	30							180
Method	VP	VP	VP							
Confidence	Medium	Medium	Medium							

### 4. Dominant Vegetation: Acid grassland.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other

.....

### Indicators of high grazing / browsing pressure?

Nardus dominant & abundant over large areas. Most Juniper accessible to sheep show browsing signs, but most Juniper is growing on crags.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Present	Present	Present	Present	Present	Present
Comments: Not accessed closely for accurate assessment.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2908-01A	NY30316 08024			Oblique shot of slope.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Numerous Ash, Rowan & Birch with small clone of Aspen. Lime rich flushes with greater floral diversity (S. aizodes, S. stellara, A. alpine & Allchemilla sp.) all short-cropped.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Yewdale, Tilberthwaite	Equiv. L. Ward site (s): Beck Yewdale Tot
Site Ref. code: Jun-NY3000-03	Survey date: 16/01/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY30710 00200
Valley / area: Tilberthwaite	Altitude: 180m to 320m
Aspect: Various	Ownership:

### 2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map?  
Yes
- h) GPS number and track name / label?  
N / A
- i) Area of sub stands and total area?

Sub stand	A	B								<b>Total</b>
Area										25.77ha
Confidence	4	4								4

### 3. Plant numbers and Juniper sub-species?

**Ssp...J.c.comm**

.....

Sub stand	A	B								<b>Total</b>
Count	1826	2563								4389
Method	VP photo	VP photo								VP photo
Confidence	L	L								L

### 4. Dominant Habitat / Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Every third juniper browsed, and browse lined and pruned juniper easy to find.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	present	X	present

Comments:

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3000-03A	NY31267 00362	218 degrees		Overview of southern half of stand, taken from Raven Crag, 07/05/2013
Jun-NY3000-03B	NY31267 00362	273 degrees		Overview of southern half of stand, taken from Raven Crag, 07/05/2013
Jun-NY3000-03C				Sheep pruned juniper, 16/01/2013

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Numerous tall trees included birch, holly, rowan, hawthorn, ash, oak and sycamore. The stand shows signs of chronic high grazing impacts, with numerous browse lined bushes and a lack of regeneration in recent decades.

Paired soil samples were taken at the northern end of the stand in early 2013, one of a pair from underneath a juniper canopy, and the other on open grassland close by. These were analysed by Sue Ward of Lancaster University. The results are shown below and although the expected differences in soil nitrogen and carbon were thrown up, these weren't statistically significant. More samples would need to be taken from more different sites to illustrate (or disprove) junipers role as a soil builder.

Soil samples, 2013		Soil % C	Soil % N	Soil C:N ratio	Soil pH	Soil % Moisture
<b>Under Juniper</b>	Mean	26.31	1.66	15.78	4.08	34.06
	Standard Deviation	9.32	0.57	0.29	0.89	15.18
<b>Matching control site</b>	Mean	18.06	1.42	12.78	4.60	47.96
	Standard Deviation	6.45	0.49	1.10	0.77	20.44

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Tilberthwaite Quarry	Equiv. L. Ward site (s): Tilberthwaite Knott / High
Site Ref. Code: Jun-NY3001-01	Survey date: 06/12/2011
Recorder name (s): Mike Douglas	Cent. grid ref: NY30522 01884
Valley / area: Tilberthwaite	Altitude: 240 – 380m
Aspect: various	Ownership:

### 2. Stand area:

e) Have you changed the boundaries of the stand on the survey map?

Yes

j) GPS number and track name / label?

k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	6.68									6.68
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>961</b>									<b>961</b>
Method	<b>VP</b>									<b>VP</b>
Confidence	<b>M</b>									<b>M</b>

### 4. Dominant Vegetation/ habitat ...Bracken.....

#### Other vegetation / habitats present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Many accessible juniper showing browse line. Current browsing of long shoots infrequent, so frequency of browse lines and pruned bushes suggests winter browsing is a problem. Many sheep out wintered at present.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
		present	present	present	
Comments: Snow on the ground and difficult access so seedling, young and dead trees could have been missed.					

**Are fruit bearing trees present?**                      Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Winter browsing appears to be a problem at this site with browse lines and pruning suggesting that this has been a problem for a long period.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Great Intake North	Equiv. L. Ward site (s): Tilberthwaite Knott
Site Ref. code: Jun-NY3002-01	Survey date: 07/05/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY3017 0243
Valley / area: Tilberthwaite	Altitude: 250m – 380m
Aspect: 350 degrees	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- l) GPS number and track name / label?  
N / a
- m) Area of sub stands and total area?

Sub stand	A	B	C							<b>Total</b>
Area										1.92ha
Confidence	4	4	4							4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm***

.....

Sub stand	A	B	C							<b>Total</b>
Count	198	120	65							383
Method	VP	VP	VP							VP
Confidence	H	H	H							H

### 4. Dominant Vegetation ...Dry heath.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsing on juniper light and patchy, the exception being one mature bush which had 100% of shoots removed on the lower slopes.

### 6. Other threats:    None

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
present	present	>30%	>50%	present	present
Comments: 1 seedling and 10 young found,					

**Are fruit bearing trees present?**

Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Generally healthy juniper stand with little browsing pressure. Natural regeneration, though present is thin on the ground though. Scattered trees included yew, holly and rowan, and there were also two each of larch and birch within sub-stand C. Sub-stand A refers to the southernmost patch of juniper, C the northern most.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Lingmoor South	Equiv. L. Ward site (s): Lingmoor
Site Ref. Code: Jun-NY3003-01	Survey date: 29-09-2011
Recorder name (s): MD AC	Cent. grid ref: NY 307 037
Valley / area: Little Langdale	Altitude: 170 – 330 m.
Aspect: Southerly	Ownership:

### 2. Stand area:

g) Have you changed the boundaries of the stand on the survey map?  
YES

n) GPS number and track name / label?

o) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										8.89 ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B	C							Total
Count	2060	152	753							2965
Method	VP	VP	VP Photo							VP+photo
Confidence	L	H	M							M

### 4. Dominant Vegetation ...Bracken

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Signs of browsing on most accessible Juniper but very few with browse line. Very few seedlings (10) and some of these browsed. Higher ground dominated by *Nardus*. DSH browsed back hard. Lots of bare ground on steep slopes with scree.

### 6. Other threats: None

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead

Y	Y	<10%	>90%	N	Y
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Birch and Rowan common especially in A, also Hawthorn, Holly, Sycamore, Yew, Ash & Oak. Very old trees in A – one of which is 6m high and 45cm diameter at base.

Coal Tits present. *Calluna* and *E. cinerea* present, but no bilberry.

Sub-stand A has some lime-rich areas with New Zealand willowherb, birdsfoot trefoil, fairy flax, thyme and wet flushes with marsh lousewort & fumitory.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Lingmoor North	Equiv. L. Ward site (s): Lingmoor Oak How W and E
Site Ref. code: Jun-NY3005-01	Survey date: 31/07/2012
Recorder name (s): M. Douglas, S. Johnson	Cent. grid ref: NY3013 0587
Valley / area: Gt Langdale	Altitude: 150m – 330m
Aspect: 358 degrees	Ownership:

### 2. Stand area:

h) Have you changed the boundaries of the stand on the survey map?

Yes

p) GPS number and track name / label?

N / A

q) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area	19.80	-	-							19.80
Confidence	5	3	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B	C							Total
Count	1770	132	20							1922
Method	VP photo	VP	VP							VP photo
Confidence	L	h	h							L

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Along the lower altitude boundary browsed juniper were found after some searching, and *Calluna* and *Erica cinerea* were browsed to cushions. As we gained altitude browsing and grazing pressure decreased to almost zero – even holly experiencing very light browsing and getting away. There was one small patch of light red deer browsing – on two adjacent junipers at a height of five foot. DSH around the upper boundary was very healthy with very little browsing obvious over the last decade.

### 6. Other threats:

Sycamore: Present in good numbers, with a number of age classes present, including seedlings. First patch of at least ten trees around NY29895 05730, oldest at least thirty years old. Second patch of at least 11 sycamores around NY 30202 05641, oldest at least forty years old. Third patch of at least 5 sycamores around NY 30150 05940.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	X
Comments: Tens of seedlings found around boundary – well spread amongst a variety of vegetation types. Young trees growing and establishing well through deep <i>Calluna</i> .					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3005-01A	NY3006 05649	344 degrees		View from upper boundary
Jun-NY3005-01B	NY30261 05676	285 degrees		
Jun-NY3005-01C	NY30261 05676	317 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This is a very healthy stand which has experienced frequent (continuous?) regeneration events in the last 50 years. Regeneration of tall trees within the juniper may be a problem lower down the slope, but regeneration of juniper at the southern end may allow the stand to migrate upslope over time, producing a sequence of woodland and scrub habitats along the altitudinal gradient. The juniper here is one of very few in the Lake District which grades into dwarf shrub heath along its upper boundary rather than grass or bracken. Associated trees include ash, rowan, larch, yew, holly, birch and oak, including an ancient coppiced oak at NY 30465 05788. Sycamore is also present though and this may be a threat to the juniper, as it is currently regenerating well from the numerous large seed trees scattered throughout the stand. The count of 1922 bushes is likely to be a large underestimate, and the resulting juniper density when using this total – of 100 bushes per hectare, seems to be easily exceeded throughout the stand.

A breeding bird survey was carried out here in 2013, and the following species were observed as holding territories:

Species
Willow warbler
Lesser redpoll

Chaffinch
Wren
Robin
Dunnock
Blackbird
Song thrush
Coal tit
Siskin
Linnet
Goldcrest
Tree pipit
Mistle thrush
Cuckoo
Bullfinch

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Easedale Tarn	Equiv. L. Ward site (s): Easedale (part of)
Site Ref. Code: Jun-NY3008-01	Survey date: 20/09/2011
Recorder name (s): MD	Cent. grid ref: NY30400 08950
Valley / area: Grasmere	Altitude:300 – 520m
Aspect: SE	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map?  
Yes
  
- r) GPS number and track name / label? CWT6 Easedale 1 & 2
  
- s) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	8.8									8.8Ha
Confidence	5									

### 3. Plant numbers and Juniper sub-species?

Ssp.....

Sub stand	A									<b>Total</b>
Count	786									786
Method	VP									
Confidence	Medium									

### 4. Dominant Vegetation ...Bracken.....

#### Other vegetation types present:

#### acid grassland

dry heath

Limestone grassland

#### Scree

Limestone scree

#### wet grassland / rushes

wet heath / mire

Bracken

#### Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other

.....

#### Indicators of high grazing / browsing pressure?

**Nardus dominant & abundant over large areas. Most Juniper accessible**

**to sheep have browsing signs, though 2 seedlings found at relatively**

**inaccessible point at N boundary (460m). Dwarf shrub heath only on**

**cliffs. Bilberry growing through Nardus all cropped short.**

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Present	Present	Present	>90%	None	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
	30991 08404			Whole stand photo from across the tarn.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Ash, Oak, Rowan, Holly & Hawthorn growing amongst Juniper. Carlisle Thistle at base of rich flush. Wheatear, Robin, Wren & Meadow Pipit seen. Numerous Herdwick sheep with droppings everywhere.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Holme Ground	Equiv. L. Ward site (s): Holme total
Site Ref. code: Jun-NY3101-01	Survey date: 04/05/2012
Recorder name (s): P and R Howlett, H. Corton	Cent. grid ref: NY3124 0112
Valley / area: Tilberthwaite	Altitude: 190 – 230m
Aspect: 280 degrees	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
Yes
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	2.21									2.21ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm***

.....

Sub stand	A									<b>Total</b>
Count	242									242
Method	WT									WT
Confidence	M									M

### 4. Dominant Habitat / Vegetation ...woodland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Some browsing of juniper seen during November 2011 survey.

### 6. Other threats: Shading

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
X	present	40%	60%	present	present
Comments: lots of berry bearing bushes.					

**Are fruit bearing trees present?**

Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper stand seemingly at risk from both red deer browsing and shading, with numerous leggy bushes illustrating the extent of competition with tall trees.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Chapel Stile	Equiv. L. Ward site (s): Gt Langdale Harry West and Thrang Crag
Site Ref. code: Jun-NY3105-01	Survey date: 20/07/2012
Recorder name (s): M. Douglas and S. Johnson	Cent. grid ref: NY3188 0598
Valley / area: Great Langdale	Altitude: 220m – 360m
Aspect: 225 degrees	Ownership:

### 2. Stand area:

- k) Have you changed the boundaries of the stand on the survey map?  
Yes
- v) GPS number and track name / label?  
N / A
- w) Area of sub stands and total area?

Sub stand	A	B	C	D						<b>Total</b>
Area										15.57ha
Confidence	4	4	4	4						4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm***

.....

Sub stand	A	B	C	D						<b>Total</b>
Count	66	1778	?	?						1844
Method										VP photo
Confidence	L	M								M

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Most bushes winter browsed and browse lined juniper easy to find.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
		present	dominant	present	Present
Comments: Tens of trees seem to be infected with <i>Phytophthora austrocedrae</i> .					

**Are fruit bearing trees present?**

Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3105-01A				Looking south from the northern end of the main sub-stand.
Jun-NY3105-01B	NY304 056			Photo of main sub-stand taken from Oak How

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This stand appears to be in similar condition to neighbouring stands at Silver How and Blindtarn Moss, in that it is struggling under heavy browsing and has not seen substantial regeneration in many decades.

The northern point (Robin Gill) has 66 juniper and the main sub-stand 1778 juniper. The two southern sub-stands were not counted, so the total bush numbers given is likely to be a large under-estimate.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Blindtarn Moss	Equiv. L. Ward site (s): Blindtarn Moss
Site Ref. Code: Jun-NY3107-01	Survey date: 17/08/11
Recorder name (s): Mike Douglas, Sarah Johnson	Cent. grid ref: NY 315 076
Valley / area: Grasmere	Altitude: 200 – 420m
Aspect: Various	Ownership:

### 2. Stand area:

- l) Have you changed the boundaries of the stand on the survey map?  
Yes
- x) GPS number and track name / label?  
N/A
- y) Area of sub stands and total area?

Sub stand	A	B	C							<b>Total</b>
Area	46ha	26ha	18.6ha							90.6 ha

### 3. Plant numbers and Juniper sub-species?

Ssp comm.

Sub stand	<b>A</b>	<b>B</b>	<b>C</b>							<b>Total</b>
Count										>8000
Method										Photos
Confidence										Low

### 4. Dominant vegetation and summary of other vegetation types within and immediately around the stand: Bracken

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

**Was a grazing impact assessment carried out?**      Yes / no

### Indicators of high grazing / browsing pressure?

Dwarf shrub heath present only on the most inaccessible crags, abundant *Nardus stricta* and *Juncus squarrosus*, and very little juniper regeneration point to high grazing pressure. Although current years juniper growth is untouched it looks like browsing back into woody growth is frequent, perhaps illustrating that winter browsing is a problem for the juniper on this site. There is currently less heavy grazing at high altitude and we found around 20 seedlings and a number of young trees between NY 31176 07727 and NY 31050 08010.

## 6. Other threats

A number of large sycamores grow amongst the juniper, and they have obviously successfully set seed within the last 20 years as a number of young trees are also present. The potentially harmful shading effects of this species will need to be taken into account if stock numbers are reduced, or if fenced exclosures are put in place.

A large die off of juniper has occurred above Blindtarn Moss around NY3180 0757.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	>90%	present	Present
Comments: Perhaps 300 dead or dying juniper, the latter with rusting foliage.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Description of fixed point
Jun-NY3107-01A	NY 32271 07406	306°	Overview of high ground at SE corner of the stand
Jun-NY3107-01B	NY 31909 08039	273°	Yew Crag photo
Jun-NY3107-01C	NY 31909 08039	224°	Swinescar Hause photo
Jun-NY3107-01D	NY 31909 08039	190°	Swinescar Pike photo
Jun-NY3107-01E	NY 31909 08039	160°	Looking SE at remaining juniper

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Larger standard trees are scattered throughout the stand at higher altitudes, while lower down these become more dense. Trees include ash, oak, sycamore, yew, holly, rowan, birch, larch and hawthorn. A number of bird species were feeding in the juniper, with goldcrest, redpoll, siskin, blackcap, wren, willow warbler, robin, tree pipit, bullfinch, redstart, mistle thrush and sparrowhawk all present.

20/09/11: Mapped out three sycamore around Swinescar Hause:

1. NY 31443 07369 Large Sycamore close to large Ash tree.
2. NY 31385 07495 Large Sycamore, position estimated from 100 m away.
3. NY 31477 07503 Small Sycamore close to beck.

Also watched 25 ring ouzel feeding on and around juniper on this date (NY 31638 07325).

20/07/2012: Ring counted a windblown juniper stem (one of two – the other is still attached to its base!). It measured 88cm girth and 28cm diameter. Counted 76 rings.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Old Close	Equiv. L. Ward site (s): Stone Chair and Old Close
Site Ref. code: Jun-NY3200-01	Survey date: 01/05/2012
Recorder name (s): P and R Howlett, H. Corton.	Cent. grid ref: NY3281 0093
Valley / area: Tom Heights	Altitude: 150m – 210m
Aspect: Various	Ownership:

### 2. Stand area:

m) Have you changed the boundaries of the stand on the survey map?

Yes

z) GPS number and track name / label?

N / A

aa) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.63									3.63ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

*Ssp...J.c.comm*

.....

Sub stand	A									<b>Total</b>
Count	338									338
Method	WT									WT
Confidence	H									H

### 4. Dominant Habitat / Vegetation ...woodland / bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

### 6. Other threats: Shading

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	25%	75%	X	present
Comments: Lots of dead bushes – some with saw cuts.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Oxenfell	Equiv. L. Ward site (s): Oxenfell North
Site Ref. Code: Jun-NY3201-01	Survey date: 30/06/2011
Recorder name (s): M. Douglas, B. King, D. Benham	Cent. grid ref: NY321 019
Valley / area: Hodge Close	Altitude: 160 – 170m.
Aspect: Various	Ownership:

### 2. Stand area:

n) Have you changed the boundaries of the stand on the survey map?

Yes

bb) GPS number and track name / label?

n/a

cc) Area of sub stands and total area?

Sub stand	NW	Cent	SE							Total
Area	1.14 ha	0.03 ha	0.08 ha							2.21ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	NW	Cent	SE							Total
Count	287	119	130							536
Method	WT	WT	WT							WT
Confidence	H	H	H							H

### 4. Dominant Vegetation ...bracken.....

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

Woodland

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Sheep not grazing at present but lack of DSH (other than on inaccessible crags) and abundance of *Nardus stricta* and *Juncus squarrosus* suggests that there is (or was) high grazing pressure through some of the year.

### 6. Other threats: Shading by a variety of tall tree species.

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	X	90%	present	10%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3201-01A	NY32220 01798	286 degrees		Dead juniper in shade of large sycamore
Jun-NY3201-01B	NY32120 01923	232 degrees		Young sycamore growing amongst dense juniper and bracken

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Singing / calling siskin, redpoll, willow warbler, crossbill, whitethroat and robin present. Very tall junipers, up to 6m. tall under scattered oak, birch, rowan, larch, willow, ash and sycamore. Flushes with a variety of Sphagnums and bog pimpernel. Green tiger beetle on track.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Silverhowe South	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3206-01	Survey date: 20/07/2012
Recorder name (s): M. Douglas, S. Johnson	Cent. grid ref: NY 3284 0607
Valley / area: Grasmere	Altitude: 200m – 260m
Aspect: 45 degrees	Ownership:

### 2. Stand area:

o) Have you changed the boundaries of the stand on the survey map?

N / A

dd) GPS number and track name / label?

N / A

ee) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area	13.47	-	-	-						13.47
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm .....

Sub stand	A	B	C	D						Total
Count	1330	3	11	15						1359
Method	VP	VP	VP	VP						VP
Confidence	L	H	H	H						L

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Most accessible bushes are browsed, with more than two thirds of last years shoots removed on many bushes. Much of the grassland is *Nardus* dominated and we came across numerous large patches of *Juncus squarrosus*.

**6. Other threats:** Possible *Phytophthora austrocedrae* infection with instant test kits showing positive.

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	>75%	present	present
Comments: Only 4 young trees found.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3206-01A	NY 32695 06533	171 degrees		Overview of whole stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Outlier B is the southern outlier, C the Dow Crag outlier, and D the Northern outlier.

Associated trees include ash, rowan, holly yew, sycamore, hawthorn and oak. Like other stands in this area, this stand has been over-grazed for a long period, with very little regeneration of juniper in the last 60 years.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Silverhowe North	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3206-02	Survey date: 20/07/2012
Recorder name (s): M. Douglas, S. Johnson	Cent. grid ref: NY 3275 0672
Valley / area: Grasmere	Altitude: 180m – 350m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

p) Have you changed the boundaries of the stand on the survey map?

N / A

ff) GPS number and track name / label?

N / A

gg) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area	-	-	-	-						7.87
Confidence	5	5	5	5						5

### 3. Plant numbers and Juniper sub-species?

Ssp... comm.....

Sub stand	A	B	C	D						Total
Count	?	45	39	52						?
Method		VP	VP	VP						
Confidence		H	H	H						

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Most juniper growing on inaccessible crags. Otherwise, grazing pressure likely to be similar to Silver Howe South (Chronically high)

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	III	Dead
			T		
Comments: Close inspection not possible due to terrain					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
 Sub-stand B is the northern outlier, D the southern, and C in between. The main sub-stand, A, was not counted due to poor vantage points.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Park Fell	Equiv. L. Ward site (s): Park Fell
Site Ref. code: Jun-NY3302-01	Survey date: 29/08/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: NY 3360 0248
Valley / area: Skelwith	Altitude: 120 – 250m
Aspect: Various	Ownership:

### 2. Stand area:

q) Have you changed the boundaries of the stand on the survey map?

Y

hh) GPS number and track name / label?

N / A

ii) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	17.23									17.23ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c. comm

.....

Sub stand	A									<b>Total</b>
Count	818									818
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...Acid grass.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Browsing pressure low at the moment. 45 – 50 sheep graze for six months of the year and 10 cattle for one month. Has been in HLS agreement for 2 years (?)

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
x	10%	55%	30%	x	5%
Comments: Around 40 – 50% of bushes with berries.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3302-01A				N. end of stand
Jun-NY3302-01B				Wet flush within juniper stand
Jun-NY3302-01C				N. end of stand – further upslope.

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
Established bushes seem to be in good condition under current management regimes, though substantial regeneration has still not occurred since the change in management (2 years ago?).

MD – associated trees include larch, birch, holly, rowan, ash, yew and sycamore. Large individual of the latter present at the north end of the stand and this was surrounded by small seedlings on my first visit in May 2011. I also found one juniper seedling on a later visit late in December 2012.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Black Fell	Equiv. L. Ward site (s): Black Fell, Skelwith
Site Ref. code: Jun-NY3402-01	Survey date: 10/09/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY 3439 0225
Valley / area: Skelwith	Altitude: 170m – 280m
Aspect: Various	Ownership:

### 2. Stand area:

- r) Have you changed the boundaries of the stand on the survey map?  
Yes
- jj) GPS number and track name / label?  
N / A
- kk) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G			Total
Area										4.48ha
Confidence										4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm***

.....

Sub stand	A	B	C	D	E	F	G			Total
Count	191	117	8	1	1	4	1			323
Method										WT
Confidence										M

### 4. Dominant Vegetation ...Woodland.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Majority of juniper browsed, with small bushes suppressed, particularly in the more open grassy areas to the S and E. Some summer browsing and this, alongside the height of browsing on larger bushes and some thrashing damage, suggests red deer are the main culprit. Heather browsed to carpets where present, with little flowering.

**6. Other threats: Shading.** Tall trees shading and killing some juniper in the E of the site.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	>80%	X	5 – 10%
Comments: 8 suppressed juniper at the southernmost point approx. 6 – 30yrs old but very small (mostly less than 1').					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Good mixture of taller trees mostly to the east of the site, with closed canopy woodland extending upslope to shade out juniper. These include oak, ash, cherry, birch, yew, sycamore, beech, hazel, rowan, holly, larch, Scot's pine.

Red deer browsing on juniper - moderate to high impacts with up to 100% of shoots removed in winter and some signs of recent (summer) browsing. One bush with thrashing damage too. These animals may be responsible for suppressing the growth of young and mature bushes further upslope to the south. These individuals are unlikely to grow and establish under current conditions.

Height, extent and frequency of browsing suggests red deer rather than sheep are the main browsers. Sheep have been off-wintered since 2004.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Lad Crag, Loughrigg	Equiv. L. Ward site (s): Loughrigg Tarn
Site Ref. Code: Jun-NY3404-01	Survey date: 28/07/2012
Recorder name (s): R. Nutman and G. Thompson	Cent. grid ref: NY 349 049
Valley / area: Loughrigg Fell	Altitude: 180m – 250m
Aspect: 225 degrees	Ownership:

### 2. Stand area:

s) Have you changed the boundaries of the stand on the survey map?

Yes

ll) GPS number and track name / label?

mm) Area of sub stands and total area?

Sub stand	A	B								Total
Area	0.51									0.51
Confidence	4									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B								Total
Count	154	17								171
Method	VP	VP								VP
Confidence	M	H								H

### 4. Dominant Vegetation / Habitat ...bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	20%	75%	X	X
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Loughrigg Fell	Equiv. L. Ward site (s): Loughrigg Rydal total
Site Ref. code: Jun-NY3505-01	Survey date: 29/05/2013
Recorder name (s): R. Nutman and G Thompson	Cent. grid ref: NY 3561 0541
Valley / area: Loughrigg	Altitude: 110m – 210m
Aspect: Various	Ownership:

### 2. Stand area:

t) Have you changed the boundaries of the stand on the survey map?

Yes

nn) GPS number and track name / label?

N / A

oo) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area										10.82
Confidence										5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm

.....

Sub stand	A	B	C	D	E					Total
Count	831	33	122	75	4					1065
Method	VP	VP	VP	VP	VP					VP
Confidence	H	H	H	H	H					H

### 4. Dominant Vegetation ...Acid grassland.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

No juniper seedlings but no browsing of established bushes at present either.

Seedlings of ash and rowan un-browsed.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
X	5%	10%	60%	present	25%
Comments: More than 5% of the total show discolouration.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3505-01A				Overview of stand from nearby summit.
Jun-NY3505-01B				Old juniper in main sub-stand.
Jun-NY3505-01C				Various tall trees amongst juniper in main sub-stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
 Main sub-stand = A, NE sub-stand = B, Eastern sub-stand = C, SE sub-stand = D. 'E' represents 4 scattered bushes around the other sub-stands.  
 Birch, ash, oak, rowan, holly and sycamore present.

12/06/2013 M. Douglas visited the site to look for *Phytophthora austrocedrae* but found no obvious symptoms in any bushes. Found some examples of browsing but these were very light, occurring on less than 30% of shoots, and only on a minority of bushes.

Singing redpoll, willow warbler tree pipit, chaffinch, dunnock and meadow pipit within the stand, where larch, yew, elder, oak ash, rowan and sycamore are present.

## Uplands for Juniper Project – Survey Form



### 1. Site details

Site Name: Loughrigg Quarries	Equiv. L. Ward site (s): Loughrigg Rydal total
Site Ref. code: Jun-NY3505-02	Survey date: 29/05/2013
Recorder name (s): R. Nutman and G. Thompson	Cent. grid ref: NY 3518 0572
Valley / area: Loughrigg Fell	Altitude: 70m – 180m
Aspect: 10 degrees	Ownership:

### 2. Stand area:

u) Have you changed the boundaries of the stand on the survey map?

Yes

pp) GPS number and track name / label?

N / A

qq) Area of sub stands and total area?

Sub stand	A	B								Total
Area										3.35ha
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm

.....

Sub stand	A	B	C							Total
Count	48	133	29							210
Method	VP	VP	VP							VP
Confidence	H	H	H							H

### 4. Dominant Vegetation ...Wet heath / mire.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

No recent browsing on juniper

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
X	<5%	5%	65%	present	25%
Comments: 6% of bushes showed discoloured foliage					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3505-02A				Old juniper and holly in southern sub-stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Large adder in northern sub-stand.

A = Northern sub-stand, B = southern sub-stand and C = scattered individuals in the vicinity.

M. Douglas visited 12/06/2013 to check for signs of *Phytophthora austrocedrae* but found no obvious symptoms on any bushes. Found some signs of light browsing but only on a minority of bushes. Singing redpoll and robin present. Holly, ash and rowan growing amongst juniper. Very old juniper at NY 35340 05932. Upright stem more than 50cm diameter at base (and at breast height), fallen stem within the same bush greater than 40 cm diameter at base.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Miller Brow	Equiv. L. Ward site (s): Loughrigg Golf
Site Ref. Code: Jun-NY3604-01	Survey date: 25/07/2012
Recorder name (s): R. Nutman, G. Thompson	Cent. grid ref: NY 3645 0443
Valley / area: Loughrigg Fell	Altitude: 130 -160m
Aspect: NE	Ownership:

### 2. Stand area:

v) Have you changed the boundaries of the stand on the survey map?

Yes

rr) GPS number and track name / label?

ss) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.03									3.03ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	170									170
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

### 6. Other threats:

1 Rhododendron and a number of sycamore present. Could lead to shading of juniper in the future.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	>5%	X	90%	present	X
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3604-01A	NY36356 04509	SSE		East end of main stand
Jun-NY3604-01B	NY36356 04509	SSW		West end of main stand
Jun-NY3604-01C				Showing tree (rowan) growth through protection of old juniper. <i>Primula farinosa</i> in the foreground.

## 9. Comments (associated flora and fauna, survey / access difficulties?):

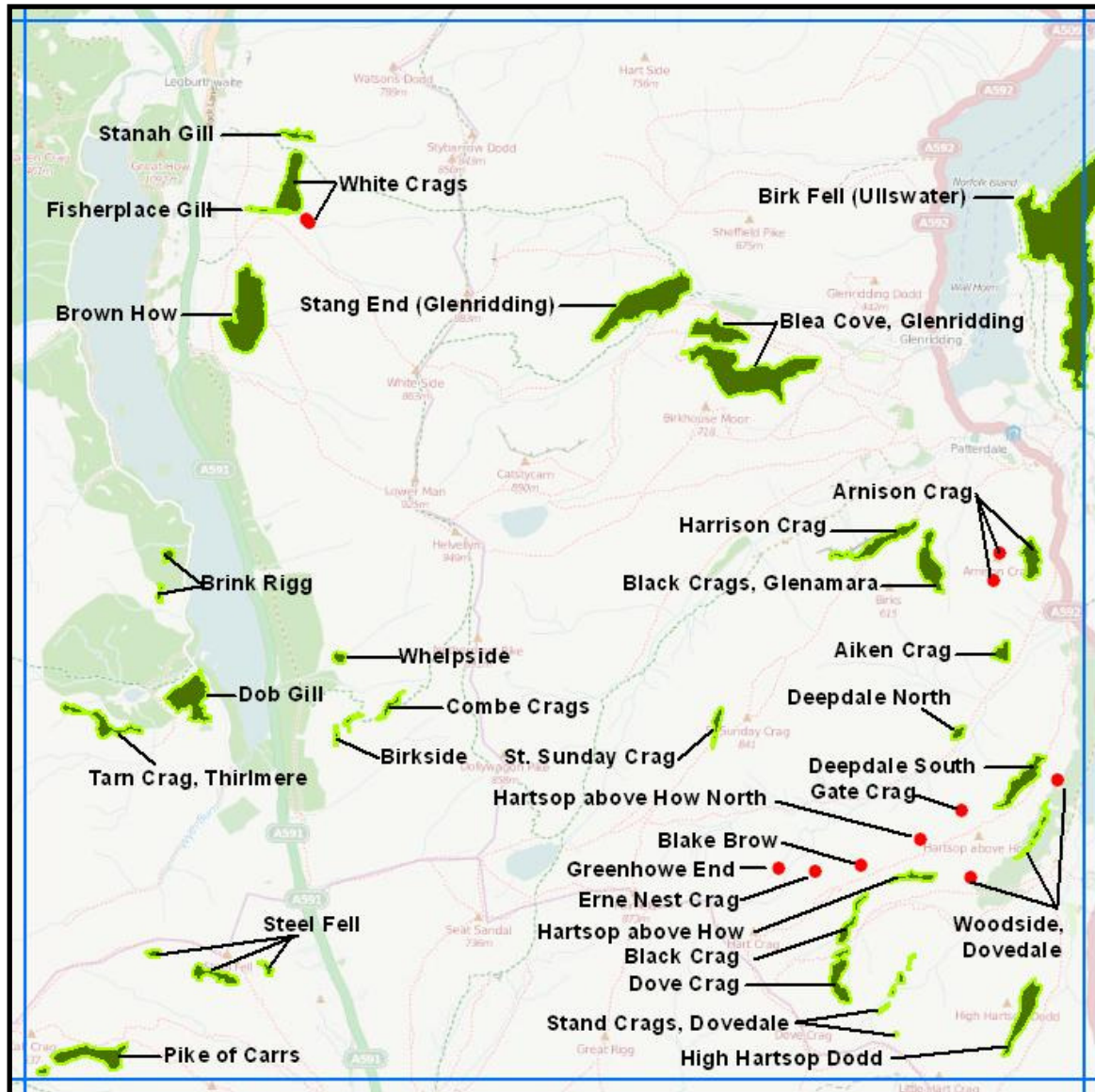
Ash, oak, birch, rowan, sycamore and 1 Rhododendron present.  
Predominantly old, massive, multi-stemmed juniper.

**Restoration** (added by M. Douglas, 16/11/2012): Natural regeneration is absent at present, and has been thin on the ground in recent decades. Although it is difficult to suggest changes to management regimes without further site visits, the photos suggest that more grazing may be required to provide regeneration niches for juniper seed (the photos show tall, un-grazed grass at the end of July). High stocking densities may achieve the opposite effect though, preventing regeneration of juniper as well as negatively affecting adjacent habitats. Out-wintering of sheep should be avoided, as this is the key period for juniper browsing and up-rooting of seedlings.

The presence of shade bearing trees presents a problem for light demanding juniper. As such, any sycamore growing within the juniper stand should be removed or killed. Ring-barking or drilling with herbicide application will kill trees and create standing dead wood, which would be valuable for fungi, invertebrates and birds. Similarly, Rhododendron, which will out-compete juniper in time, should be removed to prevent further spread.

**Site visit 12/06/2013 (MD):** Juniper at this site appears to be suffering from both shading and red deer browsing at the same time. Tall trees are growing up in the protection of juniper and shading them out, while red deer and a predominantly wet substrate are preventing natural regeneration. The only feasible restoration option for this population is to encourage expansion into the drier fields to the SW of the stand. Given the age of the existing bushes, planting would be a good option, alongside a favourable grazing regime of summer grazing only along a broad swathe of land adjacent to the stand.

# NY31



## Sites List:

Jun-NY3010-01	Pike of Carrs	Jun-NY3711-01	Black Crag
Jun-NY3013-01	Tarn Crag, Thirlmere	Jun-NY3711-02	Erne Nest Crag
Jun-NY3110-01	Steel Fell	Jun-NY3712-01	Greenhowe End
Jun-NY3113-01	Dob Gill	Jun-NY3712-02	Blake Brow
Jun-NY3114-01	Bank Crag	Jun-NY3810-01	Stand Crag, Dovedale
Jun-NY3114-02	Brink Rigg	Jun-NY3811-01	Hartsop above How
Jun-NY3213-01	Whelpside	Jun-NY3812-01	Hartsop above How North
Jun-NY3213-02	Birkside	Jun-NY3812-02	Gate Crag
Jun-NY3217-01	Brown How	Jun-NY3813-01	Deepdale North
Jun-NY3218-01	Fisherplace Gill	Jun-NY3814-01	Black Crag, Glenamara
Jun-NY3218-02	White Crag	Jun-NY3815-01	Harrison Crag
Jun-NY3218-03	Stanah Gill	Jun-NY3910-01	High Hartsop Dodd
Jun-NY3313-01	Combe Crag	Jun-NY3912-01	Woodside, Dovedale
Jun-NY3517-01	Stang End (Glenridding)	Jun-NY3912-02	Deepdale South
Jun-NY3613-01	St. Sunday Crag	Jun-NY3914-01	Aiken Crag
Jun-NY3616-01	Blea Cove, Glenridding	Jun-NY3914-02	Arnison Crag
Jun-NY3710-01	Dove Crag	Jun-NY3918-01	Birk Fell (Ullswater)

|  
**Uplands for Juniper Project – Survey Form**



**1. Site details**

Site Name: Pike of Carrs	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3010-01	Survey date: 16/06/2013
Recorder name (s): D. Benham and E. King	Cent. grid ref: NY 3060 1027
Valley / area: Grasmere / Easedale	Altitude: 300m – 490m
Aspect: 180	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
N / A
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A	B								<b>Total</b>
Area										9.61 ha
Confidence	5	5								5

**3. Plant numbers and Juniper sub-species?**

**Ssp...*J.c.comm* .....**

Sub stand	A	B								<b>Total</b>
Count	50	360								410
Method	VP	VP								VP
Confidence	M	M								M

**4. Dominant Vegetation ...Acid grassland.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| <u>dry heath</u>    | wet heath / mire          |
| Limestone grassland | <u>Bracken</u>            |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Accessible junipers have been repeatedly browsed by sheep to topiary forms

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	1%	50%	45%	?	4%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3010-01A	NY30609 10121	NNW		West end of stand
Jun-NY3010-01	NY306 101	S		Old, browsed juniper/

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Mostly old and mature juniper amongst grasses, heather and a few other small trees.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Tarn Crag, Thirlmere	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY3013-01	Survey date: 21/03/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY 30740 13370
Valley / area: Thirlmere	Altitude: 350 – 500m
Aspect: 45 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?
- d) GPS number and track name / label?
- e) Area of sub stands and total area?

Sub stand	1									<b>Total</b>
Area	5.73									5.73
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1									<b>Total</b>
Count	590									590
Method	VP photo									VP photo
Confidence	M									M

### 4. Dominant Vegetation ...Acid grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

*Nardus stricta* dominates large areas of grassland, and where present DSH is grazed back hard. Few signs of browsing on established juniper but it is largely confined to relatively inaccessible cliffs.

**6. Other threats:** Potential for invasion of conifers from nearby forestry – 2 sitka spruce found amongst juniper.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	none	Present
Comments: > 80% old and only two seedlings found.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3013-01A	NY31516 13460	260 degrees		
Jun-NY3013-01	NY 30752 13240	341 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Scattered stand of juniper spread across a series of crags, largely limited to relatively inaccessible cliffs. Associated birch, rowan, holly, oak and Scot's pine. Two Sitka spruce also present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Steel Fell	Equiv. L. Ward site (s): Steel Fell
Site Ref. code: Jun-NY3110-01	Survey date: 26/06/2013
Recorder name (s): D. Benham and E. King	Cent. grid ref: NY 31790 11000
Valley / area: Grasmere	Altitude: 370m – 500m
Aspect: Shoots 170, Blakerigg 190, Ash Crag 90	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										5.21ha
Confidence	4	4	4							4

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A	B	C							Total
Count	50	400	80							530
Method	VP	VP	VP							VP
Confidence	M	M	M							M

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Juniper browsed where accessible and topiary growth forms and browse lining recorded at Ash Crag (MD).

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	30%	60%	7%	3%
Comments: Not accessed closely to see berries.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3110-01A	NY30402 10782	E		Blakerigg Crag
Jun-NY3110-01B				Heavily browsed juniper at Ash Crag
Jun-NY3110-01C				Browse lined juniper at Ash Crag

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
**Most of the juniper on relatively inaccessible slopes, but heavily browsed where sheep gain access. Numerous hawthorns present.**  
**Sub-stand A = Shoots Crag, B= Blakerigg and C= Ash Crag.**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Wythburn Dob Gill	Equiv. L. Ward site (s): Wythburn Dob Gill
Site Ref. Code: Jun-NY3113-01	Survey date: 15 October 2011
Recorder name (s): Pete & Barbara Nelson	Cent. grid ref: NY 315 136
Valley / area: Thirlmere	Altitude: 190m to 350m
Aspect: NE	Ownership:

### 2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map? Yes
- h) GPS number and track name / label? Dob Gill juniper track.gpx
- i) Area of sub stands and total area?

Sub stand	1									<b>Total</b>
Area	10.9									10.9
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp.....

Sub stand	1									<b>Total</b>
Count	2172									2172
Method	VP photo									<b>VP photo</b>
Confidence	M									<b>M</b>

**4. Dominant Vegetation** Juniper, on about 70% of the stand. Bracken and rough grassland elsewhere

#### Other vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

A few trees show a browse line. Short cropped grass sometimes *Nardus stricta* dominated and along with trampled bracken and grazed *Deschampsia cespitosa* and *Juncus effusus*, suggest that this area is moderately to heavily winter grazed.

### 6. Other land management affecting juniper?

Some mature conifers have been felled on the lower slopes, to the benefit of the juniper

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
<1%	5%	15%	80%	-	1%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Dob Gill Composite 1	NY 31543 13533	approx N to NE		From near the summit of Birk Crag
Dob Gill Composite 2	NY 31681 13517	approx N to NE		A spur at about 240m
Jun-NY3113-01B	NY32950 13810	260 degrees		From across the Lake at Juniper Planting site (Combe Gill)

**9. Comments (associated flora and fauna, survey / access difficulties?):**

At least one third of the stand is very dense. The remainder varies from dense to thinly scattered. The size of the stand and its variability makes it difficult to estimate the number of individual trees.

Visit and fixed point photograph by M. Douglas on 21/03/2012 lead to a revision of the count and an addition to the grazing impact section.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bank Craggs, Thirlmere	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3114-01	Survey date: 20/08/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY3128 1459
Valley / area: Thirlmere	Altitude: 300m – 370m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

- e) Have you changed the boundaries of the stand on the survey map?  
N / A
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	0.65									0.65ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A									<b>Total</b>
Count	112									112
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper are heavily browsed. The extent, depth and height of browsing suggests that red deer are the main culprit. I was told that sheep regularly find their way into this area, and they may also contribute to the heavy browsing.

**6. Other threats:** Two mature sycamore are present upslope and these could regenerate well given if grazing pressure is reduced. The same could be said for nearby larch and spruce.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	X	present	>85%	X	present
Comments: 6 seedlings found around NY 31296 14623					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3114-01A				Heavily browsed old juniper
Jun-NY3114-01B				Juniper damaged by browsing and thrashing.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Holly, yew, larch and sycamore present. Juniper look to have been heavily browsed over many years and a reduction in red deer browsing pressure maybe required for juniper seedlings to become established.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Birkside	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3213-02	Survey date: 20/08/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY 3304 1338
Valley / area: Thirlmere	Altitude: 400m – 530m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
N / A
- l) GPS number and track name / label?  
N / A
- m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.39									1.39ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	440									440
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

All accessible bushes very heavily browsed, with some recent browsing of juniper as well as heavy winter browsing. Extreme suppression of growth illustrates that this has been long term. Browse lines suggest sheep are the main grazing animal.

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	present
Comments: Almost all old or mature with just two young bushes found.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3213-02A				Sheep browsed juniper.
Jun-NY3213-02B				Suppressed, sheep browsed junipers.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Very heavily browsed juniper stand.

## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Brown How, Thirlmere	Equiv. L. Ward site (s): Thirlspot
Site Ref. code: Jun-NY3217-01	Survey date: 28/05/2012
Recorder name (s): R. Ansell Davies and A. Watt	Cent. grid ref: NY3210 1720
Valley / area: Thirlmere	Altitude: 240m – 460m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
N / A
- n) GPS number and track name / label?  
N / A
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	21.9									21.90ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp... J.c.comm.....

Sub stand	A									<b>Total</b>
Count	1291									1291
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Hawthorns very stunted due to grazing. Very few young juniper.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage
---------------------

seedling	young	mature	old	Ill	Dead
<1%	<5%	40%	45%	5%	8%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3217-01A	NY31961 16914	45 degrees		
Jun-NY3217-01B	NY 31926 17913	340 degrees		
Jun-NY3217-01C	NY 31996 17158	90 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Holly, ash, birch, hawthorn, rowan, larch and yew present. Saw or heard meadow pipit, willow warbler, wren, chaffinch, grey wagtail, cuckoo, raven and skylark. Also green veined white, small heath and orange tip butterflies.

The total number of bushes includes a number of outliers at the northern and western edge of the stand, comprising 33 juniper.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Fisher Gill	Equiv. L. Ward site (s): Stybeck Farm Nr
Site Ref. code: Jun-NY3218-01	Survey date: 29/04/2012
Recorder name (s): Ruth Ansell-Davies and Annette Watt	Cent. grid ref: NY3231 1821
Valley / area: Thirlmere	Altitude: 270m – 470m
Aspect: 275 degrees	Ownership:

### 2. Stand area:

- h) Have you changed the boundaries of the stand on the survey map?  
Yes
- p) GPS number and track name / label?  
N / A
- q) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.15									1.15ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	282									282
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation ...Outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper growing on inaccessible crags.

### 6. Other threats: 40% of bushes showing some rusted foliage.

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	present
Comments: 40% of bushes showing some rusted foliage.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3218-01A	NY32353 18204	70 degrees		
Jun-NY3218-01B	NY32273 18199	300 degrees		Showing deep gill habitat of this stand.
Jun-NY3218-01C	NY32273 18199	50 degrees		Numerous bushes with rusted foliage.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Holly, ash, rowan and birch present, with wood anemone present in the ground flora, which also included *Alchemilla alpina*, *Alchemilla spp*, saxifrage spp. primroses, *Sedum spp* and butterwort.

Meadow pipit and willow warbler seen.

The large number of juniper with rusted foliage in this stand suggests that it may be infected with *Phytophthora austrocedrae*, though this has yet to be confirmed (MD – Jan 2013).



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: White Craggs	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3218-02	Survey date: 12/03/2012
Recorder name (s): Ruth Ansell-Davies and Annette Watt	Cent. grid ref: NY 3250 1841
Valley / area: Thirlmere	Altitude: 410m – 480m
Aspect: 270 degrees.	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map?  
N / A
- r) GPS number and track name / label?  
N / A
- s) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	9.55									9.55ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	370									
Method	VP									
Confidence	M									

### 4. Dominant Vegetation ...Outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Most juniper on inaccessible crags

### 6. Other threats: None

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	Present
Comments: Not closely accessed so accurate assessment not possible.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3218-02A				
Jun-NY3218-02B				
Jun-NY3218-02C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

UU have proposals to restore area through planting juniper in enclosures. Yew and Holly also present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Stanah Gill	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3218-03	Survey date: 12/03/2012
Recorder name (s): Ruth Ansell-davies and Annette Watt	Cent. grid ref: NY3256 1892
Valley / area: Thirlmere	Altitude: 320m – 480m
Aspect: 210 degrees	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
N / A
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	2.15									2.15ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	1330									1330
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Not assessed

### 6. Other threats: None

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	present	present	present
Comments: Not accessed so proportions in each age class not assessed.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3218-03A	NY32425 18915	60 degrees		
Jun-NY3218-03B	NY32480 18852	80 degrees		
Jun-NY3218-03C	NY32480 18852	40 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Scattered holly, ash, rowan and birch present. Also saw kestrel, raven and buzzard. The survey was completed from the other side of the gill, so some details were not assessed. The (MAPINFO) boundary was drawn using aerial photography – hence the poor confidence rating.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Combe Crag	Equiv. L. Ward site (s): Birkside Crag
Site Ref. code: Jun-NY3313-01	Survey date: 20/08/2013
Recorder name (s): M. Douglas	Cent. grid ref: 3346 1355
Valley / area: Thirlmere	Altitude: 530m – 630m
Aspect: 315 degrees	Ownership:

### 2. Stand area:

- k) Have you changed the boundaries of the stand on the survey map?  
N / A
- v) GPS number and track name / label?  
N / A
- w) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.72									1.72 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A									<b>Total</b>
Count	131									131
Method	VP									VP
Confidence	L									L

### 4. Dominant Vegetation ...dry heath.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Almost all bushes inaccessible to livestock. Slopes around the crags are generally heavily grazed by sheep.

### 6. Other threats: None

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Comments: Not accessed closely					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3313-01A	NY33349 13516	78 degrees		Taken from large boulder to the west of the crags.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Scattered bushes growing amongst dense DSH with tall herb ledges. Eared-willow (possible male) at NY 33416 13545.

Tall herb ledges with devil's bit scabious, wood sage, wood geranium, meadowsweet, *Lathyrus linifolius*, golden rod, *Alchemilla alpina*, mountain sorrel, roseroot and cowberry.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Stang End	Equiv. L. Ward site (s): Stang End
Site Code: Jun-NY3517-01	
Recorder name (s): Mike Douglas	Survey date: 2/8/11
	Cent. grid ref: NY 35850 17350
Valley / area: Glenridding, Ullswater	Altitude: 350 – 590m.
Aspect: SE	Ownership:

### 2. Stand area:

- l) Have you changed the boundaries of the stand on the survey map?  
Yes – stand only partially mapped / counted by L. Ward
- x) GPS number and track name / label?  
N / A
- y) Area of sub stands and total area?

Sub stand	A							Total
Area	21ha							21ha

### 3. Plant numbers and Juniper sub-species?

*Ssp communis*

Sub stand	A							Total
Count	5638							5638
Method	VP photo							VP photo
Confidence	M							M

### 4. Dominant vegetation and summary of other vegetation types within and immediately around the stand: Acid grassland

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Signs of heavy browsing on juniper in the past, and this sign of historically higher stocking densities is backed up by high density of *Nardus stricta* and *Juncus squarrosus*. In areas where this is the case the sward is now tall (> 10 – 15cm) though, and *J. squarrosus* is being out-competed by neighbouring vegetation. Alongside the recovery of dwarf shrub heath (particularly around the NE of the stand) and the presence of hundreds of juniper seedlings, this suggests a reduction in stocking densities in recent years. Grazing pressure does seem to be greater to the

SW of Rowten Beck, with shorter cropped grassland and less DSH. Many junipers here show severe browsing and bark stripping damage (not recent), but there are also many seedlings along the upper boundary of the stand.

**6. Other land management affecting juniper?** None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
>10%	10%		>70%	present	present
Comments: Estimated 700 seedlings around the stand after extrapolating up from the numbers seen around the boundary.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Stang End File, 007	NY 35550 17276	83°		Photo of dense, central portion of stand, taken from upper stand boundary at Rowten Beck, looking towards YH.
Stang End File, 012	NY 35576 16460	10°		Whole stand photo from across valley.
Stang End File, 011	NY 35576 16460	26°		Photo of dense portion of stand to NE of Rowten Beck

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The L. Ward survey counted only to the east of easting 36 (700 trees).

This is a mature stand with many standard / associated trees including Scot's pine, larch, ash, rowan, holly, sycamore and a stand of 15 aspen at NY 36207 17607. Birds within and around the stand included chaffinch, willow warbler, siskin and spotted flycatcher. Kestrel and buzzard were seen around the stand. Small heath and dark green fritillary butterflies were present.

Difference in grazing pressure around the stand and although juniper seedlings are coming through everywhere, some have been lightly browsed. Fifteen young and seedling juniper on raised rocky ground adjacent to Glenridding Beck had all being browsed, indicating that although sheep stocking density is allowing juniper regeneration at present, numbers may be at a maximum level for continued restoration of the stand.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blea Cove	Equiv. L. Ward site (s): Blea Cove and Glenridding Moorside
Site Ref. Code: Jun-NY3616-01	Survey date: 22 and 31/08/2011. Re-visited 22/05/2013 – M.D. and O.F.
Recorder name (s): J. and K. Oglesby, H. Simpson	Cent. grid ref: NY367 166
Valley / area: Ullswater	Altitude: 280 – 680m
Aspect: various	Ownership:

### 2. Stand area:

m) Have you changed the boundaries of the stand on the survey map?

Yes

z) GPS number and track name / label?

N / A

aa) Area of sub stands and total area?

Sub stand	A	B								Total
Area										37.31ha
Confidence										4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm...***

Sub stand	A	B								Total
Count	830	4765								5595
Method	VP	VP								VP
Confidence	M	M								M

### 4. Dominant Vegetation ...acid grassland.....

#### Other vegetation types present:

acid grassland	<u>wet grassland / rushes</u>
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

22/05/2013: Minority of junipers were lightly browsed, although there was one case of recent bark stripping by sheep. Some *Juncus squarrosus* was lightly to moderately browsed and there was some *Nardus* fragments scattered around on much of the grassland. Nevertheless, *J. squarrosus* rosettes were being encroached upon slightly by surrounding vegetation, suggesting a decline in grazing impacts in recent years.

**6. Other threats:****7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
10%	20%	10%	60%	present	present
Comments: Age classes re-assessed 22/05/2013. See comments.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3616-01A	NY36640 17527	180 degrees		Overview of Moorside sub-stand
Jun-NY3616-01B	NY36840 16500	300 degrees		Overview of Blea Cove
Jun-NY3616-01C	38010 16950	250 degrees		Overview from across the valley

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub-stand A refers to L. Wards' Glenridding Moorside Site and sub-stand B to the Birkhouse Moor site.

22/05/2013, M. Douglas and O. Fulton:

Few standard trees amongst juniper with very scattered rowan, birch, larch and willow spp.

Found signs of moderate winter grazing but this doesn't seem to be affecting juniper regeneration as we estimated more than 1000 young bushes and more than 500 seedlings were present. A 70m transect heading straight up a slight depression of thin soil and scree, to NY 3650216790, revealed 57 young trees and 25 seedlings. This concentration of young bushes was exceeded further upslope and this situation continued around to the east, with young and mature juniper dominating beneath Nab Craggs and The Nab. Two outlying seedlings (one year old) were found at NY 36445 16184.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Dove Crag	Equiv. L. Ward site (s): Dove Crag
Site Ref. Code: Jun-NY3710-01	Survey date: 27/04/2011
Recorder name (s): M. Douglas	Cent. grid ref: 37670 11000
Valley / area: Dovedale	Altitude: 480m – 680m
Aspect: 80 degrees	Ownership:

**2. Stand area:**

n) Have you changed the boundaries of the stand on the survey map?

Yes

bb)GPS number and track name / label?

N / A

cc) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	5.84									5.84
Confidence	3									3

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	130									130
Method	VP									VP
Confidence	L									L

**4. Dominant Vegetation ...dry heath.....**

**Other habitats / vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| dry heath             | wet heath / mire          |
| Limestone grassland   | Bracken                   |
| Scree                 | <u>Outcrop / cliff</u>    |
| Limestone scree       | Limestone outcrop / cliff |
| Woodland              |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Most juniper growing amongst well grown heather and steep slopes + high altitude perhaps limiting grazing pressure.

**6. Other threats: None**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
?	present	present	present	present	Present
Comments: Difficult to access so not closely inspected.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Occasional rowan. Singing meadow pipit and wheatear + nesting raven.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Black Crag	Equiv. L. Ward site (s): Black Crag
Site Ref. Code: Jun-NY3711-01	Survey date: 27/04/2011
Recorder name (s): M. Douglas	Cent. grid ref: NY37830 511520
Valley / area: Dovedale	Altitude: 480m – 580m
Aspect: 100 degrees	Ownership:

**2. Stand area:**

o) Have you changed the boundaries of the stand on the survey map?

Yes

dd)GPS number and track name / label?

N A

ee)Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.21									3.21ha
Confidence	3									3

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	502									502
Method	VP									VP
Confidence	M									M

**4. Dominant Vegetation** Dry heath.....

**Other habitats / vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| dry heath             | wet heath / mire          |
| Limestone grassland   | Bracken                   |
| Scree                 | <u>Outcrop / cliff</u>    |
| Limestone scree       | Limestone outcrop / cliff |
| Woodland              |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Most junipers on inaccessible crags

**6. Other threats:**

None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	present	present	present	present	present
Comments: Impossible to access and assess in detail					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3711-01A				Whole stand from Hartsop above How

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Wet flushes at base of crags with *Lathyrus linifolius*, *Thalictrum minus*, wood cranesbill, devil's bit scabious, roseroot and wood anemone.

Pair of ring ouzel alarming at NY 378 114.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Deepdale North	Equiv. L. Ward site (s): Latterhaw Crag
Site Ref. Code: Jun-NY3813-01	Survey date: 08/11/2011
Recorder name (s):	Cent. grid ref: NY38820 13290
Valley / area: Ullswater	Altitude: 270 – 350m
Aspect: 110 degrees	Ownership:

### 2. Stand area:

p) Have you changed the boundaries of the stand on the survey map?

Yes

ff) GPS number and track name / label?

gg) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.25									1.25ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A									<b>Total</b>
Count	254									254
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation/ habitat: Acid grass / bracken.....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Occasional juniper browsing. Heavy browsing on adjacent holly.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
4%	3%	45%	45%	present	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3813-01A	NY395 134	170 degrees		Overview of stand
Jun-NY3813-01B	NY38943 13398	80 degrees		East end of stand
Jun-NY3813-01C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Hawthorn, birch, rowan and holly present. Recorded stonechat, kestrel, raven and mistle thrush.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Deepdale North	Equiv. L. Ward site (s): Latterhaw Crag
Site Ref. Code: Jun-NY3813-01	Survey date: 08/11/2011
Recorder name (s):	Cent. grid ref: NY38820 13290
Valley / area: Ullswater	Altitude: 270 – 350m
Aspect: 110 degrees	Ownership:

### 2. Stand area:

q) Have you changed the boundaries of the stand on the survey map?

Yes

hh)GPS number and track name / label?

ii) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.25									1.25ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A									<b>Total</b>
Count	254									254
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation/ habitat: Acid grass / bracken.....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Occasional juniper browsing. Heavy browsing on adjacent holly.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
4%	3%	45%	45%	present	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3813-01A	NY395 134	170 degrees		Overview of stand
Jun-NY3813-01B	NY38943 13398	80 degrees		East end of stand
Jun-NY3813-01C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Hawthorn, birch, rowan and holly present. Recorded stonechat, kestrel, raven and mistle thrush.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Black Crag, Glenamara	Equiv. L. Ward site (s): None
Site Code: Jun-NY3814-01	Survey date: 16/10/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY38550 14870
Valley / area: Ullswater	Altitude: 380 – 550m
Aspect: 85 degrees	Ownership: ?

### 2. Stand area:

r) Have you changed the boundaries of the stand on the survey map?

N / A

jj) GPS number and track name / label?

kk) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	7.81									7.81
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp... comm.....

Sub stand	A									<b>Total</b>
Count	216									216
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Few juniper accessed but those that were had been browsed, one recently. 1 seedling was found but this had been browsed back hard. *Alchemilla alpina* and *Deschampsia cespitosa* were grazed.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3814-01A	NY 38923 14839	250 degrees		Whole stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Lots of birch and rowan on crags, with some holly, hazel, willow (goat and grey), ash and occasional oak. Small aspen clone present with 6 stems at NY 38673 14805.

**Restoration:**

Could use two fence lines between existing wall downslope and steep crags above, to enclose an area below the crags for natural regeneration of juniper and other trees, as well as tall herb and heath vegetation. One upslope from NY 3869 1479 and another up from NY 3873 1462.

This would enclose around 1.6 ha of fell, acting as a demonstration site on the effects of sheep grazing.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Harrison Crag	Equiv. L. Ward site (s): Elmhow Crag
Site Ref. code: Jun-NY3815-01	Survey date: 31/05/2013
Recorder name (s): Janet Ashton	Cent. grid ref: NY3805 1508
Valley / area: Ullswater	Altitude: 330m – 470m
Aspect: 305 degrees	Ownership: ?

### 2. Stand area:

s) Have you changed the boundaries of the stand on the survey map?

Yes

ll) GPS number and track name / label?

N / A

mm) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	7.20									7.20ha
Confidence	2									2

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A									<b>Total</b>
Count	227									227
Method	VP									VP
Confidence	L									L

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Heavily browsed hawthorn, fresh sheep droppings.

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	>10%	80%	>5%	X	present
Comments: Not all accessed closely. Young plants and seedlings would have been easy to miss.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3815-01A	NY38178 15181	0 degrees		Looking over Ullswater
Jun-NY3815-01B	NY38178 15181	115 degrees		Looking up the crag.
Jun-NY3815-01C	NY38178 15181			Seedling or young tree in sward.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Stated count could be a large underestimate given the difficulties of assessing this stand. Bird cherry, rowan, holly, larch, ash, birch and hawthorn were present. Browsing appears to be light, being difficult to find on the juniper which were accessed.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Woodside, Dovedale	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY3912-01	Survey date: 30/11/2011
Recorder name (s): MD	Cent. grid ref: NY 39570 12350
Valley / area: Ullswater	Altitude: 350 – 430 m
Aspect:120	Ownership:

### 2. Stand area:

t) Have you changed the boundaries of the stand on the survey map?

N A

nn)GPS number and track name / label?

oo)Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	2.25									2.25 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>248</b>									<b>248</b>
Method	<b>Exact</b>									<b>Exact</b>
Confidence	<b>H</b>									<b>H</b>

### 4. Dominant Vegetation ...Bracken.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Juniper very heavily browsed, bark stripped and damaged by red deer. Where present amongst grasses, *Calluna* and *Vaccinium myrtillus* moderately to heavily browsed with some intact long shoots and flowering in *Calluna* at present but cushion growth form suggesting winter browsing is a problem. Grasses dominated by *Nardus stricta* at southern end.

**6. Other threats:** Taller trees present up to 420 m altitude (inc sycamore) but these unlikely to be a problem due to heavy impacts from red deer.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
none	present	present	>95%	present	>5%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Deer proof wall and wall-top fence unlikely to be effective due to open access for deer at the SW end of the site. Although it would be expensive to rectify this, the outlay would protect a relatively large area from red deer and make juniper planting possible over more than 20 ha of fell side. Planted juniper would complement the existing woodland on the slope and would help link juniper stands in Dovedale and Deepdale. Two red deer were recorded and a number of Swaledale sheep grazed the fell side and woodland.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Deepdale South	Equiv. L. Ward site (s): Cockley How
Site Ref. Code: Jun-NY3912-02	Survey date: 18/11/2011
Recorder name (s): R. Ansell-Davies, A. Watt	Cent. grid ref: NY39410 12830
Valley / area: Ulswater	Altitude: 330 – 450m
Aspect: 315 degrees	Ownership:

### 2. Stand area:

u) Have you changed the boundaries of the stand on the survey map?

Yes

pp)GPS number and track name / label?

qq)Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	6.54									6.54ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A									<b>Total</b>
Count	2470									2470
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation/ habitat ...Acid grassland.....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Some browsing and flaying by red deer. This years growth untouched at present.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	33%	33%	33%	present	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3912-02A				Top half of stand
Jun-NY3912-02B				Overview of valley
Jun-NY3912-02C				Deer damage

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Rowan, ash, holly and hawthorn present. Sheep have been off-wintered for 3-4 years. Occasional visits by red deer.

Restoration:

This stand appears to be healthy at present, and continued off-wintering of sheep should result in successful juniper regeneration. Red deer populations should be monitored though, as reductions in sheep numbers may result in red deer using the area more, with associated increases in browsing and bark stripping of juniper.

Photos:

T:\Images\Projects\Wider Countryside\Juniper project\Ullswater juniper\Deepdale South. 012, 016, 017



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Arnison Crag	Equiv. L. Ward site (s): Norman Bank
Site Ref. Code: Jun-NY3914-02	Survey date: 24/10/2011
Recorder name (s): R. Ansell-Davies, A. Watt	Cent. grid ref: NY39520 14920
Valley / area: Ullswater	Altitude: 250 – 420m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

v) Have you changed the boundaries of the stand on the survey map?

Yes

rr) GPS number and track name / label?

ss) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	4.95									4.95ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A	B								<b>Total</b>
Count	2500	20								2520
Method	VP	VP								VP
Confidence	M	H								M

### 4. Dominant Vegetation/ habitat ...Bracken.....

#### Other vegetation / habitats present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Juniper not browsed and many seedlings present. DSH short cropped though.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
10%	20%	40%	30%	present	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3914-02A	From Deepdale Bridge	320 degrees		Stand overview
Jun-NY3914-02B				
Jun-NY3914-02C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Outlier to the west (sub site B) with 20 trees. Raven, kestrel stonechat and pied wagtail present.

Healthy stand with many j. seedlings, holly, hawthorn, yew, birch and ash.

Restoration:

This is a healthy juniper stand with a good mixture of age classes, many seedlings, a good mixture and number of standard trees, and no signs of browsing at present.

Sheep stocking densities / grazing regimes seem to be allowing regeneration, and the main threat to the stand may now be roaming red deer. These should be monitored and actively managed if they start to affect the juniper stand.

Photos:

T:\Images\Projects\Wider Countryside\Juniper project\Ullswater juniper\Arnison Crag. 003 and 062



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Birk Fell	Equiv. L. Ward site (s): Place Fell Low, Birk, Silver, Bleawick and South
Site Ref. Code: Jun-NY3918-01	Survey date: 14/10/11 and 2/12/11
Recorder name (s): Mike Douglas, Dave Greaves	Cent. grid ref: NY39890 18240
Valley / area: Ullswater	Altitude: 150 – 480m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

w) Have you changed the boundaries of the stand on the survey map?

Yes

tt) GPS number and track name / label?

uu) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	113.9									113.9 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand										<b>Total</b>
Count										
Method										
Confidence										

### 4. Dominant Vegetation/ habitat ...Birch Woodland

#### Other vegetation / habitats present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

**North East Boundary:** All DSH browsed back hard, and all accessible juniper browsed back into woody material – some j. bark-stripped and thrashed by red deer. Seedlings present though and high numbers of young trees illustrating good regen 20 – 40 years ago. All of this regen now heavily browsed and suppressed.

**South End:** Less browsing of established trees but also far fewer seedlings and young. Signs suggest that sheep are dominant grazer at this end of the site.

**Birch Woodland:** Healthy juniper with few signs of browsing or other damage.

**6. Other threats:** Some juniper have grown leggy in competition for light with taller birch. Little shading out as yet but with continued natural regen of birch, which is good at present, this will become a problem in the future. Presence of large sycamore seed trees could also create problems for juniper.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: Many hundreds of young trees present and seedlings numerous at north end of site and around Silver Crag. Hundreds of diseased /dying trees in some locations. Reported to FERA May 2012.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3918-01A	n/a	n/a		Browsed and thrashed juniper showing substantial die back.
Jun-NY3918-01B	n/a	n/a		Photo taken from Silver Crag showing slopes of Birk Fell.
Jun-NY3918-01C	NY38746 18811	114 degrees		Taken from outlet of Glencoyne Beck looking across Ullswater. Overview of site.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Huge site with mostly healthy, dense juniper associated with a variety of habitats. To the north and west juniper provides an understorey to birch woodland, with few signs of shading out of juniper at present. The high altitude boundary to the east has juniper growing among dry heath with some areas of *Agrostis* / *Festuca* grassland and some lime rich flushes. To the south and west ground flora is predominantly acid grassland with some areas dominated by *Nardus stricta*. Impacts in this area are mostly from sheep but it appears that off-wintering is allowing natural regen in some areas such as Silver Crag. Impacts to the north and east are predominantly from red deer. Substantial regeneration here 20 – 40 years ago is now being heavily browsed and suppressed. Thousands of trees are affected, with some older trees bark-stripped and mature and young trees frayed / thrashed. Seedlings still present though and juniper seemingly targeted when it has grown above the surrounding vegetation. Juniper targeted before the winter period and seemingly in preference to Ericoids in some areas.

During the October visit, witnessed siskins and redpoll, tit flocks with long-tailed tit, blue tit, great tit and coal tit, and redwing and fieldfare overhead. Recorded 10 red deer during the October survey and 14 during the December survey. Associated trees – birch, rowan, ash, oak, holly, hawthorn, yew, willow, sycamore (large old tree at NY39879 18431) and aspen (clone of 40 stems at NY39625 18204).

**May 2012:** Areas of die off amongst trees showing *Phytophthora austrocedrae* symptoms – around NY39690 18280 and NY 39880 17650.

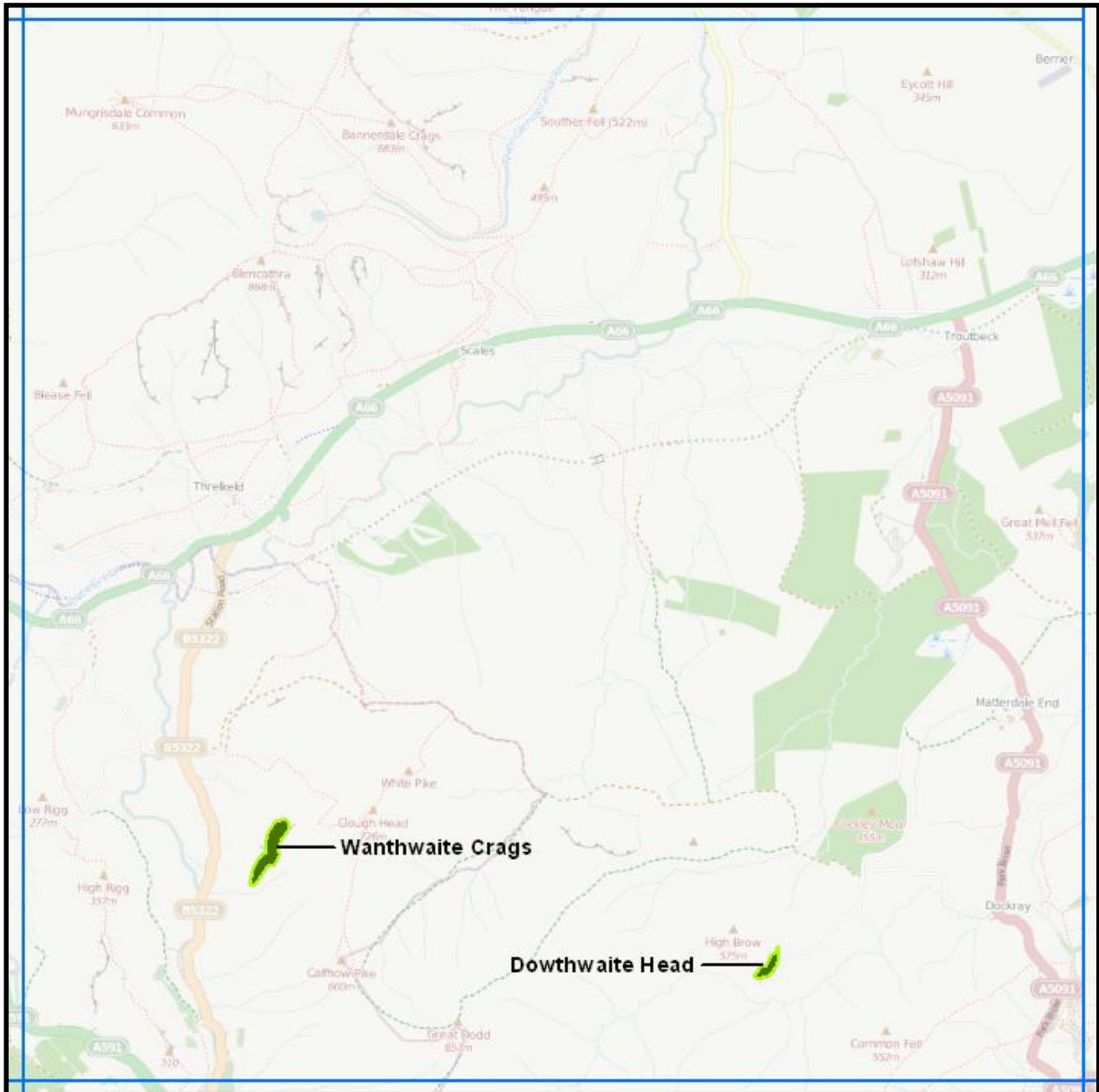
### **Bird survey - Spring 2012**

A complete point count survey was planned but then aborted this spring after 1 visit to each point, due to poor weather. During the three visits that were made the following list of breeding species (probable or possible) was made:

Wren	Robin
Chaffinch	Song thrush
Meadow pipit	Coal tit
Goldcrest	Blackbird
Ring ouzel	Willow warbler
Lesser redpoll	Siskin
Dunnock	Linnet

Birds that were present in the birch woodland at the bottom of the slope, but not necessarily associated with juniper, were spotted flycatcher, pied flycatcher and garden warbler.

# NY32



## Sites List:

- Jun-NY3222-01 Wanthwaite Crags
- Jun-NY3721-01 Dowthwaite Head



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Dowthwaite Head	Equiv. L. Ward site (s): None
Site Ref. code: Jun-NY3721-01	Survey date: 18/10/2013
Recorder name (s): A. Watt and R. Ansell-Davies	Cent. grid ref: NY3704 2106
Valley / area: Matterdale	Altitude: 430m – 520m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
N / A
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A	B	C	D						<b>Total</b>
Area										2.51ha
Confidence	4	4	4	4						4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A	B	C	D						<b>Total</b>
Count	500	80	10	20						610
Method	VP	VP	VP	VP						VP
Confidence	M	M	M	M						M

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsing on heathers and juniper extensive and easy to find at time of survey.  
Growth forms of heathers suggest long term high impacts.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	40%	45%	present	X
Comments: Seedlings beneath female bush all previously browsed.					

**Are fruit bearing trees present?** Yes / no

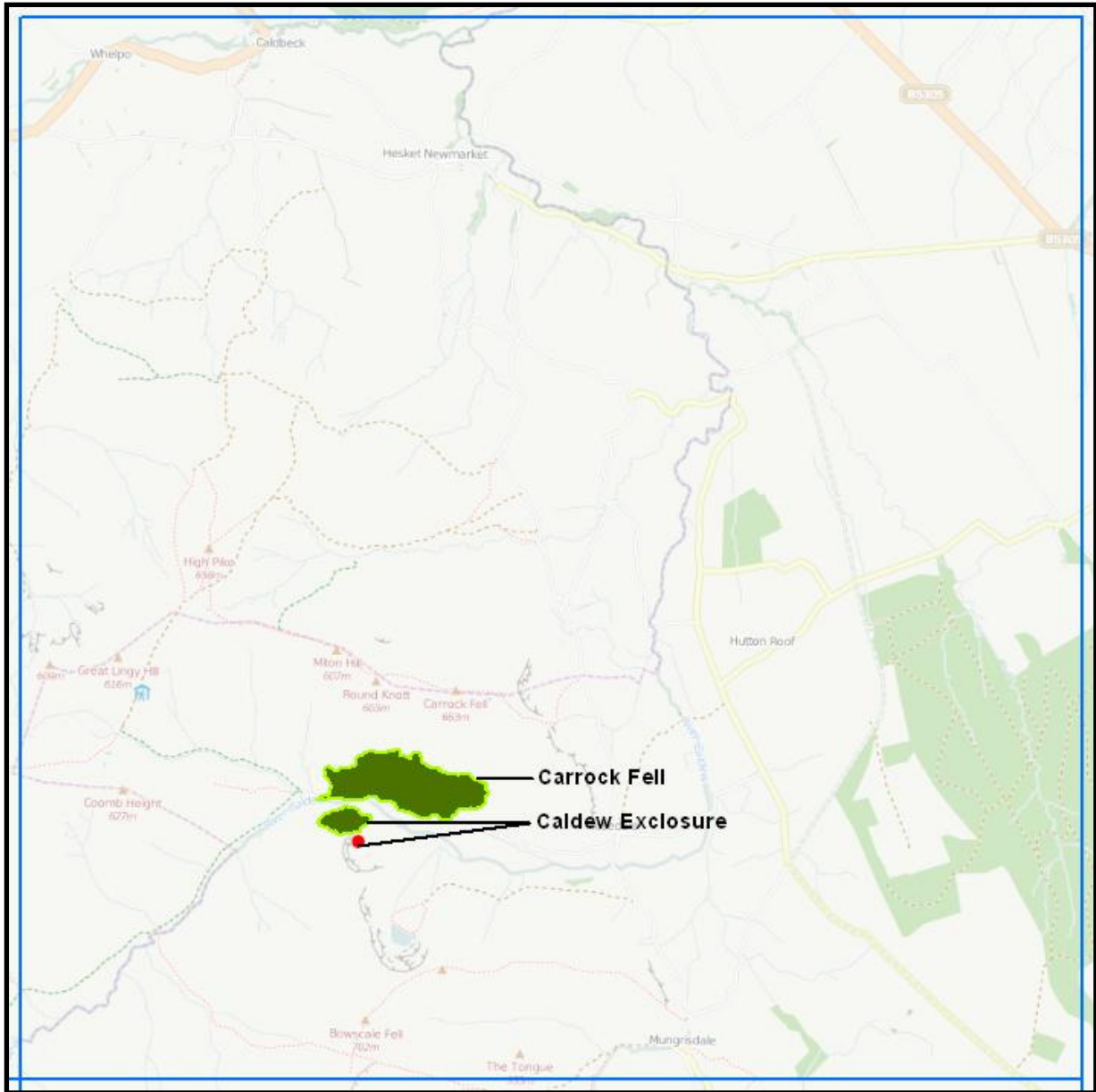
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Rowan, gorse and hawthorn present and Alpine lady's mantle abundant. Lots of waxcaps including *Hygrocybe cinerea*. Ravens present.

# NY33



## Sites List:

- |               |                  |
|---------------|------------------|
| Jun-NY3332-01 | Carrock Fell     |
| Jun-NY3332-02 | Caldew Exclosure |



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Carrock Fell	Equiv. L. Ward site (s): Carrock B, D and E
Site Ref. Code: Jun-NY3332-01	Survey date: 04/11/2011
Recorder name (s): M. Douglas, D. Greaves	Cent. grid ref: NY33580 32780
Valley / area: Caldbeck Commons	Altitude: 200 – 500m
Aspect: 180 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	60.7									60.7ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	7558									7558
Method	VP photo									VP photo
Confidence	L									L

### 4. Dominant Vegetation/ habitat ...dry heath.....

#### Other vegetation / habitats present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Difficult to find signs of juniper browsing. Some areas dominated by *Nardus stricta* and others by *Juncus squarrosus*. Heavy browsing of *Calluna* but not *Erica cinerea*.

**6. Other threats:** Two cotoneaster (upright growth form) at eastern end of stand

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	None seen	present
Comments: >80% of trees old. The remainder mostly young and seedling rather than mature trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3332-01A	NY33057 32353	15 degrees		Western end of stand
Jun-NY3332-01B	NY33057 32311	58 degrees		Eastern end of stand
Jun-NY3332-01C	NY33979 32894	270 degrees		Oblique photo of slope showing high altitude boundary

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Associated trees: holly, hawthorn, rowan, Scot's pine, birch gorse. Juniper grades into dry heath at high altitude boundary, gorse at SE end and acid grass and bracken elsewhere.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Caldew Exclosure	Equiv. L. Ward site (s): Carrock D (part of)
Site Ref. Code: Jun-NY3332-02	Survey date: 22/11/2011
Recorder name (s): Mike Douglas	Cent. grid ref: NY33040 32440
Valley / area: Caldbeck Commons	Altitude: 280 – 400m
Aspect: 359 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes (drawn boundary does not follow fenceline)
- d) GPS number and track name / label?
  
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	8.5									8.5ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	1024									1024
Method	VP photo									VP photo
Confidence	M									M

### 4. Dominant Vegetation/ habitat ...acid grassland.....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

No signs of browsing on juniper but sheep are gaining access to exclosure and possible red deer pellets were found.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	None seen	Present
Comments: 20% young (planted?), 30% mature and 50% old.					

**Are fruit bearing trees present?** Yes / no

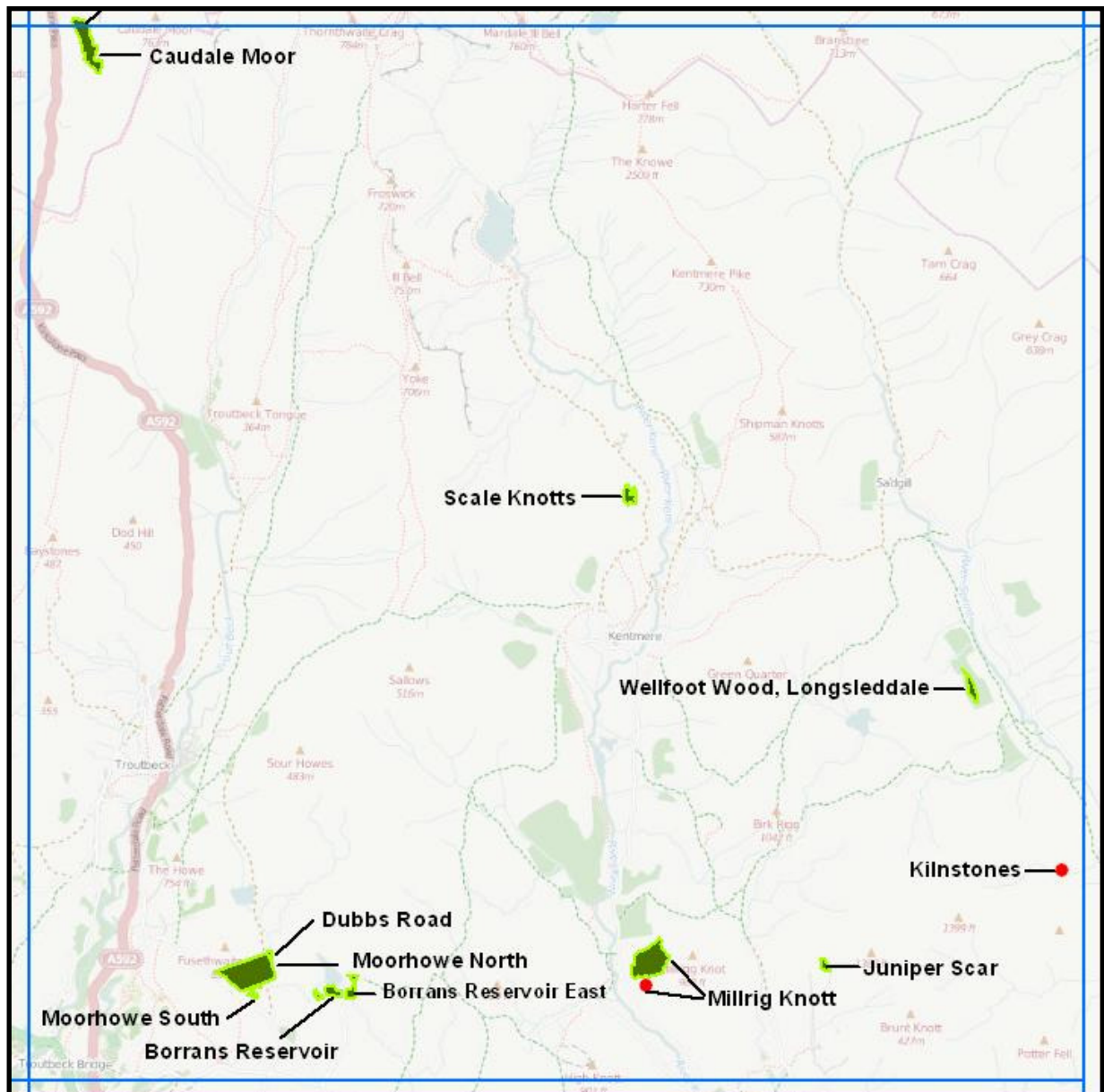
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3332-02A	NY32990 32929	169 degrees		Whole stand photo taken from across valley.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Appears to be at least 200 planted juniper which are now young trees. Most of these have been planted above the older trees, within the enclosure.

# NY40



## Sites List:

ExJ-NY4300-01	Borrans Reservoir East
Jun-NY4010-01	Caudale Moor
Jun-NY4200-01	Borrans Reservoir
Jun-NY4200-02	Moorhowe South
Jun-NY4201-01	Dubbs Road
Jun-NY4201-02	Moorhowe North
Jun-NY4501-01	Millrig Knott
Jun-NY4505-01	Scale Knotts
Jun-NY4701-01	Juniper Scar
Jun-NY4803-01	Wellfoot Wood, Longsleddale
Jun-NY4920-01	Kilnstones



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Borran's Reservoir	Equiv. L. Ward site (s): High Borrans SW
Site Ref. Code: Jun-NY4200-01	Survey date: 01/03/2012
Recorder name (s): M. Douglas, J. Ashton	Cent. grid ref: NY 428 008
Valley / area: High Borrans	Altitude: 200m
Aspect: None	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N/A
- c) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?                      Ssp...comm**

Sub stand	A	B	C							Total
Count	96	115	113							324
Method	WT	WT	WT							WT
Confidence	H	H	H							H

**4. Dominant Vegetation ...Wet heath / mire.....**

**Other vegetation types present:**

- |                       |                               |
|-----------------------|-------------------------------|
| <u>acid grassland</u> | <u>wet grassland / rushes</u> |
| dry heath             | wet heath / mire              |
| Limestone grassland   | <u>Bracken</u>                |
| Scree                 | Outcrop / cliff               |
| Limestone scree       | Limestone outcrop / cliff     |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Within the fenced enclosure (used for pheasant shooting?) there is no livestock grazing and seemingly little pressure from deer. Immediately outside of this fencing, sheep grazing has created browse lines on many of the juniper, and sheep or deer have severely pruned some low growing juniper. The juniper over the boundary wall

to the south are healthier, with little evidence of browsing, but there is still no regeneration, and the abundance of *Nardus* suggests that the area is still heavily grazed.

**6. Other threats:**

The old junipers within the enclosure are in the process of being shaded out by taller trees including Scot's pine, larch, oak, birch, rowan and ash. There are also 1 each of yew and beech present. Seedlings are unlikely to complete with the ground flora, which is dominated by bracken and bramble.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		Present	> 90%	Present	> 5%
Comments: Four trees to the south of the boundary wall are showing signs of illness / infection, with browned foliage on one or more boughs.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub-stand A is within the enclosure and has 96 juniper, sub-stand B immediately outside the enclosure with 115 trees, and sub-stand C to the south of the boundary wall, with 113 trees.

This fragmented stand is unlikely to survive in the long term, due to continuously high browsing pressure from sheep and deer outside of the enclosure, and due to shading and competition with other species inside the enclosure.

Red deer droppings were seen to the south of the boundary wall, and a woodcock was disturbed from some juniper in the same area.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Moorhowe South	Equiv. L. Ward site (s): -
Site Ref. code: NY4200-02	Survey date: 12.05.2012
Recorder name (s): Janet Ashton	Cent. grid ref: NY422008
Valley / area: Troutbeck	Altitude: 200 – 210m
Aspect: Varied	Ownership: N.T. leased by Simon Ward

**2. Stand area:**

- b) Have you changed the boundaries of the stand on the survey map? Yes.  
None given
- d) GPS number and track name / label? Moorhowe
- e) Area of sub stands and total area? 0.4ha

Sub stand	A									<b>Total</b>
Area	0.4ha									
Confidence	5									

**3. Plant numbers and Juniper sub-species?**

**Ssp...** Communis

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>86</b>									
Method	<b>Count</b>									
Confidence	<b>High</b>									

**4. Dominant Vegetation .....Wet grassland**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | wet heath / mire          |
| Limestone grassland | Bracken                   |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

**Close cropped. Droppings, some Juniper close cropped. Small number of sheep present. Cattle due in around 20/05/2012**

**6. Other threats:** Dead and sick trees confirmed with *Phytophthora austrocedrae* in 2012.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			86%	1%	9%
Comments: A few trees show signs of animal damage at base. A few are close-cropped, but most are quite healthy.					

**Are fruit bearing trees present?** Yes Very few.

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Moorhowe 2 Damaged & dying trees	42078 00804	N 0deg	None	Within stand
Moorhowe 2 healthy trees	42192 00919	N 0deg	None	Dry part of stand in field

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This field is grazed pasture but not too heavily grazed. It is in better condition than the adjacent field previously surveyed. The healthiest Juniper are along the N boundary-wall and most are within a hollow in the field. There is a mix of dry acid grassland & rocky outcrops, with wet areas with rushes draining to a small stream.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Dubbs Road	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY4201-01	Survey date: 01/03/2012
Recorder name (s): M. Douglas, J, Ashton	Cent. grid ref: NY422 011
Valley / area: Troutbeck, Windermere	Altitude: 220 m
Aspect: 80 degrees	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
N / A
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	0.32									0.32 ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp comm.....

Sub stand	A									<b>Total</b>
Count	81									81
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation ...Bracken.....

#### Other vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

No signs of grazing or browsing within the enclosure but outside of this 17 juniper survive within rough pasture.

**6. Other threats:** Shading by tall trees including willow, ash, holly and rowan will be a problem in the future, and ground flora of bracken, bramble and even heather is overwhelming prostrate juniper at present.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			present		
Comments: All trees are old.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This may be a remnant of a more extensive stand, as there are a number of outlying juniper over the ridge towards Moorhowe Road.

The enclosure may have saved some of the juniper in the short term, but continued exclusion of livestock will result in the disappearance of this stand in the long term, due to strong competition from the ground flora and from tall trees.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Moorhowe North	Equiv. L. Ward site (s): -
Site Ref. code: NY4201-02	Survey date: 28.04.2012
Recorder name (s): Janet Ashton	Cent. grid ref: NY420010
Valley / area: Troutbeck	Altitude: 200 – 230m
Aspect: S.W	Ownership:

### 2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map? Yes.  
None give.
- h) GPS number and track name / label? No track made
- i) Area of sub stands and total area? Trees scattered throughout

Sub stand	A									<b>Total</b>
Area	Whole field									
Confidence	5									

### 3. Plant numbers and Juniper sub-species?

Ssp... ..

Sub stand	1										<b>Total</b>
Count	44										
Method	Count										
Confidence	High										

### 4. Dominant Vegetation : Wet grassland

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Low sward, poaching of wet ground. Juniper, Hawthorn & Holly broken and damaged up to height of 1 to 1.5 metres. Cattle droppings (Highland cattle graze here). Small number of sheep on day of survey.

**6. Other threats:** Dead and sick trees confirmed with *Phytophthora austrocedrae* in 2012.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			100%	4%	20%
Comments: Most trees have bare trunks, broken lower branches, foliage only at top.					

**Are fruit bearing trees present?** Yes / Very few

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Dying tree	4190900932	NNW 330deg	No zoom used	Wet gully in field. Trees look ill.
Typical view	4194001045	NNE 20deg	No zoom used	Dry area. Cattle damage.
Field view	4219200919	NW 300deg	No zoom used	From field boundary wall, showing scatter of trees

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This field is heavily grazed pasture. Wet hollows with Rushes & Sedges, acid grassland with a lot of bracken and drier rocky outcrops.

The SW facing 2/3 has scattered trees, Juniper, Hawthorn Holly and Elder. All show signs of cattle and sheep damage. The lower branches are broken and dead & there is bare soil at the base of many trees.

The NE-facing third has no Juniper & few other trees. A small portion in the NE corner is fenced off and has already been surveyed separately. I was told by the leaseholder that this was done by N.T. to allow regeneration of Heather.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Millrigg Knott	Equiv. L. Ward site (s): Millrigg Knott Nth and Sth
Site Ref. Code: Jun-NY4501-01	Survey date: July 2012
Recorder name (s): Tania Crockett and John Farmer	Cent. grid ref: NY 4588 0109
Valley / area: Kentmere	Altitude: 130m to 250m
Aspect: 270 degrees	Ownership

### 2. Stand area:

e) Have you changed the boundaries of the stand on the survey map?

Yes

j) GPS number and track name / label?

N / A

k) Area of sub stands and total area?

Sub stand	1	2								<b>Total</b>
Area	8.37									8.37
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2								<b>Total</b>
Count	160	8								168
Method	Wt	VP								Wt
Confidence	H	M								H

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other ...Roe deer.....

### Indicators of high grazing / browsing pressure?

No DSH. Some areas with tormentil / bedstraw.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	15%	75%	5%	5%
Comments: Many of the old trees were dying back. Lots of dead wood. Few berry bearing bushes.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Living, dead and dying junipers were evenly spread across the area. Scattering of other tree species: Ash, rowan, holly, sycamore (all old / mature). Occasional wet flushes with cotton grass, sundew and bog asphodel. Also ladies bedstraw, climbing corydalis, barren strawberry and small heath butterfly.

Lena Ward estimated that there were 300 junipers here in 1972, making this one of the few sites in the Lake District with a substantial, observable decline between the two surveys (most recent surveys find more junipers due to different counting techniques).



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Scale Knotts	Equiv. L. Ward site (s): Scale Knotts
Site Ref. Code: Jun-NY4505-01	Survey date: 20/06/2012
Recorder name (s): J. Farmer and T. Crockett	Cent. grid ref: NY45687 05536
Valley / area: Kentmere	Altitude: 270m – 300m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- l) GPS number and track name / label?  
N / A
- m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.61									1.61
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm*.....**

Sub stand	A									<b>Total</b>
Count	472									472
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation ...wet grassland.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Some, but difficult time of year to assess.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1%	5%	50%	40%	1%	1%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY4505-01A	NY45672 05587	South		From rocky outcrop
Jun-NY4505-01B	NY45672 05587	West		From rocky outcrop
Jun-NY4505-01C	NY45672 05587	Northwest		From rocky outcrop

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Few rowan and holly present but all old and in poor condition. Lots of small brown butterflies around (small heath??) and siskin present.

**Restoration:**

The age structure of this stand suggests that regeneration has been a problem here for at least thirty years, and the surrounding vegetation type suggests that this is likely to be a result of grazing pressure.

Continued grazing is essential for the survival of juniper at this site, with trampling creating regeneration niches for seeds, and summer grazing restricting the growth of competitors.

Winter grazing is likely to be a limiting factor for juniper regeneration though, with seedlings being browsed or uprooted when other foodstuff has been fully exploited or has lost its' nutritional value. The ideal grazing regime to allow natural regeneration and successful establishment of juniper is complete off wintering of livestock, with sheep not reintroduced to the site until April at the earliest. If this is not possible, partial off-wintering may work, but this will depend on the nature of the grazing area and the movements of the stock. Shepherding and careful placement of (or avoidance of) feed blocks, may help reduce grazing pressure around juniper in this scenario.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Longsleddale	Equiv. L. Ward site (s): Longsleddale
Site Ref. Code: Jun-NY4803-01	Survey date: 11/08/11
Recorder name (s): Mike Douglas, John Farmer	Cent. grid ref: NY 489 037
Valley / area: Longsleddale	Altitude: 280m – 300m
Aspect: Easterly	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
Yes
- n) GPS number and track name / label?  
N/A
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.5 ha									1.5 ha

### 3. Plant numbers and Juniper sub-species?

*Ssp communis*

Sub stand	A									<b>Total</b>
Count	285									285
Method	W.T.									W.T.
Confidence	H									H

### 4. Dominant vegetation and summary of other vegetation types within and immediately around the stand: Acid grassland

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

**Was a grazing impact assessment carried out?**    Yes / no

### Indicators of high grazing / browsing pressure?

There is some indication of reduced sheep grazing as previously browsed juniper now has good long-shoot growth and 4 young trees are surviving well with no signs of recent browsing. The grass sward is currently quite long (> 15cm), reinforcing other

signs of reduced sheep grazing recently. As yet there are still no juniper seedlings though, and an assessment after a winter of grazing / browsing would be useful to judge sheep impacts on juniper.

**6. Other land management affecting juniper?**

The juniper stand lies within the same top-fenced wall as the adjacent plantation, and will therefore receive less frequent browsing by red deer than would otherwise be the case.

Shading may be a problem lower on the slope as a variety of species

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
none	present	present	>90%	none	Present
Comments: 4 young trees seen.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Longsleddale file, August 2011, 036	NY 48854 03843	149°		Overview of stand looking down valley

**9. Comments (associated flora and fauna, survey / access difficulties?):**

A number of tree species grow amongst the juniper adjacent to the plantation, including birch, hawthorn and rowan. Bird species recorded included blackcap, siskin, redpoll and tree pipit. Red deer are present in the wider area (1 stag, 2 hinds and a calf were spotted), but access to the juniper is unlikely to be frequent due to the wall and wall top fencing around the plantation, which is currently maintained.

**Restoration:**

Grazing within the juniper stand looks to be at high enough levels to prevent seedlings coming through, so restoration work will require either further reduction in sheep numbers, off-wintering of sheep, or protection of planted trees using either fencing or tree protectors.

Problems associated with fencing include increased competition by other plant species with any planted juniper, a reduced grazing area, and if the enclosure is left in place over a long time period, there is likely to be issues with taller tree species colonising the area and shading out the juniper.

Tree protectors will get around these problems, although some weeding within the protectors will be necessary in the first couple of years after planting. Individual protectors will also allow more freedom in any planting plan, resulting in a plan that is more likely to fit in with the landscape. Weld mesh protectors of 1 meter diameter give good protection while allowing the growing tree to bush out and adapt to the wind. These may become prohibitively expensive when planting more than 50 trees, but are otherwise competitive with each tree, protector and associated stakes coming in at around £10.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Kilnstones	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY4920-01	Survey date: 26/10/2011
Recorder name (s): John Farmer	Cent. grid ref: SD498 200
Valley / area: Longsleddale	Altitude: 300 – 320m.
Aspect: NE	Ownership:

### 2. Stand area:

h) Have you changed the boundaries of the stand on the survey map?

N / A

p) GPS number and track name / label?

N / A

q) Area of sub stands and total area?

Sub stand	1									<b>Total</b>
Area	20									20
Confidence	1									1

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1									<b>Total</b>
Count	179									179
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...Dry heath.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

This year's growth untouched but grazing impacts higher in the past.

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
0	5	70	25		present
Comments:					

**Are fruit bearing trees present?** Yes / no

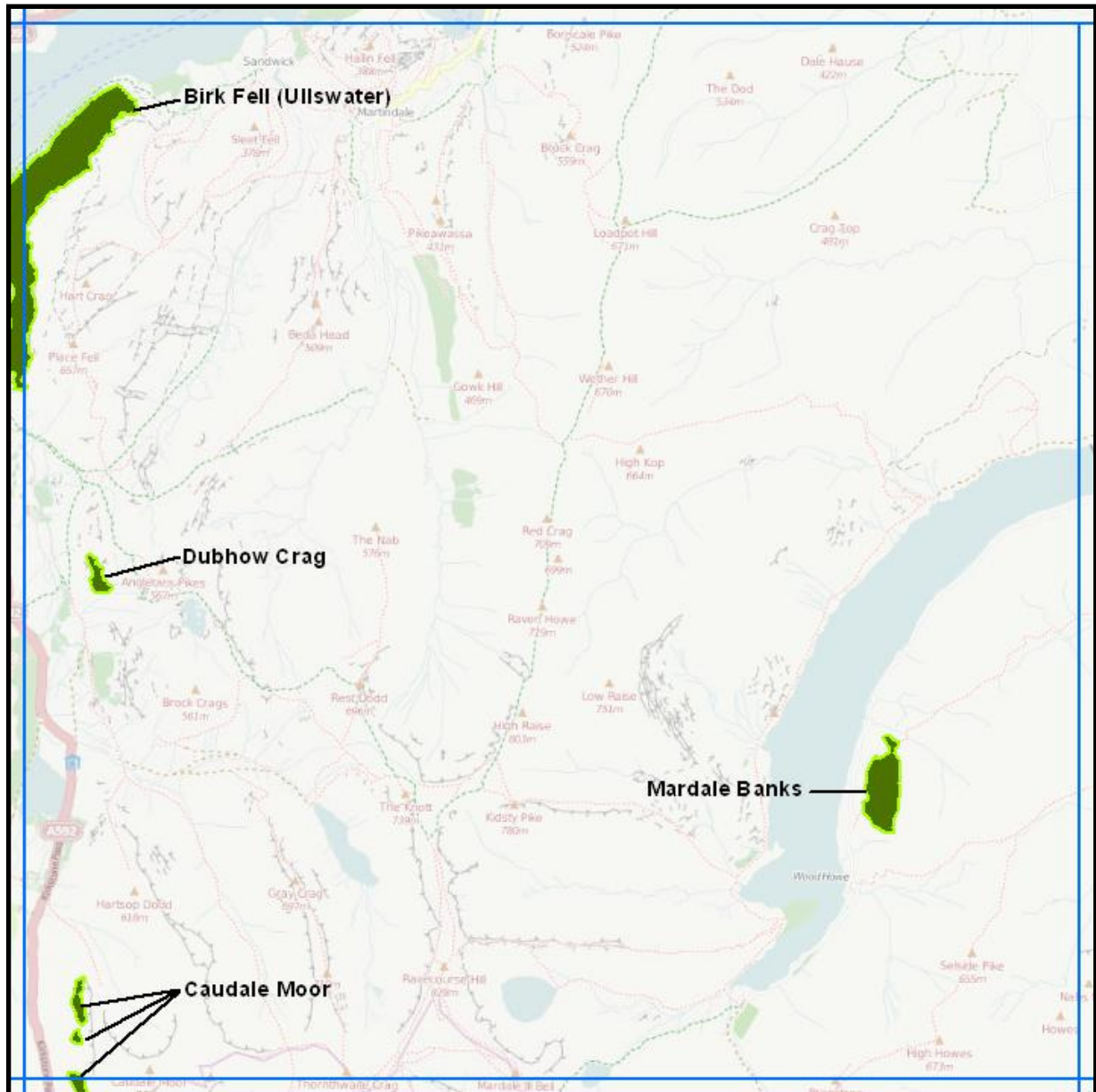
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Tracks made the stand relatively accessible. Most of the juniper were widely spread amongst the heather, above the SSSI woodland. The landowner is required to plant 70 more juniper as part of his HLS. There were a large number and variety of ferns around the area, some grassland and wet heath / mire but the dominant species was heather. Virtually no birds were seen after leaving the woodland below, but noticed a wide variety of insects.

# NY41



## Sites List:

Jun-NY3918-01	Birk Fell (Ullswater)
Jun-NY4010-01	Caudale Moor
Jun-NY4014-01	Dubhow Crag
Jun-NY4812-01	Mardale Banks



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Birk Fell	Equiv. L. Ward site (s): Place Fell Low, Birk, Silver, Bleawick and South
Site Ref. Code: Jun-NY3918-01	Survey date: 14/10/11 and 2/12/11
Recorder name (s): Mike Douglas, Dave Greaves	Cent. grid ref: NY39890 18240
Valley / area: Ullswater	Altitude: 150 – 480m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	113.9									113.9 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand										<b>Total</b>
Count										
Method										
Confidence										

### 4. Dominant Vegetation/ habitat ...Birch Woodland

#### Other vegetation / habitats present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

**North East Boundary:** All DSH browsed back hard, and all accessible juniper browsed back into woody material – some j. bark-stripped and thrashed by red deer.

Seedlings present though and high numbers of young trees illustrating good regen 20 – 40 years ago. All of this regen now heavily browsed and suppressed.

**South End:** Less browsing of established trees but also far fewer seedlings and young. Signs suggest that sheep are dominant grazer at this end of the site.

**Birch Woodland:** Healthy juniper with few signs of browsing or other damage.

**6. Other threats:** Some juniper have grown leggy in competition for light with taller birch. Little shading out as yet but with continued natural regen of birch, which is good at present, this will become a problem in the future. Presence of large sycamore seed trees could also create problems for juniper.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: Many hundreds of young trees present and seedlings numerous at north end of site and around Silver Crag. Hundreds of diseased /dying trees in some locations. Reported to FERA May 2012.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3918-01A	n/a	n/a		Browsed and thrashed juniper showing substantial die back.
Jun-NY3918-01B	n/a	n/a		Photo taken from Silver Crag showing slopes of Birk Fell.
Jun-NY3918-01C	NY38746 18811	114 degrees		Taken from outlet of Glencoyne Beck looking across Ullswater. Overview of site.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Huge site with mostly healthy, dense juniper associated with a variety of habitats. To the north and west juniper provides an understorey to birch woodland, with few signs of shading out of juniper at present. The high altitude boundary to the east has juniper growing among dry heath with some areas of *Agrostis* / *Festuca* grassland and some lime rich flushes. To the south and west ground flora is predominantly acid grassland with some areas dominated by *Nardus stricta*. Impacts in this area are mostly from sheep but it appears that off-wintering is allowing natural regen in some areas such as Silver Crag. Impacts to the north and east are predominantly from red deer.

Substantial regeneration here 20 – 40 years ago is now being heavily browsed and suppressed. Thousands of trees are affected, with some older trees bark-stripped and mature and young trees frayed / thrashed. Seedlings still present though and juniper seemingly targeted when it has grown above the surrounding vegetation. Juniper targeted before the winter period and seemingly in preference to Ericoids in some areas.

During the October visit, witnessed siskins and redpoll, tit flocks with long-tailed tit, blue tit, great tit and coal tit, and redwing and fieldfare overhead. Recorded 10 red deer during the October survey and 14 during the December survey.

Associated trees – birch, rowan, ash, oak, holly, hawthorn, yew, willow, sycamore (large old tree at NY39879 18431) and aspen (clone of 40 stems at NY39625 18204).

**May 2012:** Areas of die off amongst trees showing *Phytophthora austrocedrae* symptoms – around NY39690 18280 and NY 39880 17650.

### **Bird survey - Spring 2012**

A complete point count survey was planned but then aborted this spring after 1 visit to each point, due to poor weather. During the three visits that were made the following list of breeding species (probable or possible) was made:

Wren	Robin
Chaffinch	Song thrush
Meadow pipit	Coal tit
Goldcrest	Blackbird
Ring ouzel	Willow warbler
Lesser redpoll	Siskin
Dunnock	Linnet

Birds that were present in the birch woodland at the bottom of the slope, but not necessarily associated with juniper, were spotted flycatcher, pied flycatcher and garden warbler.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Dubhow Crag	Equiv. L. Ward site (s): Angle Tarn South
Site Ref. code: Jun-NY4014-01	Survey date: 11/09/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY4070 1473
Valley / area: Ullswater	Altitude: 250m – 380m
Aspect: 270 degrees	Ownership:

**2. Stand area:**

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	4.19									4.19ha
Confidence	4									4

**3. Plant numbers and Juniper sub-species?**

**Ssp...*J.c.comm* .....**

Sub stand	A									<b>Total</b>
Count	1724									1724
Method	VP									VP
Confidence	M									M

**4. Dominant Vegetation ...Acid grassland.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| <u>dry heath</u>    | wet heath / mire          |
| Limestone grassland | <u>Bracken</u>            |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

All juniper winter browsed, some heavily. Height, extent and depth of browsing suggests red deer are the main browsers. Numerous young bushes are all suppressed due to browsing. 19 red deer disturbed from juniper during survey.

**6. Other threats:** None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	10%	present	70%	X	present
Comments: 4 seedlings found, along with more than 100 young juniper around the boundary of the stand.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY4014-01A				
Jun-NY4014-01B				
Jun-NY4014-01C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Conditions at this stand are obviously very good for natural regeneration, but unfortunately, the chances of establishment under current grazing conditions are unlikely. Although abundant wool and sheep droppings at the time of the survey illustrate that sheep are present, the main browsers are red deer. All accessible juniper are browsed and seedlings and young bushes are suppressed.

19 red deer were disturbed from the juniper during the survey, a group which included 2 stags and 3 calves.

Ash, oak, holly, hawthorn and birch are present, along with a few rowan, larch and sycamore. One small cotoneaster (heavily browsed) was present at NY 40582 14913. One small patch of mountain everlasting had successfully flowered in a rock crack at NY 40746 14854.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Mardale Banks	Equiv. L. Ward site (s): Mardale Banks
Site Ref. code: Jun-NY4812-01	Survey date: 14/10/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY 4816 1277
Valley / area: Haweswater	Altitude: 280m – 430m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	21.94									21.94 ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

*Ssp...J.c.comm .....*

Sub stand	A									<b>Total</b>
Count	3450									3450
Method	Aerial photo									Aerial photo
Confidence	L									L

### 4. Dominant Habitat / Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

All accessible bushes showing some signs of winter browsing. One mature bush with red deer thrashing damage.

**6. Other threats:** *Phytophthora austrocedrae* may have been around for more than a decade at this stand and has affected hundreds of bushes.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	Present
Comments: Dominated by old trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

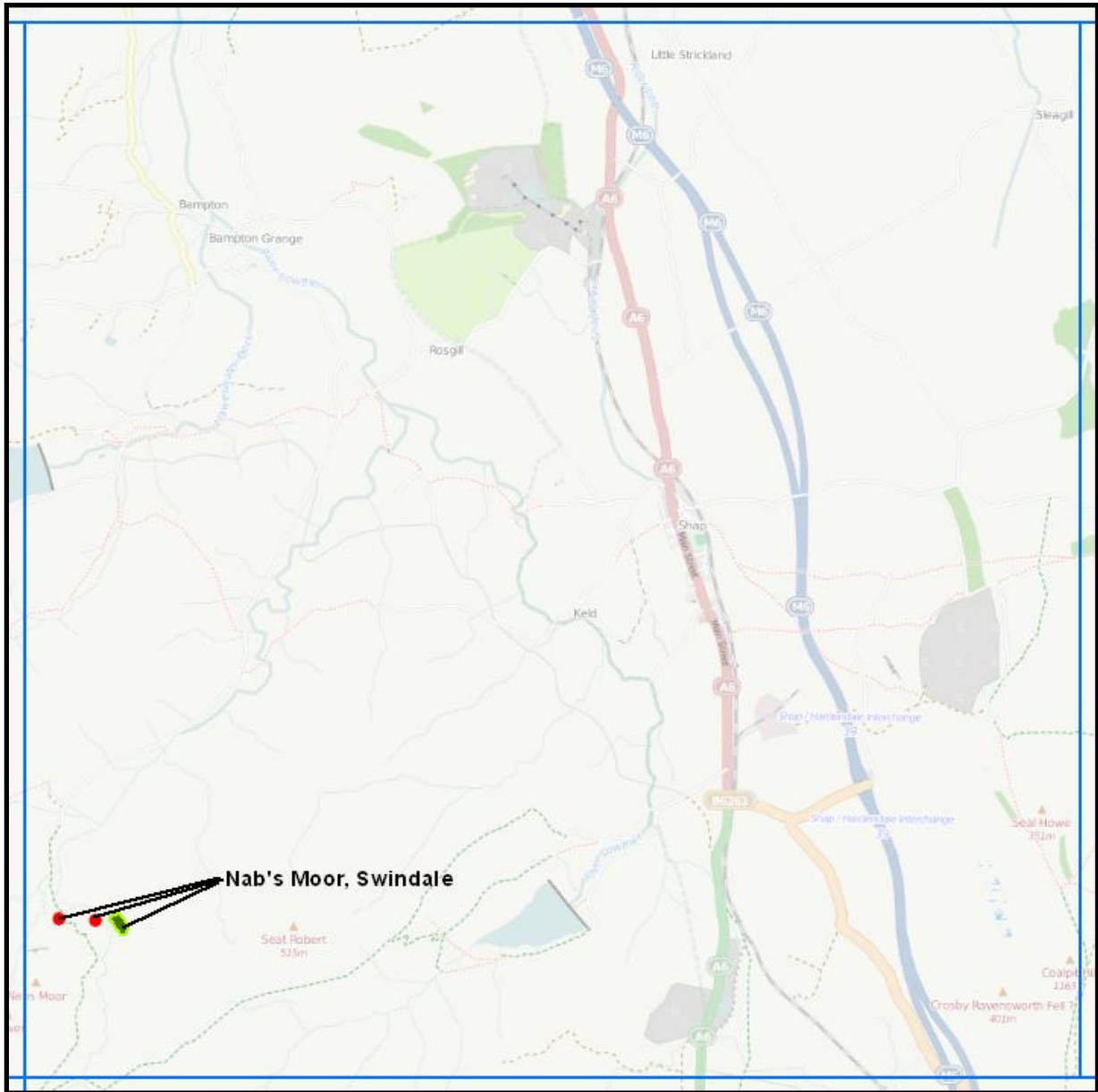
Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY4812-01A				Showing a southern portion of the stand, taken April 2011
Jun-NY4812-01B				Showing thrashing damage to mature juniper, Oct 2013.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Only a small part of this stand was surveyed (NW section) on the stated date and the rest of the boundary, and the population estimate was completed with the aid of aerial photography.

The stand appears to be dominated by old trees and continues to experience browsing by both sheep and red deer, which is probably preventing or limiting regeneration at present. Sheep stocking rates are set to decrease under RSPB management though, and the tens of planted juniper seen around NY4820 1307 appear to be doing well, so conditions could change at the site in coming years. It is not known how quickly *P. austrocedrae* is spreading to new bushes at the moment but the rate of spread has declined markedly since the large die off around 10 years ago (D. Shackleton, RSPB).

# NY51



## Sites List:

Jun-NY5011-01 Nab's Moor, Swindale



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Nabs Moor	Equiv. L. Ward site (s): Nabs Moor
Site Ref. Code: Jun-NY5011-01	Survey date: 15-08-2011
Recorder name (s): RAD AW	Cent. grid ref: NY5085 1152
Valley / area: Swindale	Altitude: 300 – 400m
Aspect: SW / NE	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? **YES**
- b) GPS number and track name / label? **CWT8**
- c) Area of sub stands and total area?

Sub stand	1	2	3							<b>Total</b>
Area	1.94ha									1.94Ha
Confidence	5									

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2	3							<b>Total</b>
Count	42	9	3							<b>55</b>
Method	Count	Vantage	Vantage							
Confidence	High	High	High							

### 4. Dominant Vegetation .....

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other Rabbits and roe

deer

#### Indicators of high grazing / browsing pressure?

No grazing impact assessment carried out. Occasional browsing – sheep & deer seen higher up.

### 6. Other threats:

Ten small, old bushes (no berries, all growing on rock) only, growing on N facing slope, S of river.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
x	x	20%	70%	x	10%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Description of fixed point
Jun-NY5011-01A			Area behind top wall looking towards beck.
Jun-NY5011-01A			Area behind top wall looking towards beck.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Northwest side of beck where L. Ward recorded juniper covered in thick bracken and gorse. Abundant birch, rowan and hawthorn may be shading juniper in gully.

# NY61



## Sites List:

Jun-NY6011-01 Crosby Ravensworth



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Crosby Ravensworth	Equiv. L. Ward site (s): Crosby Ravensworth
Site Ref. Code: Jun-NY6011-01	Survey date: 11/10/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY 60689 11297
Valley / area: Orton Fells	Altitude: 310m.
Aspect: Various	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?
- c) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	4									4
Method	WT									WT
Confidence	H									H

**4. Dominant Vegetation ...acid grassland.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| <u>dry heath</u>    | <u>wet heath / mire</u>   |
| Limestone grassland | Bracken                   |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other Rabbits.....

**Indicators of high grazing / browsing pressure?**

Some juniper shoots browsed down to woody material by sheep in past winters. Neighbouring heather showing signs of light to moderate winter browsing (grazing pressure seems to be higher around the junipers than elsewhere on the fell). Large

rabbit warren close by with patches of very short cropped vegetation around entrance holes.

**6. Other threats:** The Fell is managed for grouse shooting and has numerous burnt patches at present (though plenty of old heather too!). The existing juniper may have escaped this hazard due to its position amongst streams and wet flushes.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			present		
Comments: All stems old – probably much more than 100 years. One of the southern clump of junipers is female and has sparse berries, the seeds of which appear to be viable.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

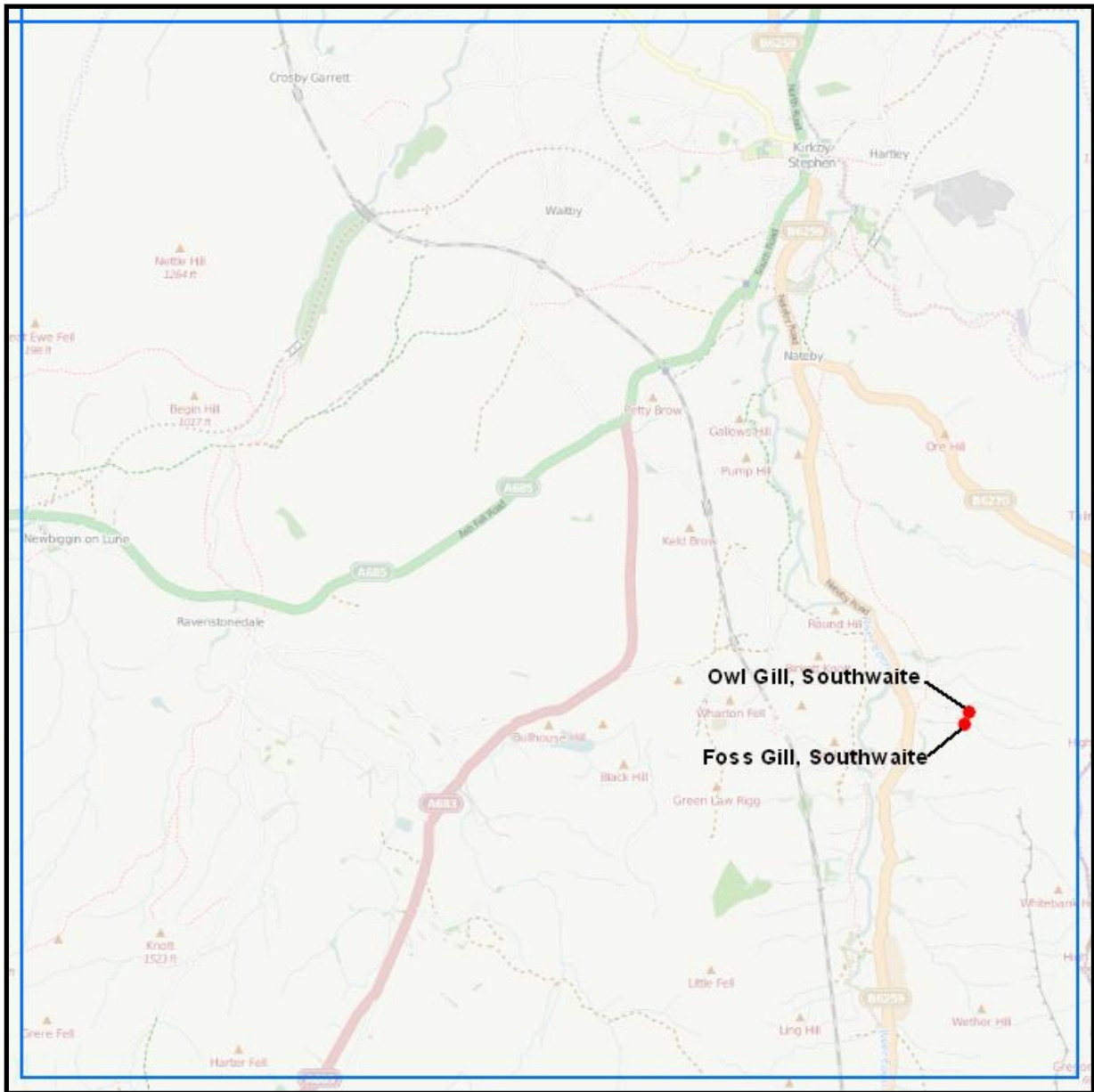
Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY6011-01A				Looking East to junipers
Jun-NY6011-01B				Northern individual
Jun-NY6011-01C				Overview of both juniper clumps, southern clump in the foreground.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The northern ‘clump’ consists of a single individual, while the southern clump has three, well-separated stems beneath the canopy.

Although berries were found with viable seeds, regeneration seems unlikely in the face of ever-present rabbits and sheep. Berries weren’t numerous and the reproductive capacity of this population is unlikely to improve as the bushes continue to age.

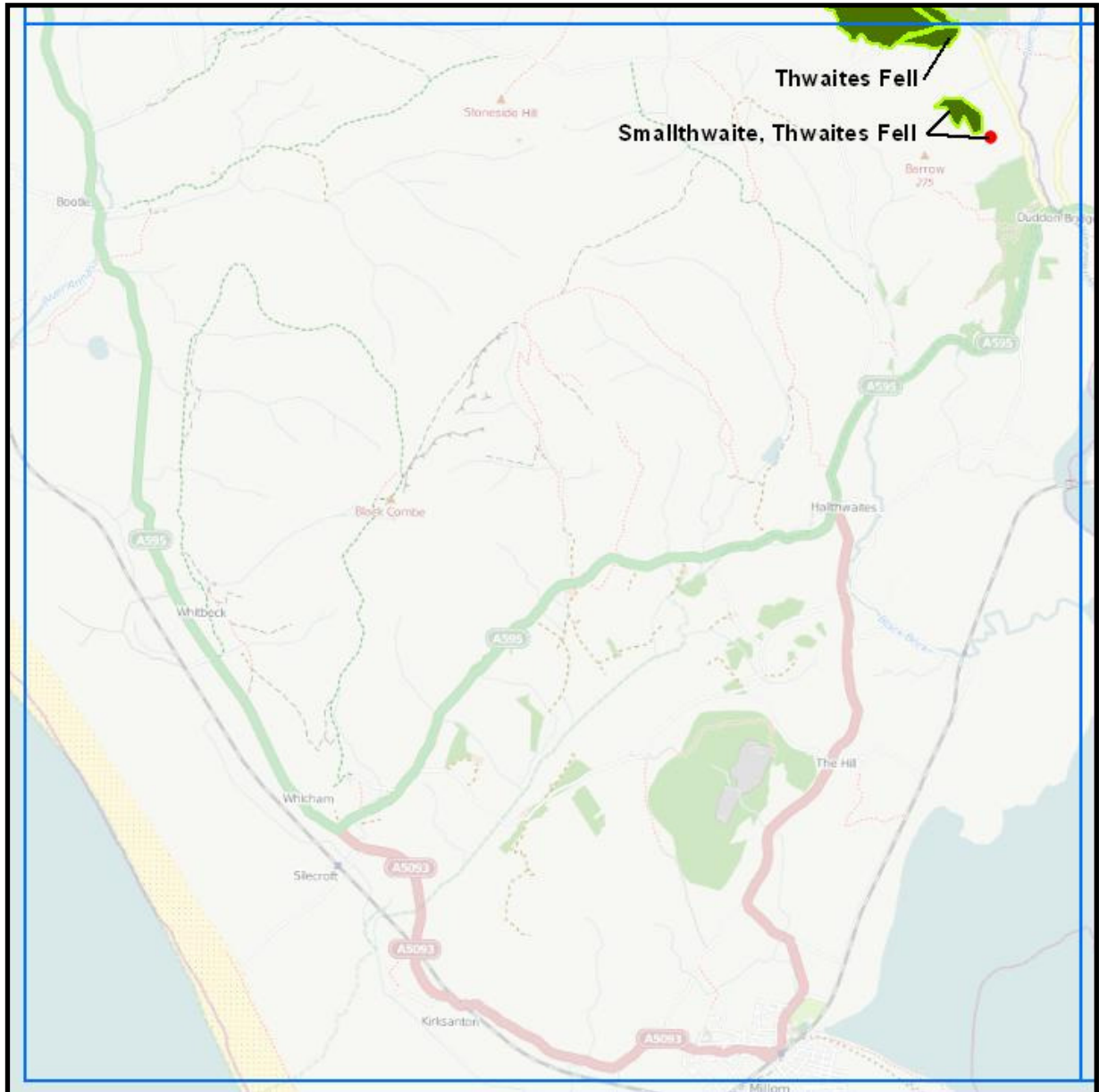
# NY70



## Sites List:

- |               |                       |
|---------------|-----------------------|
| Jun-NY7803-01 | Foss Gill, Southwaite |
| Jun-NY7803-02 | Owl Gill, Southwaite  |

# SD18



## Sites List:

- |               |                             |
|---------------|-----------------------------|
| Jun-SD1889-01 | Smallthwaite, Thwaites Fell |
| Jun-SD1889-02 | Thwaites Fell               |



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: <b>Smallthwaite, Thwaites Fell</b>	Equiv. L. Ward site (s):
<b>Site Ref. Code: Jun-SD1889-01</b>	Survey date: <b>22/10/2011 &amp; 10/11/2011</b>
Recorder name (s): <b>D Benham &amp; B King</b>	Cent. grid ref: <b>SD1884 8913</b>
Valley / area: <b>West side of Duddon valley</b>	Altitude: <b>150 – 200m</b>
Aspect: <b>to NE</b>	Ownership:

**2. Stand area:**

- a) Have you changed the boundaries of the stand on the survey map? **A little**
- b) GPS number and track name / label? **Juniper track S of Smallthwaite**
- c) Area of sub stands and total area?

Sub stand	<b>A&amp;B</b>	<b>C (outlier)</b>								<b>Total</b>
Area	<b>6.1</b>	<b>0.8</b>								<b>6.9</b>
Confidence										

**3. Plant numbers and Juniper sub-species? Ssp.....**

Sub stand	<b>A</b>	<b>B</b>	<b>C</b>							<b>Total</b>
Count	<b>430</b>	<b>340</b>	<b>38</b>							<b>808</b>
Method	<b>Exact count</b>	<b>Exact count</b>	<b>Exact count</b>							
Confidence	<b>High</b>	<b>High</b>	<b>High</b>							

**4. Dominant Vegetation .....**

**Other vegetation types present:**

<b><u>acid grassland</u></b>	wet grassland / rushes
dry heath	<b><u>wet heath / mire</u></b>
Limestone grassland	<b><u>Bracken</u></b>
Scree	<b><u>BVG</u></b> <b><u>Outcrop</u></b> / cliff
Limestone scree	Limestone outcrop / cliff

**5. Grazing / browsing (circle appropriate grazing animal)?**

**Sheep**                      **Cattle**                      Red Deer                      Other .....

**No grazing impact assessment carried out.**

## Indicators of high grazing / browsing pressure?

Very little tree seedling regeneration around Junipers but much regeneration on northern side of boundary wall.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
2%	10%	45%	40%		3%
Comments: <b>Many ancient collapsed junipers &amp; tall bracken</b>					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
S1	SD18709 89133	45deg		View Coniston Old Man centre, from rock outcrop looking to Smallthwaite well (wall?)
S2	SD18709 89133	80deg		View Coniston Old Man to left, from rock outcrop looking to Woodheads well.
S3	SD18709 89133		Close	Juniper bush with sheep hole.

9. Comments (associated flora and fauna, survey / access difficulties?):

A large Scots Pine marks the eastern boundary of the tracked area. An Ash tree grows in the stream passing down the centre of the site. The only other trees in the tracked area, apart from Junipers, are small Rowans & Holly. Small Junipers grow on the upper reaches of the main and minor stream but not in a lower flat mire (probably due to grazing pressure) east of the main stream.

There is much tall Bracken which is choking some old Junipers and preventing regeneration. Most larger Junipers grow along rocky outcrops on the NE slope bounded, at the bottom, by a stone wall and mixed woods.

A number of sheep were grazing the 6.9 Ha tracked area (owned by Mrs J King & Mr Clark who have commoners grazing rights. Mrs King also has some Galloway cattle

on these fells). There is a small outlier of Junipers (sub-stand 2) on a rocky outcrop to the east of the main tracked area with some old Junipers shaded out by trees.

Birds seen :- 2 Snipe, 2 Woodcock, flock of crossbills flying over.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Thwaites Fell	Equiv. L. Ward site (s): Thwaites Fell
Site Ref. code: Jun-SD1889-02	Survey date: 13/10/2011
Recorder name (s): M. Douglas	Cent. grid ref: SD 18050 90080
Valley / area: Duddon Valley	Altitude: 120m – 230m
Aspect: 60 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										62.32ha
Confidence										5

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A	B	C							Total
Count	346	343	1807							2496
Method										VP photo
Confidence	M	M	L							L

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Patchy grazing. High impact in the SE where some juniper have been browsed and bark stripped, alongside browsed *Erica tetralix*. Elsewhere juniper seedlings are unbrowsed.

## 6. Other threats:

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
8%	36%	22%	21%	11%	present
Comments:					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1889-02A	-	-		Seed collecting work party and survey Oct 2011.
Jun-SD1889-02B	SD18854 90423	230 degrees		Overview of central area of stand, taken from Penn Hill
Jun-SD1889-02C	SD18854 90423	210 degrees		Overview of southern area of stand, taken from Penn.

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Sub site A southern most subsite, B eastern most and C main stand.

Juniper at low density across the area, mixed in with very scattered willow spp, holly, rowan and sycamore. Redwing and Fieldfare flocks appeared to be feeding on fallen juniper berries.

This is a very wet site with abundant Sphagnum spp, Tricophorum germanicum, heavily browsed Calluna vulgaris and patchily browsed Erica tetralix, with some cranberry and bog rosemary.

Proportions within different age classes were derived from a sample of 198 juniper observed on a 'W-walk' across the site.

## Restoration:

This is an unusual site in that regeneration is occurring despite browsing and bark stripping of juniper taking place elsewhere in the stand. On the face of it, enough regeneration is taking place to sustain the population in the long term. Most seedlings and young bushes are in wetter areas though, where ultimate growth and reproductive output is likely to be suppressed due to sub-optimal conditions. The stand has also been confirmed as a *Phytophthora austrocedrae* infected site, with at least tens of trees suffering from this pathogen. Recent research has revealed that bushes growing in wet ground are more susceptible to this disease.

A reduction in winter sheep stocking densities will be necessary to allow regeneration to occur on drier areas, and such a seasonal reduction would also put an end to bark

stripping damage on established bushes. Although complete off-wintering is a preferred option for juniper stands, partial off-wintering may allow regeneration when accompanied by shepherding, with the aim of preventing a concentration of livestock in areas identified for natural regeneration.

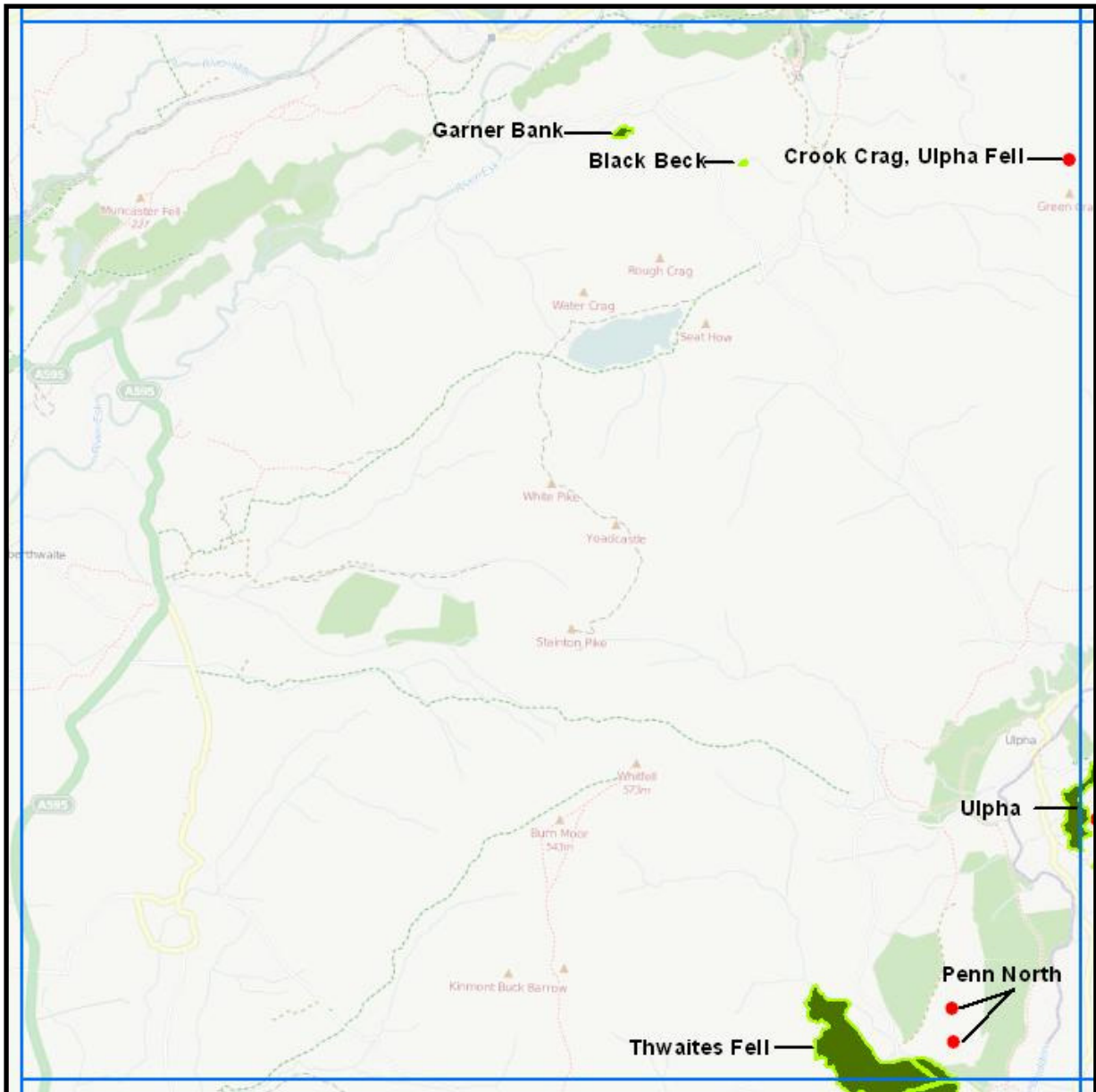
### **Potential Planting areas:**

Two planting areas were identified during a desk based survey, both within 3 km and upslope of the existing juniper. Planting at either of these sites would help to bolster the juniper population at the extreme SW of its range in Cumbria, and would help ensure against an acceleration in *Phytophthora austrocedrae* infection at the Thwaites Fell stand.

1. **Plough Fell** The drawn area of 10.58 ha would require a fence of 960m length (assuming that the existing wall to the east is stock-proof). Assuming that 60% of the area is plantable, and using a planting rate of 300 juniper/ha, 1800 juniper could be planted in the proposed enclosure. 240 taller tree species could also be planted, including rowan, birch and aspen.

2. **Buck Barrow** The drawn area encompasses 28.43ha, and assuming that walls to the west are stock-proof, this area would require 1420m of fencing. Assuming that 40% of the area is plantable, and using the planting rate of 300 juniper/ha, 3300 juniper could be planted, along with 440 taller tree species including rowan, birch and aspen.

# SD19



## Sites List:

Jun-SD1598-01	Garner Bank
Jun-SD1698-01	Black Beck
Jun-SD1889-02	Thwaites Fell
Jun-SD1890-01	Penn South
Jun-SD1890-02	Penn North
Jun-SD1992-01	Ulpha
Jun-SD1998-01	Crook Crag, Ulpha Fell



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Garner Bank	Equiv. L. Ward site (s): Garner Bank
Site Ref. code: Jun-SD1598-01	Survey date: 11/11/2012
Recorder name (s): D Benham and B. King	Cent. grid ref: SD1566 9896
Valley / area: Eskdale	Altitude: 40m – 90m
Aspect: 350 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.37									1.37
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	270									270
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

No dwarf shrub heath present and few young juniper. Some evidence of higher grazing pressure in the past but no great change recently.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
2	14	47	33	3	1
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1598-01A	SD 1587 9905	SW		Stand overview
Jun-NY1598-01B	SD 1575 9892	W		
Jun-NY1598-01C	SD 1563 9900	E		Old, browsed juniper

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Difficult to access (have to wade across 2 m beck). Established bushes healthy but grazing probably preventing further increase at present.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Black Beck	Equiv. L. Ward site (s): Black Beck
Site Ref. code: Jun-SD1698-01	Survey date: 11/11/2012
Recorder name (s): D. Benham and B. King	Cent. grid ref: SD 1680 9866
Valley / area: Eskdale	Altitude: 150m
Aspect: 350 degrees	Ownership:

**2. Stand area:**

- b) Have you changed the boundaries of the stand on the survey map?
- d) GPS number and track name / label?
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	0.23									0.23
Confidence	4									4

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c. comm .....**

Sub stand	A									<b>Total</b>
Count	21									21
Method	WT									WT
Confidence	M									M

**4. Dominant Vegetation ...Bracken.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | <u>wet heath / mire</u>   |
| Limestone grassland | Bracken                   |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Bog myrtle heavily grazed. No dwarf shrub heath present and only old junipers present.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	X	71%	24%	5%
Comments: Few berries					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1698-01A	SD1685 9867	NW		Stand overview
Jun-SD1698-01B	SD1680 9864	NW		Dying juniper

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper slowly dying off. Little for sheep to eat and lack of younger juniper age classes suggests long term over-grazing.



**Uplands for Juniper Project – Survey**  
**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Thwaites Fell	Equiv. L. Ward site (s): Thwaites Fell
Site Ref. code: Jun-SD1889-02	Survey date: 13/10/2011
Recorder name (s): M. Douglas	Cent. grid ref: SD 18050 90080
Valley / area: Duddon Valley	Altitude: 120m – 230m
Aspect: 60 degrees	Ownership: National Trust

**2. Stand area:**

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A	B	C							<b>Total</b>
Area										62.32ha
Confidence										5

**3. Plant numbers and Juniper sub-species?**

**Ssp...*J.c.comm* .....**

Sub stand	A	B	C							<b>Total</b>
Count	346	343	1807							2496
Method										VP photo
Confidence	M	M	L							L

**4. Dominant Vegetation ...wet heath / mire.....**

**Other habitats / vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| <u>dry heath</u>      | wet heath / mire          |
| Limestone grassland   | <u>Bracken</u>            |
| Scree                 | Outcrop / cliff           |
| Limestone scree       | Limestone outcrop / cliff |
| Woodland              |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Patchy grazing. High impact in the SE where some juniper have been browsed and bark stripped, alongside browsed *Erica tetralix*. Elsewhere juniper seedlings are unbrowsed.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
8%	36%	22%	21%	11%	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1889-02A	-	-		Seed collecting work party and survey Oct 2011.
Jun-SD1889-02B	SD18854 90423	230 degrees		Overview of central area of stand, taken from Penn Hill
Jun-SD1889-02C	SD18854 90423	210 degrees		Overview of southern area of stand, taken from Penn.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub site A southern most subsite, B eastern most and C main stand.

Juniper at low density across the area, mixed in with very scattered willow spp, holly, rowan and sycamore. Redwing and Fieldfare flocks appeared to be feeding on fallen juniper berries.

This is a very wet site with abundant Sphagnum spp, Tricophorum germanicum, heavily browsed Calluna vulgaris and patchily browsed Erica tetralix, with some cranberry and bog rosemary.

Proportions within different age classes were derived from a sample of 198 juniper observed on a 'W-walk' across the site.

**Restoration:**

This is an unusual site in that regeneration is occurring despite browsing and bark stripping of juniper taking place elsewhere in the stand. On the face of it, enough regeneration is taking place to sustain the population in the long term. Most seedlings and young bushes are in wetter areas though, where ultimate growth and reproductive output is likely to be suppressed due to sub-optimal conditions. The stand has also been confirmed as a *Phytophthora austrocedrae* infected site, with at least tens of trees suffering from this pathogen. Recent research has revealed that bushes growing in wet ground are more susceptible to this disease.

A reduction in winter sheep stocking densities will be necessary to allow regeneration to occur on drier areas, and such a seasonal reduction would also put an end to bark stripping damage on established bushes. Although complete off-wintering is a preferred option for juniper stands, partial off-wintering may allow regeneration when accompanied by shepherding, with the aim of preventing a concentration of livestock in areas identified for natural regeneration.

**Potential Planting areas:**

Two planting areas were identified during a desk based survey, both within 3 km and upslope of the existing juniper. Planting at either of these sites would help to bolster the juniper population at the extreme SW of its range in Cumbria, and would help ensure against an acceleration in *Phytophthora austrocedrae* infection at the Thwaites Fell stand.

1. **Plough Fell** The drawn area of 10.58 ha would require a fence of 960m. length (assuming that the existing wall to the east is stock-proof). Assuming that 60% of the area is plantable, and using a planting rate of 300 juniper/ha, 1800 juniper could be planted in the proposed enclosure. 240 taller tree species could also be planted, including rowan, birch and aspen.

2. **Buck Barrow** The drawn area encompasses 28.43ha, and assuming that walls to the west are stock-proof, this area would require 1420m of fencing. Assuming that 40% of the area is plantable, and using the planting rate of 300 juniper/ha, 3300 juniper could be planted, along with 440 taller tree species including rowan, birch and aspen.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Penn South	Equiv. L. Ward site (s): None
Recorder name (s): M. Douglas	Survey date: 04/10/2012
	Cent. grid ref: SD18798 90369
Valley / area: Duddon Valley	Altitude: 190m
Aspect: Various	Ownership:

**2. Stand area:**

- d) Have you changed the boundaries of the stand on the survey map?  
N / A
- h) GPS number and track name / label?  
N / A
- i) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area										
Confidence	5									

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	34									34
Method	WT									WT
Confidence	H									H

**4. Dominant Vegetation ...Dry heath.....**

**Other habitats / vegetation types present:**

- |                            |                                  |
|----------------------------|----------------------------------|
| <u>acid grassland</u>      | <u>wet grassland / rushes</u>    |
| <u>dry heath</u>           | <u>wet heath / mire</u>          |
| <u>Limestone grassland</u> | <u>Bracken</u>                   |
| <u>Scree</u>               | <u>Outcrop / cliff</u>           |
| <u>Limestone scree</u>     | <u>Limestone outcrop / cliff</u> |
| <u>Woodland</u>            |                                  |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Most junipers showing signs of past browsing down to woody material, but neighbouring DSH only lightly browsed.

## 6. Other threats:

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
10%	30%	50%	10%	X	X
Comments: Regeneration event 20 to 40 years ago? Three seedlings amongst heather.					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Combination of browsing impacts suggests that red deer may occasionally visit the site, impacting upon the juniper on an otherwise lightly sheep-grazed site. Other trees include hawthorn, holly, rowan, birch, spruce spp, and sessile oak. There appeared to be a climatically dwarfed individual of the latter species at SD 18905 90385 (just 200m alt).

## Management Recommendations:

The mosaic of habitats on this site are of high wildlife value and the patchy and generally low impact stocking regime is allowing the development of some juniper scrub.

The small population of juniper on Penn could be boosted by planting. This could be done without tree guards as long as low-grazing impact areas were chosen (within lightly browsed and un-browsed heather). This location is unusual in the Lake District as it is a site where a transition from woodland to scrub and then to dwarf shrub heath could be achieved given some juniper planting and on-going light grazing. The value of these habitats is all the more important due to the proximity of the large Thwaites Fell juniper stand, and the Duddon Valley Woodlands SSSI.

Four-hundred juniper could be planted between the existing juniper and the summit of Penn. Although current sheep grazing regimes should allow these bushes to establish, monitoring of red deer populations and impacts in the area, followed by increases in cull rates where necessary will be important.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Penn North	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-SD1890-02	Survey date: 04/10/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD1878 9068
Valley / area: Duddon Valley	Altitude: 190 – 220m
Aspect: Various	Ownership:

**2. Stand area:**

- e) Have you changed the boundaries of the stand on the survey map?  
N / A
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area										
Confidence	5									

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	24									24
Method	WT									WT
Confidence	H									H

**4. Dominant Vegetation ...dry heath.....**

**Other habitats / vegetation types present:**

- |                       |                               |
|-----------------------|-------------------------------|
| <u>acid grassland</u> | <u>wet grassland / rushes</u> |
| dry heath             | <u>wet heath / mire</u>       |
| Limestone grassland   | Bracken                       |
| Scree                 | <u>Outcrop / cliff</u>        |
| Limestone scree       | Limestone outcrop / cliff     |
| Woodland              |                               |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Most junipers showing signs of past browsing, but surrounding vegetation only lightly grazed.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	X	X
Comments: 1 young bush, 4 mature and the rest old.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Combination of browsing impacts on different vegetation suggests occasional visits by red deer, to otherwise lightly sheep-grazed area. Spruce species are spreading into this area from neighbouring plantation.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Ulpha	Equiv. L. Ward site (s): Dunnersdale Fell, West and East
Site code: Jun-SD1992-01	Survey date: 23/11/2012
Recorder name (s): M. Douglas and S. Townsend.	Cent. grid ref: SD 19920 92700
Valley / area: Duddon	Altitude: 60 – 200m
Aspect: Various	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- l) GPS number and track name / label?  
N/A
- m) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area	15.11	2.13								17.24
Confidence	5	5	5	5						5

### 3. Plant numbers and Juniper sub-species?

Ssp... *J.c.comm*.....

Sub stand	A	B	C	D						Total
Count	830	195	34	34						1093
Method	VP	VP	VP	VP						VP
Confidence	M	H	H	H						M

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Majority of junipers show signs of winter browsing, hard and extensive on some bushes. Some bushes at the north end of the stand have been browsed recently.

Only one seedling found and no young trees. Lots of mature trees showing suppressed growth, illustrating long term heavy browsing pressure.

**6. Other threats:**

Succession to tall trees. Almost all regeneration of tall trees is within the protective canopy of existing junipers, leading to the death of these junipers in the long term.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1 of	X	present	present	X	Present
Comments: Almost all bushes mature or old. Berry bearing trees abundant.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1992-01A				Aspen suckers establishing in protection of juniper.
Jun-SD1992-01B				Ash and yew established after regenerating within juniper canopy.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub stands and outliers comprise A: Main stand, B: Northern sub-stand adjacent to Birks Wood, C: outliers to east of main stand and D: Southern outlier at Cinderhill Beck.

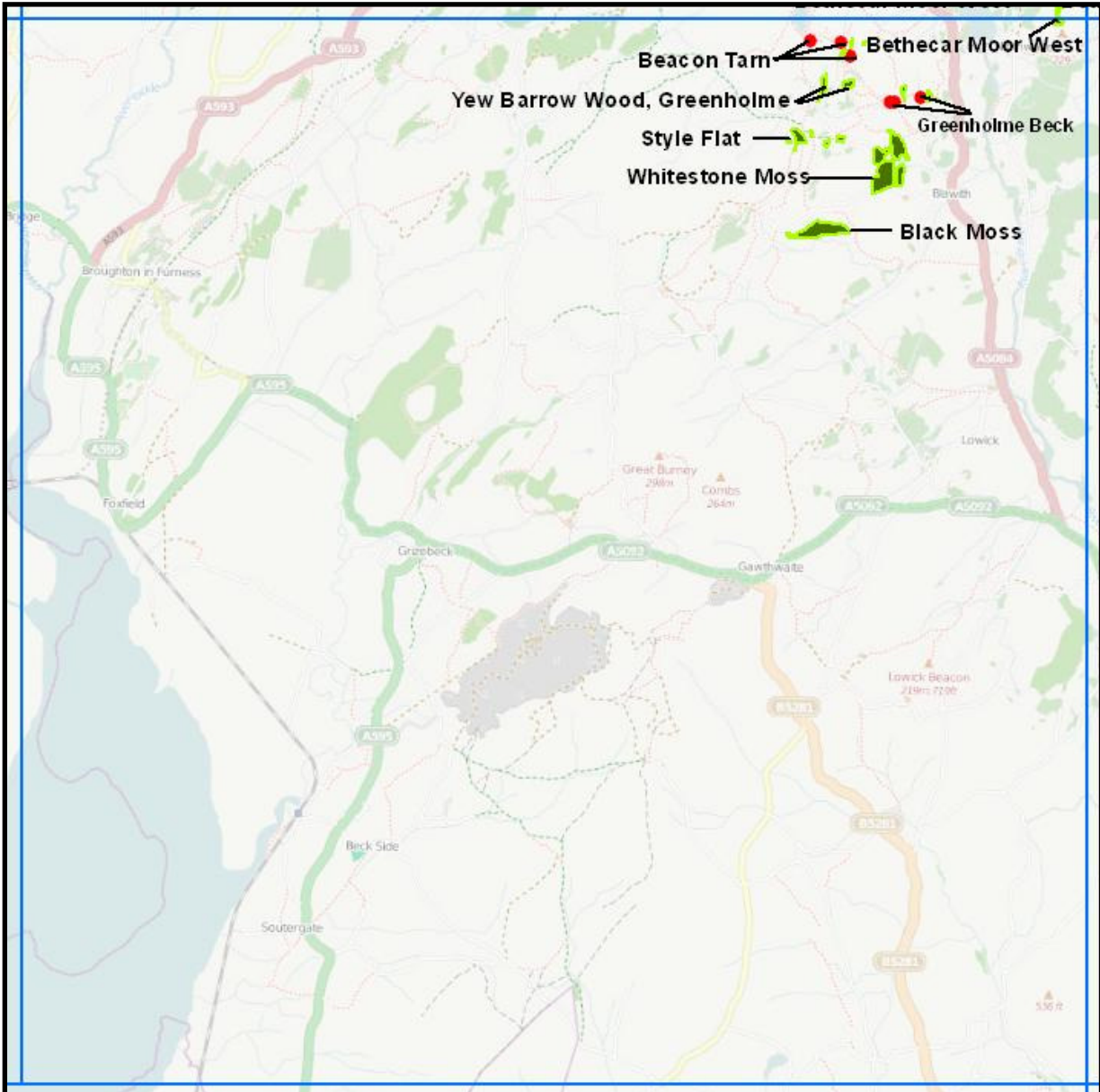
Large juniper stand of variable density, with abundant oak, ash, rowan, birch, hawthorn, holly, yew and aspen. Two large clones of the latter numbered 8 and 10 large stems respectively, with many smaller suckers present. Largest mature stem at SD19883 92480, measuring 1.85m. circumference or 59cm DBH.

Few sycamore and 1 beech present (planted).

Almost all regeneration of tall tree species is within the protection of juniper canopies, something which will aid the decline of this juniper stand given its complete lack of regeneration at present.

Numerous large juniper present including one of 44cm diameter at base, or 140cm circumference, at SD 19890 92254.

# SD28



## Sites List:

- |               |                             |
|---------------|-----------------------------|
| Jun-SD2788-01 | Black Moss                  |
| Jun-SD2788-02 | Style Flat                  |
| Jun-SD2789-01 | Beacon Tarn                 |
| Jun-SD2789-02 | Yew Barrow Wood, Greenholme |
| Jun-SD2888-01 | Whitestone Moss             |
| Jun-SD2889-01 | Greenholme Beck             |
| Jun-SD2990-01 | Bethacar Moor West          |



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Black Moss	Equiv. L. Ward site(s): Houlker Hall West
Site Ref. Code: Jun-SD2788-01	Survey date: 23-08-2011
Recorder name (s): P and R Howlett, H Corton	Cent. grid ref: SD 2749 8803
Valley / area: Blawith and Subberthwaite	Altitude: 90 m – 120 m
Aspect: Various	Ownership

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? YES
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	5.13									5.13 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm. ....

Sub stand	A									<b>Total</b>
Count	601									601
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...wet grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<b>wet heath / mire</b>
Limestone grassland	<b>Bracken</b>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer    Other .....

#### Indicators of high grazing / browsing pressure?

Grazing impact assessment carried out 01/05/2013 (H. Corton, R. and L. Kingston). Browsing of heather, juniper and cross-leaved heath, and the growth form of heather suggests that current impacts are high, that these impacts are long term and are if anything, increasing.

6. **Other threats:** None obvious

7. **Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Few	10%	50%	40%	present	present
Comments: Later visit (01/05/2013) suggested that some of those previously classed as young are actually mature.					

**Are fruit bearing trees present?** Yes / no

8. **Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

9. **Comments (associated flora and fauna, survey / access difficulties?):**

Juniper seemed to be nearly exclusively in areas free from Bracken, mostly in wet Mire.

Saw Adder, Green Woodpecker nearby. Very undisturbed area.

H had Stonechats and saw a singing Yellowhammer. There is a scrambling track on the hillside opposite the road. It was well away from the Juniper and seemed not to be having any effect.

Very beautiful undisturbed area, lots of flowers, Bog Myrtle, Butterflies & Birds.

The site was revisited on 01/05/2013 by H. Corton and R. and L. Kingston, to carry out Grazing Impact Assessment (see above). The results of this later survey, and the observation that some of the young trees were actually older, moves this stand from 'stable' to 'slow decline.'



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Style Flat	Equiv. L. Ward site (s): Houlker Hall West
Site Ref. Code: Jun-SD2788-02	Survey date: 23/08/2011
Recorder name (s): P and R Howlett, H Corton	Cent. grid ref: SD 2748 8888
Valley / area: Blawith and Subberthwaite	Altitude: 110m – 160m
Aspect: Various	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.82									1.82ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	364									364
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	10%	50%	40%	present	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper seemed to be exclusively in areas free of bracken, mostly in wet mire. Saw common frog, common lizard, adder, green woodpecker, stonechat and yellowhammer.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Beacon Tarn	Equiv. L. Ward site (s): Greenholme West (part of)
Site Ref. Code: Jun-SD2789-01	Survey date: 09/08/2011
Recorder name (s): P. and R. Howlett. H. Corton	Cent. grid ref: SD 27720 89710
Valley / area: Subberthwaite	Altitude: 130 – 170 m.
Aspect: various	Ownership:

**2. Stand area:**

b) Have you changed the boundaries of the stand on the survey map?

Yes

f) GPS number and track name / label?

N / A

g) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										0.05ha
Confidence										5

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c. comm.....**

Sub stand	1	2	3	4	5					<b>Total</b>
Count	17	27	8	5	3					60
Method	WT	WT	WT	WT	WT					WT
Confidence	H	H	H	H	H					H

**4. Dominant Vegetation ...wet heath / mire.....**

**Other vegetation types present:**

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

None. Re-visit Jan 2013 (MD): 100% of accessible juniper shoots browsed.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
<1%	10%	50%	40%	10%	<1%
Comments: Very few seedlings					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Seemingly young trees in wet mire have stems of more than 2.5cm at base.

Sub-stands are numbered from East to West, with the eastern most substand (1) with 17 bushes and the western most (5) with 3 bushes.

Re-visit Jan 2013 (MD): Many bushes previously assessed as young seem to be mature, based on diameter at base (>25mm).



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Yew Barrow Wood, Greenholme.	Equiv. L. Ward site (s): Greenholme West (part of)
Site Ref. Code: Jun-SD2789-02	Survey date: 09/08/2011
Recorder name (s): P and R Howlett, H. Corton	Cent. grid ref: SD 27550 489380
Valley / area: Subberthwaite	Altitude: 110 – 140 m.
Aspect: Various	Ownership:

**2. Stand area:**

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- h) GPS number and track name / label?  
N/A
- i) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										1.52ha
Confidence										5

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c.comm.....**

Sub stand	1	2								<b>Total</b>
Count	106	74								180
Method	WT	WT								WT
Confidence	H	H								H

**4. Dominant Vegetation ...wet heath / mire.....**

**Other vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | wet heath / mire          |
| Limestone grassland | <u>Bracken</u>            |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

MD visited the stand on 22/01/2013 and found that 100% of this years shoots had been browsed (western sub-stand).

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
<1%	10%	50%	40%	10%	<1%
Comments: Very few seedlings					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Seemingly young trees in wet mire have stems of more than 2.5cm at base. MD visited on 22/01/2013 and estimated that there were 55 juniper in the western sub-stand and that 80% of these were old, 5% mature and 5% dead.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Torver Low Common	Equiv. L. Ward site (s): Torver Low Common, E and W
Site Ref. Code: Jun-SD2792-01	Survey date: 16/10/2011
Recorder name (s): D. Benham, B. King	Cent. grid ref: SD27270 92820
Valley / area: Coniston	Altitude: 120 – 140m
Aspect: various	Ownership:

### 2. Stand area:

d) Have you changed the boundaries of the stand on the survey map?

Yes

j) GPS number and track name / label?

k) Area of sub stands and total area?

Sub stand	1	2	3							<b>Total</b>
Area	0.08	0.7	0.2							0.98ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2	3							<b>Total</b>
Count	38	450	89							577
Method	count	count	Count							Ex. Count
Confidence	h	h	h							H

### 4. Dominant Vegetation .....wet heath / mire.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Little grazing of this year's vegetation but junipers appear to be grazed at some point every year.

**6. Other threats: None**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: BK and D. Benham: 35% young, 35% mature and 20% old. MD (22/01/2013): 5% young, 65% mature and 20% old.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2792-01A	SD2714 9266	35 degrees		Rock outcrop view to Hazel Hall
Jun-SD2792-01B	SD2724 9278	60 degrees		View NE along valley mire
Jun-SD2792-01C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Occasional rowan, hawthorn and holly present. Many junipers browsed very low and lost within bog asphodel, *Molinia* and cross-leaved heath. Some *Drosera intermedia* beside streams.

MD visited on 22/01/2013 and found that only one of 15 apparently young trees had a stem diameter at base of less than 25mm, which suggests that most of the bushes originally classed as old are mature.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Torver Beck	Equiv. L. Ward site (s): Coniston Arrow
Site Ref. Code: Jun-SD2796-01	Survey date: 30/08/2011
Recorder name (s): P. Howlett, R. Howlett, H. Corton	Cent. grid ref: SD27330 96340
Valley / area: Coniston	Altitude: 290 – 350m
Aspect: 135 degrees.	Ownership:

### 2. Stand area:

e) Have you changed the boundaries of the stand on the survey map?

Yes

l) GPS number and track name / label?

m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	0.76									0.76ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	<b>A</b>									<b>Total</b>
Count	44									44
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation/ habitat .....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper growing in areas inaccessible to sheep

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	present	present	present	present	
Comments: Trees inaccessible to difficult to assess proportions within each age class					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Coniston Limestone	Equiv. L. Ward site (s): Con Limestone
Site Ref. Code: Jun-SD2796-02	Survey date: 30/08/2011
Recorder name (s): Peter and Ruth Howlett, Hilary Corton	Cent. grid ref: SD27900 96870
Valley / area: Coniston	Altitude: 340 – 470 m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- n) GPS number and track name / label?
- o) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										0.21ha
Confidence										3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	1	2	3	4	5	6	7			<b>Total</b>
Count	90	5	2	3	1	4	11			116
Method	VP	VP	VP	VP	VP	VP	VP			VP
Confidence	H	H	H	H	H	H	H			H

### 4. Dominant Vegetation/ habitat .....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Juniper growing in areas inaccessible to sheep

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	present	present	present	Present	
Comments: Trees inaccessible so difficult to assess proportions in each age class					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

9. Comments (associated flora and fauna, survey / access difficulties?):



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Hookler Hall	Equiv. L. Ward site (s): Hookler Hall
Site Ref. Code: Jun-SD2888-01	Survey date: 15/07/2011
Recorder name (s): MD PH RH RS	Central grid ref: SD28190 88680
Valley / area: Blawith	Altitude: 80 – 90m
Aspect: Various	Ownership:

**2. Stand area:**

- g) Have you changed the boundaries of the stand on the survey map?
- p) GPS number and track name / label?
- q) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?                      Ssp.....**

Sub stand	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>					<b>Total</b>
Count	<b>294</b>	<b>581</b>	<b>175</b>	<b>91</b>	<b>127</b>					<b>1268</b>
Method	<b>WT</b>	<b>WT/Vant</b>	<b>WT/Vant</b>	<b>Vantage</b>	<b>WT</b>					
Confidence	<b>H</b>	<b>L</b>	<b>M</b>	<b>M</b>	<b>H</b>					

**4. Dominant Vegetation ...Wet grassland.....**

**Other vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| dry heath             | <u>wet heath / mire</u>   |
| Limestone grassland   | <u>Bracken</u>            |
| Scree                 | Outcrop / cliff           |
| Limestone scree       | Limestone outcrop / cliff |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Little grazing at present – tall grass sward and good growth of dwarf shrub heath and Juniper.

BUT – signs of part heavy grazing pressure within growth of Heather

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Present	20%	50%	30%	Present	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed-point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
				NONE

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Numerous associated Birch, Rowan, Willow and occasional Yew, Ash, Holly, Hawthorn and Gorse.

Ground flora outside Bracken = Wet grassland/misc. species: Sorrel, Grass of Parnasus, Bog Asphodel, Sundew, Cranberry and Sphagnums.

Birds: Linnet, Willow Warbler, Whitethroat, Bullfinch, Redpoll, Siskin, Tree Pipit, Yellowhammer, Wren, Chaffinch and Buzzard.

Restoration Potential: Numerous seedlings and young trees illustrate natural regeneration. If there has been a recent reduction in grazing, further regeneration could be encouraged with scarification.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Greenholme Beck	Equiv. L. Ward site (s): Greenholme East
Site Ref. Code: Jun-SD2889-01	Survey date: 09/08/2011
Recorder name (s): P and R Howlett	Cent. grid ref: SD28500 89280
Valley / area: Subberthwaite	Altitude: 70 – 100m.
Aspect: 180 degrees	Ownership:

### 2. Stand area:

- h) Have you changed the boundaries of the stand on the survey map?  
Yes
- r) GPS number and track name / label?  
N/A
- s) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2	3	4	5	6				<b>Total</b>
Count	6	1	32	62	2	8				111
Method	WT	WT	WT	WT	WT	WT				WT
Confidence										H

### 4. Dominant Vegetation ...Bracken.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

None

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
<1%	10%	50%	40%	10%	<1%
Comments: Very few seedlings					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Seemingly young trees in wet mire have stems of more than 2.5cm at base.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blawith Common	Equiv. L. Ward site (s): Stable Harvey and Long Scars
Site Ref. code: Jun-SD2890-01	Survey date: 28/11/12 and 18/12/12 and 19/04/11 (MD).
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD2862 9091
Valley / area: Coniston	Altitude: 50m – 200m
Aspect: Various	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map?  
Yes
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G	H	I	J	Total
Area											16.65ha
Confidence	5	3	5	3	3	5	3	3	3	3	3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C	D	E	F	G	H	I	J	Total
Count	7	7	325	20	35	55	70	37	35	190	781
Method	VP	VP	VP	VP	VP	VP	VP	VP	VP	VP	VP
Confidence	H	H	M	L	L	H	M	M	M	M	M

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

No seedling juniper found and very few young bushes recorded. Swaledale sheep browsing juniper during survey. MD – 22/01/2013 – 100% of shoots browsed on some bushes at sub-stand J.

**6. Other threats:** Shading by bracken and tall trees

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	40%	55%	5%	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

### 9. Comments (associated flora and fauna, survey / access difficulties?):

Mostly scattered juniper growing on wet ground away from dense bracken and other tree species.

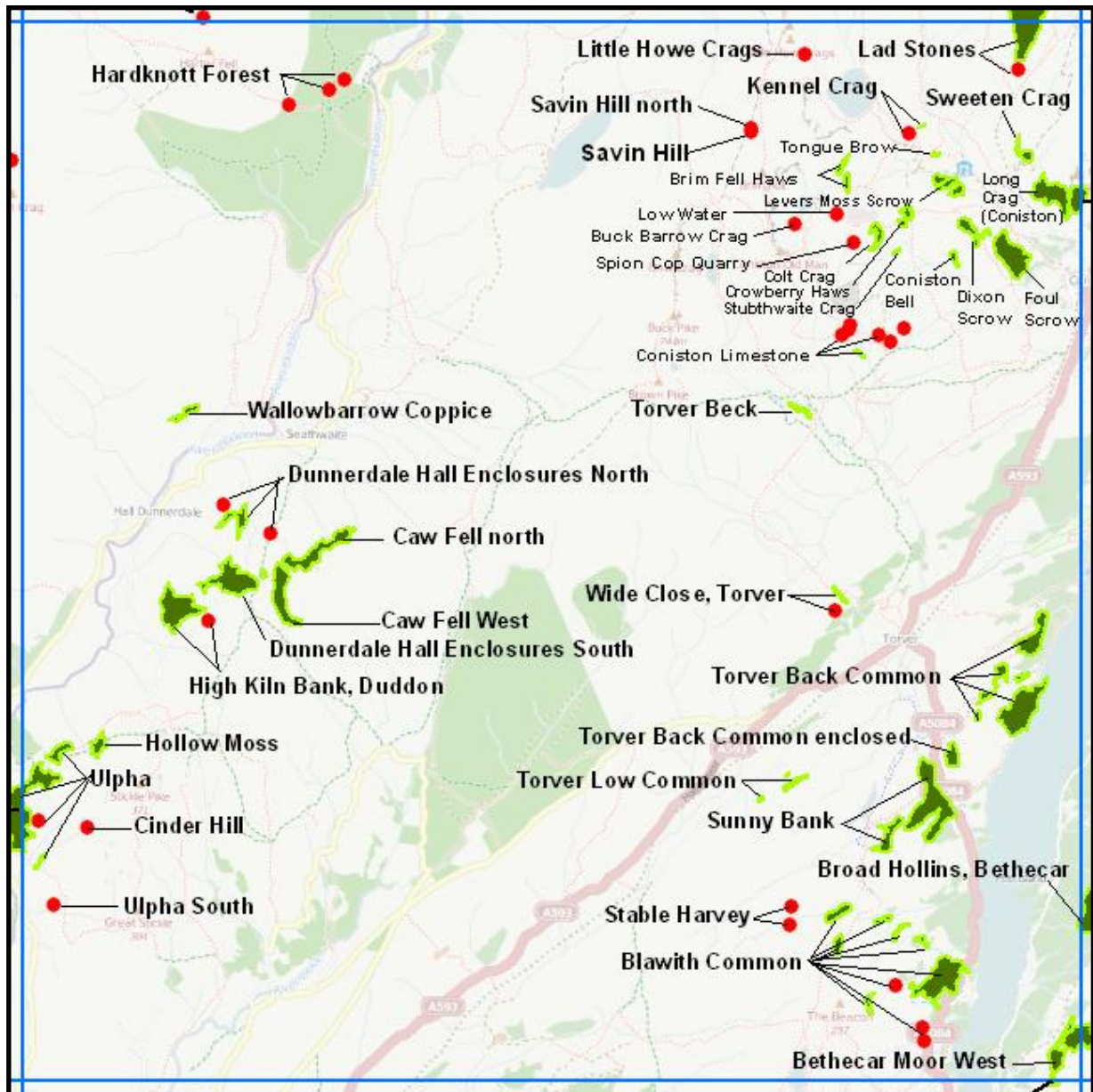
Boundary and count confidence ratings are low so some juniper may have been missed during surveys, and drawn boundaries may not encompass all juniper within each patch.

Point A is the southernmost point and the sequence follows an anti-clockwise route from this point, C being the largest sub-stand and J the highest altitude sub-stand.

MD re-surveyed sub-stand J on 22/01/2013, counting 190 juniper (M confidence), and more than 70% of these were old. No young juniper or seedlings were seen.

Browsing was patchy but on some bushes 100% of last years shoots were browsed off. Scattered yew, holly, rowan and large ash were present, and further down slope there were more birch, oak and ash with occasional willow species along stream sides.

# SD29



## Sites List:

Jun-NY2900-01	Lad Stones	Jun-SD2798-02	Low Water
Jun-SD1992-01	Upha	Jun-SD2798-03	Brim Fell Haws
Jun-SD2091-01	Upha South	Jun-SD2799-01	Little Howe Crags
Jun-SD2092-01	Cinder Hill	Jun-SD2890-01	Blawith Common
Jun-SD2093-01	Hollow Moss	Jun-SD2892-01	Sunny Bank
Jun-SD2194-01	High Kiln Bank, Duddon	Jun-SD2893-01	Torver Back Common enclosed
Jun-SD2194-02	Dunnerdale Hall Enclosures South	Jun-SD2897-01	Colt Crag
Jun-SD2196-01	Wallowbarrow Coppice	Jun-SD2897-02	Stubthwaite Crag
Jun-SD2294-01	Caw Fell West	Jun-SD2897-03	Coniston Bell
Jun-SD2295-01	Caw Fell north	Jun-SD2898-01	Levers Moss Scrow
Jun-SD2295-02	Dunnerdale Hall Enclosures North	Jun-SD2898-02	Dixon Scrow
Jun-SD2299-01	Hardknott Forest	Jun-SD2898-03	Crowberry Haws
Jun-SD2698-01	Savin Hill	Jun-SD2898-03	Tongue Brow

Jun-SD2699-01 Savin Hill north  
Jun-SD2791-01 Stable Harvey  
Jun-SD2792-01 Torver Low Common  
Jun-SD2794-01 Wide Close, Torver  
Jun-SD2796-01 Torver Beck  
Jun-SD2796-02 Coniston Limestone  
Jun-SD2797-01 Spion Cop Quarry  
Jun-SD2798-01 Buck Barrow Crag

Jun-SD2899-01 Kennel Crag  
Jun-SD2990-01 Bethacar Moor West  
Jun-SD2993-01 Torver Back Common  
Jun-SD2997-01 Foul Scrow  
Jun-SD2998-01 Long Crag (Coniston)  
Jun-SD2998-02 Sweeten Crag  
Jun-SD3091-01 Broad Hollins, Bethacar



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Lad Stones	Equiv. L. Ward site (s): Lad Stones
Site Ref. Code: Jun-NY2900-01	Survey date: 13/01/2012
Recorder name (s): M. Douglas	Cent. grid ref: NY 29500 00140
Valley / area: Tilberthwaite	Altitude: 340m – 600m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	22.14									22.14ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	3650									3650
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Much of the grassland throughout the stand dominated by *Nardus stricta*. DSH mostly on inaccessible crags or where present elsewhere, browsed to cushions or drumsticks. Occasional browsing of last year's shoots throughout, and browsing of some of the more accessible junipers has limited growth dramatically. Less grazing higher up (above 480m) where there is some *Empetrum nigrum* and better growth of *Vaccinium myrtillus*.

### 6. Other threats: none

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	X	Present
Comments: Only three seedlings seen on more inaccessible parts of the crag.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY2900-01A	NY 30009 00491	258 degrees		Whole stand photo
Jun-NY2900-01B				Heavily browsed junipers
Jun-NY2900-01C	NY 29375 00420			<i>Juniperus communis nana</i> or intermediate form.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Declining stand due to lack of regeneration. This is unlikely to change under current management regimes with too many out-wintered sheep limiting the growth of plants and preventing regeneration.

Clone of aspen trees (30 stems) at NY 29651 00105.

*Juniperus communis nana* or hybrid growing amongst common juniper on Steel Edge at NY29375 00420.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Ulpha	Equiv. L. Ward site (s): Dunnersdale Fell, West and East
Site code: Jun-SD1992-01	Survey date: 23/11/2012
Recorder name (s): M. Douglas and S. Townsend.	Cent. grid ref: SD 19920 92700
Valley / area: Duddon	Altitude: 60 – 200m
Aspect: Various	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N/A
- e) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area	15.11	2.13								17.24
Confidence	5	5	5	5						5

### 3. Plant numbers and Juniper sub-species?

Ssp... *J.c.comm*.....

Sub stand	A	B	C	D						Total
Count	830	195	34	34						1093
Method	VP	VP	VP	VP						VP
Confidence	M	H	H	H						M

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Majority of junipers show signs of winter browsing, hard and extensive on some bushes. Some bushes at the north end of the stand have been browsed recently. Only one seedling found and no young trees. Lots of mature trees showing suppressed growth, illustrating long term heavy browsing pressure.

**6. Other threats:**

Succession to tall trees. Almost all regeneration of tall trees is within the protective canopy of existing junipers, leading to the death of these junipers in the long term.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1 of	X	present	present	X	Present
Comments: Almost all bushes mature or old. Berry bearing trees abundant.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1992-01A				Aspen suckers establishing in protection of juniper.
Jun-SD1992-01B				Ash and yew established after regenerating within juniper canopy.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub stands and outliers comprise A: Main stand, B: Northern sub-stand adjacent to Birks Wood, C: outliers to east of main stand and D: Southern outlier at Cinderhill Beck.

Large juniper stand of variable density, with abundant oak, ash, rowan, birch, hawthorn, holly, yew and aspen. Two large clones of the latter numbered 8 and 10 large stems respectively, with many smaller suckers present. Largest mature stem at SD19883 92480, measuring 1.85m. circumference or 59cm DBH.

Few sycamore and 1 beech present (planted).

Almost all regeneration of tall tree species is within the protection of juniper canopies, something which will aid the decline of this juniper stand given its complete lack of regeneration at present.

Numerous large juniper present including one of 44cm diameter at base, or 140cm circumference, at SD 19890 92254.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hollow Moss	Equiv. L. Ward site (s): None
Site code: Jun-SD2093-01	Survey date: 13/12/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD 20710 93180
Valley / area: Duddon	Altitude: 180 – 210m.
Aspect: 315 degrees	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
N/A
- f) GPS number and track name / label?  
N/A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.74									1.74
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm .....

Sub stand	A									<b>Total</b>
Count	180									180
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

No signs of browsing damage on shoots from last two growing seasons, despite previous heavy browsing pressure (illustrated by form of junipers).

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	present	X	X
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper looking healthy despite the lack of any boundaries between this stand and the more heavily browsed Upha stand to the south.

Holly, rowan and a few scattered ash present including one ancient (?), hollow ash along stream.



**plants for Juniper Project – Survey Form**

**1. Site details**

Site Name: High Kiln Bank, Duddon	Equiv. L. Ward site (s): High Kiln Bank, Brockbarrow West
Site Ref. code: Jun-SD2194-01	Survey date: 19/02/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD 2148 9446
Valley / area: Duddon	Altitude: 140m – 260m
Aspect: 270 degrees	Ownership:

**2. Stand area:**

- d) Have you changed the boundaries of the stand on the survey map?  
Yes
- h) GPS number and track name / label?  
N / A
- i) Area of sub stands and total area?

Sub stand	A	B								Total
Area	8.63	-								8.63ha
Confidence	3	4								3

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c.comm .....**

Sub stand	A	B								Total
Count	342	13								355
Method	VP	VP								VP
Confidence	M	H								M

**4. Dominant Vegetation ...Acid grass.....**

**Other habitats / vegetation types present:**

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Bark stripping and browsing easy to find on juniper on lower slopes but very difficult to find higher up. Soft rush grazed throughout though, and only two seedlings were found on higher slopes despite abundant berry bearing bushes.

**6. Other threats: None**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	>85%	x	10%
Comments: Very old stand reaching the end of its life span					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2194-01A	SD21327 94511	40 degrees		
Jun-SD2194-01B	SD21620 94398	325 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Scattered stand of old juniper with many dead trees. Holly, rowan and oak also present.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Dunnerdale Hall Enclosures South	Equiv. L. Ward site (s): Low Hall Above / Hall Dunnerdale
Site Ref. code: Jun-SD2194-02	Survey date: 08/04/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD2196 9475
Valley / area: Duddon	Altitude: 180m – 250m
Aspect: 350 degrees	Ownership:

**2. Stand area:**

- e) Have you changed the boundaries of the stand on the survey map?  
Yes
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A	B								<b>Total</b>
Area										8.79ha
Confidence	5	5								5

**3. Plant numbers and Juniper sub-species?**

**Ssp...J.c. communis .....**

Sub stand	A	B								<b>Total</b>
Count	265	20								285
Method	VP	VP								VP
Confidence	M	H								M

**4. Dominant Vegetation ...wet heath / mire.....**

**Other habitats / vegetation types present:**

- |                       |                           |
|-----------------------|---------------------------|
| <u>acid grassland</u> | wet grassland / rushes    |
| dry heath             | wet heath / mire          |
| Limestone grassland   | <u>Bracken</u>            |
| Scree                 | <u>Outcrop / cliff</u>    |
| Limestone scree       | Limestone outcrop / cliff |
| Woodland              |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Browsing on juniper easy to find, sometimes 100% of shoots browsed. Some bushes browse lined.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	80%		15%
Comments: Many dead bushes. Lotsd of old bushes nearing end of their life-span.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2194-02	SD 2207 9449	355 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Smaller sub-stand to the east of the larger sub-stand. Very old and heavily browsed stand with scattered ash, rowan, larch and two old sycamore.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Wallowbarrow Coppice	Equiv. L. Ward site (s): Wallowbarrow Above
Site Ref. code: Jun-SD2196-01	Survey date: 09/08/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD2152 9629
Valley / area: Duddon	Altitude: 170m – 200m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- l) GPS number and track name / label?  
N / A
- m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.31									1.31ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A									<b>Total</b>
Count	255									255
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Hard to find signs of browsing on juniper and 2 holly saplings have got away in recent years. Two patches of heather had been browsed to drumstick / carpet forms though. The latter may be due to more recent grazing by escaped sheep. The land has just gone into HLS and is to be cattle grazed only.

**6. Other threats:** A number of large sycamore are present on neighbouring ground and these could spread into the juniper area if grazing is relaxed too much.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1 found	2 found	20%	75%	X	4 found
Comments: Lots of berry bearing bushes with abundant fruit at present.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2196-01A				
Jun-SD2196-01B				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This area has recently gone into HLS and is to be grazed by cattle only. At the moment sheep are getting in though, and this could be a problem in the future if large numbers gain access in the winter period.

The strong growth of ground flora may be preventing juniper regeneration at the moment, and the NT Tenant aims to counter this through experimenting with grazing cattle numbers and periods. 50 juniper will also be planted within the existing juniper (as well as 100 on Wallowbarrow Crag).

Ash, oak, birch, hazel, holly and gorse are present and redpoll and tree pipit were calling on the day of the survey.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Caw Fell West	Equiv. L. Ward site (s): Brockbarrow East (part of)
Site Ref. Code: Jun-SD2294-01	Survey date: 04/10/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD 2241 9456
Valley / area: Duddon Valley	Altitude: 220 380 m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
yes
- n) GPS number and track name / label?  
N / A
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	6.49									6.49
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	114									114
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | <u>wet heath / mire</u>   |
| Limestone grassland | <u>Bracken</u>            |
| <u>Scree</u>        | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

No seedlings found and most juniper on difficult to access crags. Most accessible junipers show signs of past browsing.

### 6. Other threats: None

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	>80%	X	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2294-01A				Rowan (bark stripped) growing from within shelter of juniper canopy.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Heavily grazed and browsed area with dwindling population of juniper. Occasional holly present and lone rowan regenerating within the protection of a juniper canopy.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Caw Fell North	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-SD2295-01	Survey date: 18/09/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD2280 9504
Valley / area: Duddon Valley	Altitude: 250 – 320m.
Aspect: 315 degrees	Ownership:

### 2. Stand area:

h) Have you changed the boundaries of the stand on the survey map?

N / A

p) GPS number and track name / label?

N / A

q) Area of sub stands and total area?

Sub stand	A	B								Total
Area	7.22 ha	N/A								7.22 ha
Confidence	5	3								5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B								Total
Count	676	26								696
Method	VP	VP								VP
Confidence	H	H								H

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Most junipers show signs of previous browsing, and browse lining and pruning due to browsing are easy to find. Only one seedling found. Most smaller bushes turned out to be at least mature (30 years plus) due to suppressed growth because of browsing.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	< 5%	>15%	80%	X	present
Comments: One seedling found. Few dead bushes.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2295-01A	SD23062 95232	229 degrees		Overview of part of stand from NE end
Jun-SD2295-01B				
Jun-SD2295-01C				

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This stand seems to have experienced long term heavy browsing and this is illustrated by obvious browsing (winter) of shoots, suppressed growth of mature and old trees, and the low numbers of young and seedling junipers. Numerous old hollies and a few rowan present.

**Management Recommendations (includes Caw West):**

Juniper at Caw North and Caw West has suffered from heavy browsing for a long period. The lack of tall trees of other species may also be due to long term browsing pressure and the value of these stands for wildlife is much reduced as a result. Ideal management would be a reduction in the stocking rate in this area, grazing with less than 1 ewe/ha over the period April to October, and wintering livestock off site. This would encourage natural regeneration of juniper, though other trees would be slow to colonise the area due to a lack of nearby seed trees. Planting of birch, aspen and rowan at the start of any stock reduction period would counter this problem.

In the absence of stock reductions, enclosures could be built upslope of the existing juniper, and planted up with juniper, birch, aspen and rowan. Two separate enclosures, totalling around 10 ha in extent would allow the planting of 3000 juniper and 400 taller trees.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Dunnerdale Hall Enclosures North	Equiv. L. Ward site (s): Hall Dunnerdale Total
Site Ref. code: Jun-SD2295-02	Survey date: 08/04/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD2204 9534
Valley / area: Duddon	Altitude: 110m - 180m
Aspect: 315 degrees	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map?  
Yes
- r) GPS number and track name / label?  
N / A
- s) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										2.64ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C							Total
Count	79	177	23							279
Method	VP	VP	VP							VP
Confidence	H	H	H							H

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browse lines suggest that grazing has been heavy in the past, but recent juniper browsing is patchy and generally light.

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	>90%	X	present
Comments: Two young bushes found					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Predominantly old juniper growing at variable density amongst scattered birch, rowan, holly, oak, hazel and ash.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Stable Harvey	Equiv. L. Ward site (s): Stable Harvey
Site Ref. code: Jun-SD2791-01	Survey date: 22/01/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD2725 9149
Valley / area: Coniston	Altitude: 120m – 140m
Aspect: Various	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
Yes
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A	B								<b>Total</b>
Area										
Confidence										

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B								<b>Total</b>
Count	32	49								81
Method	VP	VP								VP
Confidence	M	M								M

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsing of junipers light and infrequent at present, but some bark stripping at sub-stand A.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1%	4%	43%	48%	X	4%
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The two points represent scattered juniper along two stream / flush lines. There was a single rowan at sub-stand A and an old Scot's pine at sub-stand B.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Torver Low Common	Equiv. L. Ward site (s): Torver Low Common, E and W
Site Ref. Code: Jun-SD2792-01	Survey date: 16/10/2011
Recorder name (s): D. Benham, B. King	Cent. grid ref: SD27270 92820
Valley / area: Coniston	Altitude: 120 – 140m
Aspect: various	Ownership:

### 2. Stand area:

- k) Have you changed the boundaries of the stand on the survey map?  
Yes
- v) GPS number and track name / label?
  
- w) Area of sub stands and total area?

Sub stand	1	2	3							Total
Area	0.08	0.7	0.2							0.98ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2	3							Total
Count	38	450	89							577
Method	count	count	Count							Ex. Count
Confidence	h	h	h							H

### 4. Dominant Vegetation .....wet heath / mire.....

#### Other vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Little grazing of this year's vegetation but junipers appear to be grazed at some point every year.

### 6. Other threats: None

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: BK and D. Benham: 35% young, 35% mature and 20% old. MD (22/01/2013): 5% young, 65% mature and 20% old.					

Are fruit bearing trees present? Yes / no

8. **Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2792-01A	SD2714 9266	35 degrees		Rock outcrop view to Hazel Hall
Jun-SD2792-01B	SD2724 9278	60 degrees		View NE along valley mire
Jun-SD2792-01C				

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Occasional rowan, hawthorn and holly present. Many junipers browsed very low and lost within bog asphodel, *Molinia* and cross-leaved heath. Some *Drosera intermedia* beside streams.

MD visited on 22/01/2013 and found that only one of 15 apparently young trees had a stem diameter at base of less than 25mm, which suggests that most of the bushes originally classed as old are mature.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Coniston Limestone	Equiv. L. Ward site (s): Con Limestone
Site Ref. Code: Jun-SD2796-02	Survey date: 30/08/2011
Recorder name (s): Peter and Ruth Howlett, Hilary Corton	Cent. grid ref: SD27900 96870
Valley / area: Coniston	Altitude: 340 – 470 m
Aspect: 135 degrees	Ownership:

### 2. Stand area:

- l) Have you changed the boundaries of the stand on the survey map?  
Yes
- x) GPS number and track name / label?
- y) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										0.21ha
Confidence										3

### 3. Plant numbers and Juniper sub-species?

**Ssp...comm**

Sub stand	1	2	3	4	5	6	7			<b>Total</b>
Count	90	5	2	3	1	4	11			116
Method	VP	VP	VP	VP	VP	VP	VP			VP
Confidence	H	H	H	H	H	H	H			H

### 4. Dominant Vegetation/ habitat .....

#### Other vegetation / habitats present:

acid grassland	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Juniper growing in areas inaccessible to sheep

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	present	present	present	Present	
Comments: Trees inaccessible so difficult to assess proportions in each age class					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

9. Comments (associated flora and fauna, survey / access difficulties?):



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Blawith Common	Equiv. L. Ward site (s): Stable Harvey and Long Scars
Site Ref. code: Jun-SD2890-01	Survey date: 28/11/12 and 18/12/12 and 19/04/11 (MD).
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD2862 9091
Valley / area: Coniston	Altitude: 50m – 200m
Aspect: Various	Ownership:

### 2. Stand area:

- m) Have you changed the boundaries of the stand on the survey map?  
Yes
- z) GPS number and track name / label?  
N / A
- aa) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G	H	I	J	Total
Area											16.65ha
Confidence	5	3	5	3	3	5	3	3	3	3	3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C	D	E	F	G	H	I	J	Total
Count	7	7	325	20	35	55	70	37	35	190	781
Method	VP	VP	VP	VP	VP	VP	VP	VP	VP	VP	VP
Confidence	H	H	M	L	L	H	M	M	M	M	M

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

No seedling juniper found and very few young bushes recorded. Swaledale sheep browsing juniper during survey. MD – 22/01/2013 – 100% of shoots browsed on some bushes at sub-stand J.

**6. Other threats:** Shading by bracken and tall trees

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	40%	55%	5%	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Mostly scattered juniper growing on wet ground away from dense bracken and other tree species.

Boundary and count confidence ratings are low so some juniper may have been missed during surveys, and drawn boundaries may not encompass all juniper within each patch.

Point A is the southernmost point and the sequence follows an anti-clockwise route from this point, C being the largest sub-stand and J the highest altitude sub-stand.

MD re-surveyed sub-stand J on 22/01/2013, counting 190 juniper (M confidence), and more than 70% of these were old. No young juniper or seedlings were seen.

Browsing was patchy but on some bushes 100% of last years shoots were browsed off. Scattered yew, holly, rowan and large ash were present, and further down slope there were more birch, oak and ash with occasional willow species along stream sides.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Sunny Bank	Equiv. L. Ward site (s): Sunny Bank
Site Ref. Code: Jun-SD2892-01	Survey date: Various up to 25/07/11
Recorder name (s): M. Douglas, D. Benham, B. King	Cent. grid ref: SD28580 92650
Valley / area: Coniston	Altitude: 80 – 130m
Aspect: various	Ownership:

### 2. Stand area:

n) Have you changed the boundaries of the stand on the survey map?

Yes

bb)GPS number and track name / label?

cc) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	17.47									17.47 ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	A									<b>Total</b>
Count	1595									1595
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...Bracken.....

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other Roe deer..

### Indicators of high grazing / browsing pressure?

Young j. present only in mires and even here are heavily browsed. Bog myrtle also heavily browsed in April suggesting the site is heavily grazed in the winter.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
none	present	present	present	present	Present
Comments: Vast majority of trees are old					

**Are fruit bearing trees present?**

Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2892-01A				
Jun-SD2892-01B				
Jun-SD2892-01C	SD28552 92233	30 degrees		

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Heavily grazed area dominated by old trees, with little natural regeneration for many decades. It is varied though, with juniper of different densities and with a large variety of standard trees. Rowan, birch, holly, yew, hawthorn, blackthorn, oak and ash amongst juniper and willow and alder along Mere Beck. Most juniper growing amongst bracken but many younger trees growing in valley mire / flush vegetation. Variety of birds correspond with varied habitat with singing willow warbler, redpoll, chaffinch, redstart, whitethroat, wheatear, tree pipit, whinchat, stonechat and yellowhammer present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Torver Back Common Enclosure	Equiv. L. Ward site (s): Torver Back
Site Ref. code: Jun-SD2893-01	Survey date: 30/06/2012
Recorder name (s): P and R Howlett, H. Corton	Cent. grid ref: SD 28775 93074
Valley / area: Coniston	Altitude: 50m – 150m
Aspect: Various	Ownership:

### 2. Stand area:

- o) Have you changed the boundaries of the stand on the survey map?  
Yes
- dd) GPS number and track name / label?  
N / A
- ee) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	2.83									2.83
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	241									241
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...acid grass.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Good age range amongst juniper. Adjacent vegetation generally tall and un-grazed.

### 6. Other threats:

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	25%	65%	5%	X	X
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2993-01A				Old, browse lined juniper
Jun-SD2993-01B				Juniper growth form showing repeated browsing.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Fence seems to be successful in excluding livestock and bilberry and bell heather doing well alongside healthy, expanding juniper population.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Levers Moss Scrow	Equiv. L. Ward site (s): Levers Moss Scrow
Site Ref. code: Jun-SD2898-01	Survey date: 24/06/2013
Recorder name (s): R. Kingston	Cent. grid ref: SD2875 9848
Valley / area: Coniston	Altitude: 190m – 230m
Aspect: 90 degrees	Ownership:

### 2. Stand area:

p) Have you changed the boundaries of the stand on the survey map?

Yes

ff) GPS number and track name / label?

N / A

gg) Area of sub stands and total area?

Sub stand	A	B	C							<b>Total</b>
Area										2.99ha
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

*Ssp...J.c.comm .....*

Sub stand	A	B	C							<b>Total</b>
Count	48	92	175							315
Method	VP	VP	WT							WT
Confidence	H	H	M							M

### 4. Dominant Vegetation ...Acid Grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Most juniper with sheep browse lines and evidence of recent browsing. No heather or bilberry present.

6. Other threats: None

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	1%	2%	74%	3%	20%
Comments:					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2898-01A	SD2873 9857	260 degrees		Across beck to northern sub-stand.
Jun-SD2898-01B	Same	180 degrees		To beck-side juniper
Jun-SD2898-01C	Same	120 degrees		Looking across to the two southern sub-stands.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

A = southernmost sub-stand and C= northern most.

Like Dixon's Scrow nearby, this juniper is declining rapidly due to sheep grazing. Holly and birch present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Dixon Scrow	Equiv. L. Ward site (s): Dixon Scrow
Site Ref. code: Jun-SD2898-02	Survey date: 19/05/2013
Recorder name (s): Roger and Liz Kingston	Cent. grid ref: SD28956 98048
Valley / area: Coniston	Altitude: 230m – 270m
Aspect: Various	Ownership:

### 2. Stand area:

q) Have you changed the boundaries of the stand on the survey map?

Yes

hh) GPS number and track name / label?

N / A

ii) Area of sub stands and total area?

Sub stand	A	B								Total
Area	2.05	0.41								2.46ha
Confidence	4	4								4

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A	B								Total
Count	369	16								385
Method	WT	WT								WT
Confidence	m	m								m

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

All bushes winter browsed with browse lining on many bushes.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		10%	55%		35%
Comments: Collapsing branches quickly browsed by sheep.					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2898-02A				Dead and browse lined juniper (06/04/2011)
Jun-SD2898-02B				Dead juniper and Swaledale sheep (06/04/2011)
Jun-SD2898-02C				Browse lined old juniper (06/04/2011)

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Rapidly declining stand due to old age of bushes and heavy sheep browsing pressure.

Few hawthorn and holly present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bethocar Moor West	Equiv. L. Ward site (s): Bethocar Moor West
Site Ref. Code: Jun-SD2990-01	Survey date: 09/05/2012
Recorder name (s): M Douglas	Cent. grid ref: SD2989 9040
Valley / area: Coniston	Altitude: 130m - 210m
Aspect: 280 degrees	Ownership

### 2. Stand area:

- r) Have you changed the boundaries of the stand on the survey map?  
Yes
- jj) GPS number and track name / label?  
N / A
- kk) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										9.22ha
Confidence										5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B	C							<b>Total</b>
Count	480	308	300							1088
Method	VP	WT	VP							VP
Confidence	M	H	M							H

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe deer.....

#### Indicators of high grazing / browsing pressure?

Where present leggy old Calluna has not been browsed since last year, bracken litter layer is barely trampled and sedge rich flushes have not been grazed, all suggesting that sheep have not been outwintered. Some autumn / winter browsing of bilberry and holly though.

### 6. Other threats:

Sycamore and young spruce present amongst juniper – could lead to shading in the long term.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	Present
Comments: Dominated by old and mature juniper					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2990-01A				From track up to SE corner of plantation.
Jun-SD2990-01B				From upper boundary of stand looking to SW corner of plantation
Jun-SD2990-01C				From upper boundary of site looking west over southern sub-stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Singing birds: stonechat (1), yellowhammer (1), whitethroat (3), redpoll, garden warbler (1), willow warbler, dunnock, wren, chaffinch, cuckoo (>2), tree pipit (4) and wryneck! The latter mobbed by redpoll and other birds and still present on 11/05/2011. Buzzard, peregrine and red kite overhead. Green tiger beetle and green hairstreak at upper boundary of stand.

Trees: Ash, oak, rowan, holly, yew, hawthorn, blackthorn, birch, gorse and sycamore. Mosaic of habitats seem to be regenerating after past heavy grazing. Perhaps few niches for juniper regeneration though.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Torver Back Common	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD2993-01	Survey date: 30/06/2012 and 14/01/2013 (MD)
Recorder name (s): Peter and Ruth Howlett, H. Corton	Cent. grid ref: SD2941 9382
Valley / area: Coniston	Altitude: 50m – 150m
Aspect: Various	Ownership:

### 2. Stand area:

- s) Have you changed the boundaries of the stand on the survey map?  
N / A
- ll) GPS number and track name / label?  
N / A
- mm) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F				Total
Area										19.54ha
Confidence	5	5	5	5	5	5				5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C	D	E	F				Total
Count	200	40	172	58	64	64				598
Method	WT	WT	WT	WT	WT	WT				WT
Confidence	M	M	M	M	M	M				M

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe deer..

#### Indicators of high grazing / browsing pressure?

There has been little or no regeneration of juniper in many decades. The January visit coincided with the first snow of the winter and browsing of juniper was still patchy at that time, though it was severe and extensive to the south of Long Tarn, where bushes have obviously been heavily browsed for a number of years.

**6. Other threats:** Sycamore: middle aged tree at SD 29138 93658 (Long Tarn) risks the health of yew, old juniper and recently planted juniper. Two young sycamores at SD 29175 93730 threaten the health of two yew trees and four old juniper.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	>90%	X	present
Comments: Little if any juniper regeneration in many decades.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2993-01A				
Jun-SD2993-01B				

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
 Interesting stand of both discrete patches of juniper and isolated individuals, with varied neighbouring habitats. More heavily wooded ground to the north and near the Lake shore has more dense scrub (none-juniper) and bracken, while the higher ground is dominated by grass after many years of bracken control by the only active Commoner. Despite recent planting (150 seedlings planted in 2012), management changes will be required if the stand is to regenerate and survive in the long term.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Long Crag (Coniston)	Equiv. L. Ward site (s):
Site Ref. Code: Jun-SD2998-01	Survey date: 20/10/11
Recorder name (s): M. Douglas, A. Crowe	Cent. grid ref: SD 29816 98335
Valley / area: Coniston	Altitude: 180m – 360m
Aspect: S / SE	Ownership:

### 2. Stand area:

t) Have you changed the boundaries of the stand on the survey map?

Yes

nn) GPS number and track name / label?

Long Crag A and B

oo) Area of sub stands and total area?

Sub stand	A	B								Total
Area	6.9	3.3								10.2
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp comm.....

Sub stand	A	B								Total
Count	1311	845								2156
Method	VP	Photo								VP / photo
Confidence	M	M								M

### 4. Dominant Vegetation: Acid grassland.....

#### Other vegetation types present:

acid grassland

dry heath

Limestone grassland

Scree

Limestone scree

wet grassland / rushes

wet heath / mire

Bracken

Outcrop / cliff

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Grassland dominated by *Nardus stricta* and DSH only present on inaccessible crags. Some juniper shoots browsed but evidence of more severe browsing during previous winters.

### 6. Other threats: Few sycamore present but no sign of recent regeneration.

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	None seen	present
Comments: Majority of trees are old and only five seedlings found.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photos filed at: T:\Images\Projects\Wider Countryside\Juniper project\Coniston Coppermines area\Long Crag, Coniston

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
2011-10-21-002jpg	SD 30167 97724	317°		Overview of stand from Ruskin Museum

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Associated trees: hawthorn, gorse, rowan, oak and sycamore.

Heavily grazed area with few opportunities for juniper regeneration. Winter grazing / browsing appears to be a problem.

Restoration:

This site appears to be heavily stocked with sheep and / or winter grazed. Despite the difficult terrain, there are few seedlings present, and the predominance of old trees suggests that grazing regimes / stocking rates have not allowed regeneration for many decades.

The health and regeneration of juniper here will require reductions in sheep stocking rate, and more off-wintering of livestock. The presence of a handful of seedlings at the site suggests that the stand will regenerate given the correct grazing regime.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Broad Hollins, Bethacar	Equiv. L. Ward site (s): Broad Hollins
Site Ref. Code: Jun-SD3091-01	Survey date: 09/07/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD30130 91610
Valley / area: Coniston	Altitude: 100m – 220m
Aspect: 100 degrees	Ownership:

### 2. Stand area:

u) Have you changed the boundaries of the stand on the survey map?

Yes

pp) GPS number and track name / label?

N / A

qq) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	11.91									11.91
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	523									523
Method	VP photo									VP Photo
Confidence	M									M

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

### Indicators of high grazing / browsing pressure?

Almost all accessible junipers browsed, some severely, with more than two-thirds of last year's shoots removed. Some browse lining and topiary as a result and one example of bark stripping found. No obvious signs of red deer browsing found.

### 6. Other threats:

Shading – further down slope junipers dying as a result of shading. Shade bearing trees such as yew and sycamore present.

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	>80%	present	present
Comments: Two young trees present.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3091-01A	SD29110 91170	60 degrees		View of stand from across the lake.
Jun-SD3091-01B				Sheep browse line on juniper.
Jun-SD3091-01C				Bark stripping at around 1 metre height.

### 9. Comments (associated flora and fauna, survey / access difficulties?):

Ash, rowan, yew, holly, hazel, birch and sycamore present. Winter grazing appears to be a problem at this site given the shoot removal on junipers. Junipers dying downslope due to shading by tall trees.

### Comparison with L. Ward data:

The L. Ward survey of 1973 estimated that there were 2100 junipers at this site. This suggests a decline of 1577 bushes, or 75%, over a forty year period. The earlier survey found that all age classes of juniper were present, though the vast majority were old trees, so the decline may have already begun in the 1970's. The Uplands for Juniper Survey estimated that more than 80% of junipers were old, and did not reveal any seedlings and found only two young trees.

### Restoration:

Recent efforts have been made to restore the stand through the planting of 450 (?) seedling junipers. A quick transect of forty trees and protectors revealed that 30% (12 trees) had either been pushed over and browsed back hard, or had disappeared amongst strong growth of grasses or bracken.

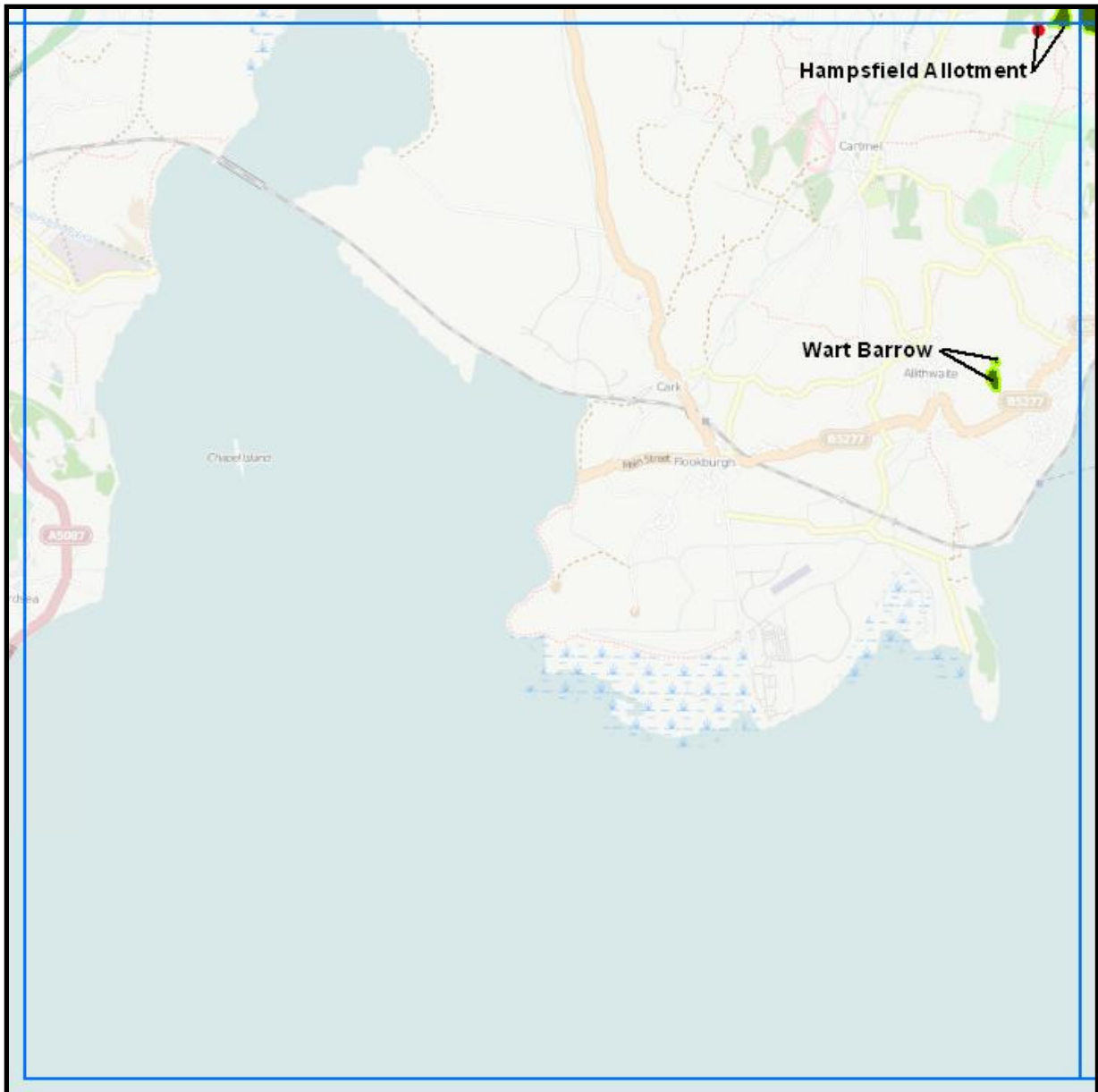
The extent and severity of browsing on established trees at this site suggests that planted seedlings will struggle to establish themselves given current grazing regimes. The priority for the restoration of this SSSI juniper stand is therefore to reduce the impact of sheep on and around this site. The key period for the browsing of juniper is outside the growing season, particularly during the winter and into the early spring period before more palatable species have started to grow. Livestock numbers either

need to be reduced or sheep need to be shepherded away from the juniper during this key period. This should prompt natural regeneration, but it should also be a precursor to planting, and to the removal of guards from existing planted seedlings.

**Planting:**

The level of protection required by planted juniper will depend upon livestock densities and grazing periods around Broad Hollins. Protecting a proportion of planted trees with individual protectors may be required even after the manipulation of stocking densities. Junipers planted in clumps of between ten and fifty trees, with individuals 1.5 m to 3 m apart, should coalesce as they grow to form self-protecting thickets, with more value for invertebrates and feeding and nesting birds than scattered, individual bushes. Carefully selected planting areas should help to strengthen and link existing juniper stands within the common. See the attached map for suggestions of planting locations. These were selected due to their relatively high altitude, relative position to existing stands and ease of maintenance. The proposed areas will also avoid important habitats such as dry heath, wet flushes and mires.

# SD37



## Sites List:

- Jun-SD3976-01 Wart Barrow
- Jun-SD4080-01 Hampsfield Allotment



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hampsfield allotment	Equiv. L. Ward site (s): Hampsfield Allotment SW, NW, NE, SE
Site Ref. Code: Jun-SD4080-01	Survey date: 02/01/2012
Recorder name (s): P&C Matthiessen	Cent. grid ref: SD400-802
Valley / area: Field Broughton/Carmel	Altitude: 130 – 190m
Aspect: NE/NW	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? No
- b) GPS number and track name / label? No tracks recorded
- c) Area of sub stands and total area?

Sub stand	A	B								Total
Area	4.5	10.8								15.3Ha
Confidence	Med	Med								

### 3. Plant numbers and Juniper sub-species?

**Ssp...**Common Juniper

Sub stand	A	B							Total
Count	78	300-400							378-478
Method	Direct	Direct							VP
Confidence	High	Medium							Medium

### 4. Dominant Vegetation ...Limestone Grassland & Ash/Holly open woodland

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer

#### Indicators of high grazing / browsing pressure?

Medium grazing pressure from deer.

**6. Other threats:** Most of the area was covered by Conifer plantation until about 7 years ago, when it was clear-felled.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		80%	10%	15%	
Comments: Die-back occurring where exposed to prevailing wind.					

**Are fruit bearing trees present?** Yes / no (approx. 15%)

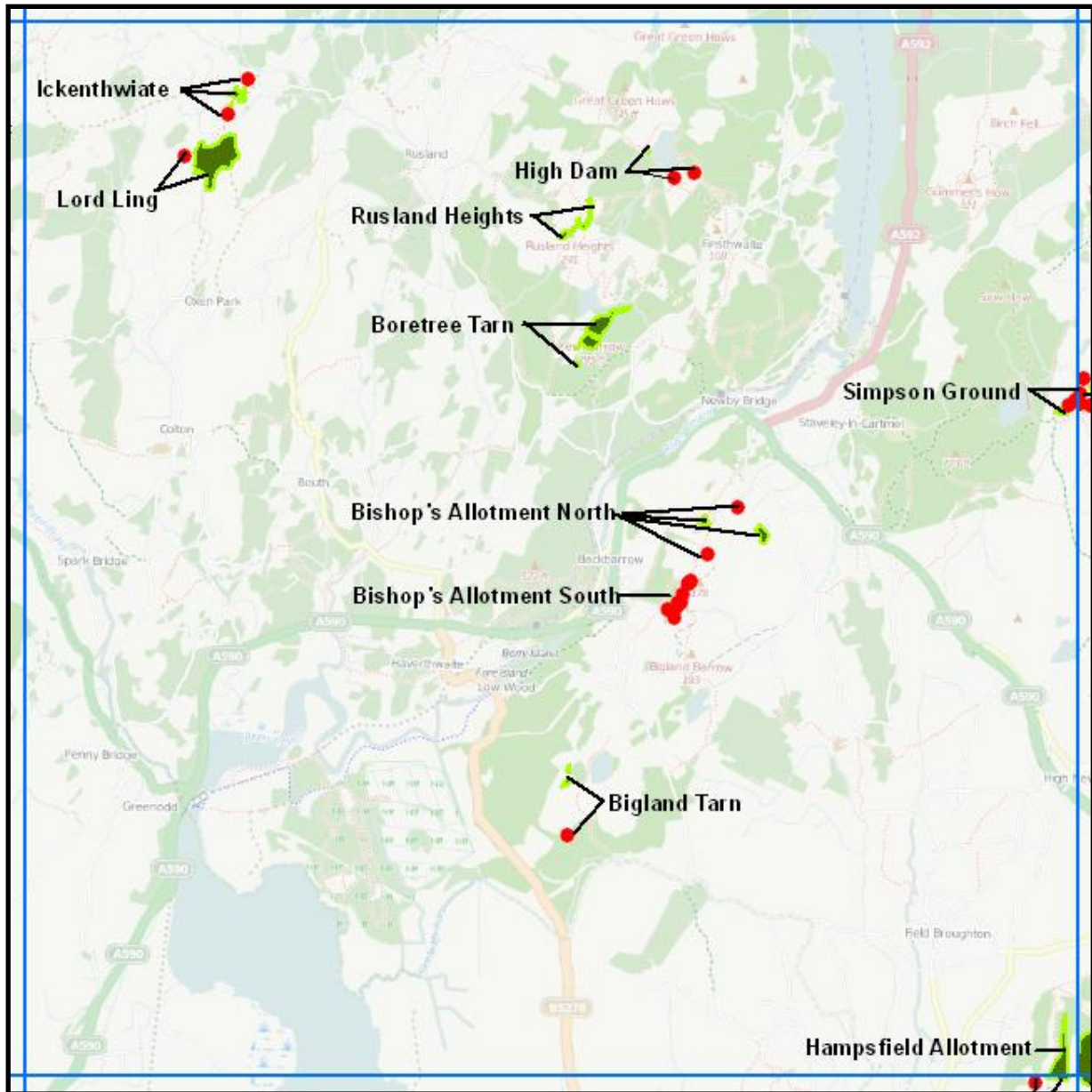
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos. NO PHOTOS TAKEN

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The general impression is that the Juniper stand once covered a wider area but that the old conifer plantation (now felled) probably shaded out a lot of Junipers & caused them to die. The highest density of Juniper is in the SE part of sub-stand B which consists largely of Limestone pavement and would not therefore have been planted with conifers. Access to parts of the Limestone pavement is difficult, hence the count for sub-stand B is not very accurate.

# SD38



## Sites List:

- |               |                          |
|---------------|--------------------------|
| Jun-SD3188-01 | Lord Ling                |
| Jun-SD3289-01 | Ickenthiate              |
| Jun-SD3582-01 | Bigland Tarn             |
| Jun-SD3587-01 | Boretree Tarn            |
| Jun-SD3588-01 | Rusland Heights          |
| Jun-SD3684-01 | Bishop's Allotment South |
| Jun-SD3688-01 | High Dam                 |
| Jun-SD3785-01 | Bishop's Allotment North |
| Jun-SD4080-01 | Hampsfield Allotment     |
| Jun-SD4086-01 | Simpson Ground           |



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: <b>Lord Ling</b>	Equiv. L. Ward site (s): <b>NONE</b>
Site Ref. Code: <b>Jun-SD3188-01</b>	Survey date: <b>29/07/2011</b>
Recorder name (s): <b>SW RK</b>	Central grid ref: <b>SD31797 88532</b>
Valley / area:	Altitude: <b>100m</b>
Aspect:	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? **YES**
- b) GPS number and track name / label? **29/07/11 2&3**
- c) Area of sub stands and total area?

Sub stand	A	B								Total
Area	<b>0.5h</b>	<b>0.9h</b>								<b>1.4h</b>
Confidence										

### 3. Plant numbers and Juniper sub-species?

#### Ssp Communis

Sub stand	A	B								Total
Count	<b>48</b>	<b>113</b>								<b>161</b>
Method										
Confidence										

### 4. Dominant Vegetation .....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<b><u>wet heath / mire</u></b>
Limestone grassland	<b><u>Bracken</u></b>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

**Sheep**                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

### 6. Other threats: No other land management affecting Juniper

**7. Juniper age: Difficult to assess seedling/young due to Bracken coverage.**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		10%	20%	20%	50%
Comments:					

**Are fruit bearing trees present? Yes / no 25%**

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed-point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
3 (with Roger)	31762	NW - N		Start of sub-stand A

**9. Comments (associated flora and fauna, survey / access difficulties?):**

**Bog Myrtle, Bell Heather and Cross-leaved Heath.**

**Sub-stand B to Sub-stand A in terms of health of trees and regeneration.**

**Restricted access due to Bracken. Suggest Sept/Oct survey re: Sub-stand C**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Ickenthwaite	Equiv. L. Ward site (s): Ickenthwaite
Site Ref. Code: Jun-SD3289-01	Survey date: 15/08/2011
Recorder name (s): PM & CM	Cent. grid ref: SD3205 8933
Valley / area: Rusland	Altitude: 110m
Aspect: SE	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map? Yes
- d) GPS number and track name / label? Ickenthwaite 1,2,3,4
- e) Area of sub stands and total area?

Sub stand	1	2	3	4	5					Total
Area	n/a	0.07	0.52	0.42	n/a					1.01Ha
Confidence	High	High	High	High	High					

### 3. Plant numbers and Juniper sub-species?

Ssp...Common.....

Sub stand	1	2	3	4	5					Total
Count	1	9	20	135	2					167
Method	Exact	Exact	Exact	Exact	Exact					
Confidence	High	High	High	High	High					

### 4. Dominant Vegetation: Acid grassland / extensive Bracken & patches of Gorse

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

**Sheep**

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Grasses were moderately grazed only.

### 6. Other threats:

### 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
0	18	30	44	6	2
Comments: No seedlings visible: several ancient trees of 40cm dia bases.					

Are fruit bearing trees present? Yes / no (26% bearing fruit)

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnified	Description of fixed point
Ickenthwaite 1	SD32009 89294	SE		View of Sub-stand 4
Ickenthwaite 2	SD32058 89378	S		Very old bush
Ickenthwaite 3	SD32085 89337	SE		Ill bush

9. Comments (associated flora and fauna, survey / access difficulties?):

Ca. 30 Juniper trees located outside of boundary – see areas & outliers marked pink on map. Stand is reasonably healthy, ca. 25% of trees fruiting but no seedlings found, poss. Due to sheep grazing.

No access or survey difficulties.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bigland Tarn	Equiv. L. Ward site (s): Bigland Tarn
Site Ref. Code: Jun-SD3582-01	Survey date: 22/04/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 3520 8285
Valley / area: Leven Valley	Altitude: 140 – 170m
Aspect: NW	Ownership: Bigland Estate

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A	B								Total
Area	0.12	0.27								0.39ha
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A	B	C							Total
Count	12	8	1							21
Method	WT	WT	WT							WT
Confidence	H	H	H							H

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other ...Roe deer.....

### Indicators of high grazing / browsing pressure?

Low pressure at present

**6. Other threats:**

Shading by tall trees

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		20%	70%	10%	
Comments: Ill trees were shaded. Only 10 – 15% of bushes were fruiting.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Sub-stand A relates to the northern most stand, Sub-stand B the central area, and Sub-stand C the single outlier to the south.

This stand exists around the boundaries of the open land where it is probably struggling to compete with tall trees and bracken. The age classes found back this up and the fact that no seedlings or young trees were found suggests that there has been no regeneration in the last 30 – 60 years.

**Restoration:**

This site, one of the southernmost in the National Park for juniper, must have held juniper for more than a century. Its proximity to a number of historical gunpowder works in the Leven Valley suggests that it may have been planted here in the past to supply the huge demand for juniper charcoal from this industry. Restoration work would therefore be worthwhile for historical / cultural reasons, as well as for the wildlife benefits that this species brings.

Very few female (berry bearing) trees were found at Bigland Tarn, so restoration work should involve planting more junipers in an attempt to improve the regeneration potential at the site. Absolute numbers will depend on the wishes of the landowner, but a minimum of sixty junipers should ensure that a sufficient number of each sex are present to encourage regeneration, and also ensure that a number of sufficiently large clumps can form to provide habitat for a number of birds and invertebrates.

These should be planted in clumps of 10, with individuals planted between 5 foot and 8 foot apart. Two groups of 30 should be planted around the highest points within the two enclosures – one at Rough Coppice and one at Bigland Heights. Select predominantly grassy areas close to rock outcrops for planting. Adjacent vegetation growth should not be too strong here; limiting the amount of weeding that will be required around planted junipers.

The type of protection required for planted trees depends upon the grazing regime at the site. If sheep are out-wintered on this area, individual tree guards or fencing will be required to prevent browsing or pulling up of seedlings. Tree guards need to be 0.9m high and at least 30cm diameter, preferably of an open mesh type to reduce the greenhouse effect on the plants.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Boretree Tarn	Equiv. L. Ward site (s): Yew Barrow noth and Sth
Site Ref. Code: Jun-SD3587-01	Survey date: 16/10/2011. Re-visited 4/06/2013 – M.D. and P.M.
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 354870
Valley / area: Finsthwaite	Altitude: 190 – 245 m
Aspect: NW and SE	Ownership:

### 2. Stand area:

d) Have you changed the boundaries of the stand on the survey map?

Yes

h) GPS number and track name / label?

i) Area of sub stands and total area?

Sub stand	1									<b>Total</b>
Area	5.56									5.56 ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm.....

Sub stand	1									<b>Total</b>
Count	675									675
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...Woodland.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other Roe deer.....

#### Indicators of high grazing / browsing pressure?

Ground flora quite dense and tall across much of the stand, with some areas dominated by tall, thick bracken. However, most heather is browsed showing light to moderate impacts, with sometimes more than two thirds of shoots removed in the

winter and with some cushion growth forms (patchy). Browsing of juniper 'moderate' overall and along the top of the ridge most bushes have had more than two thirds of last year's shoots removed during the winter / spring. Recommendations queries

**6. Other threats:** Shading by tall trees which has already killed tens of trees on the lower slopes.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
0	<5%	10	80	present	5
Comments: Large proportion of the juniper were tall at 3 – 4m. high. Only five bushes seen with berries and these showed sparse fruiting. This may be due to a combination of browsing and old age.					

**Are fruit bearing trees present?** Yes / no

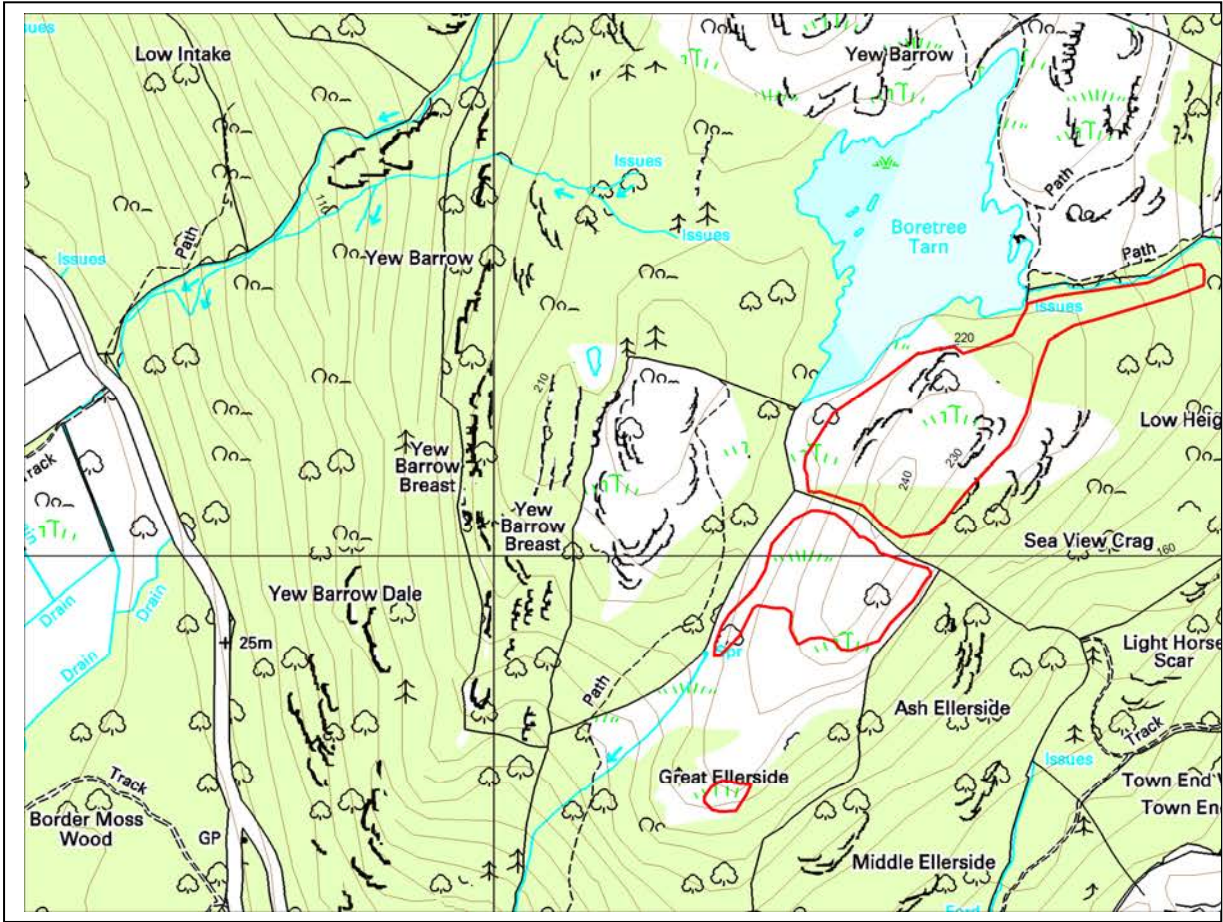
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Access is difficult due to the density of the woodland and of the juniper stand. This is especially so in the northern half of the stand. This made it impossible to measure the area of the stand accurately as the perimeter could not be easily walked. The numbers are almost certainly an underestimate due to the difficulty of access and there is probably a low density of juniper in the woodland immediately to the east of the northern sub-stand down to about 190 metres altitude. Below this altitude the woodland is very dense and no junipers are present. Tall trees include birch, oak, ash, holly, yew, sycamore, cherry, Scot's pine and larch. Tawny owl, red kite and buzzard were seen.

**Restoration:** This site is unusual in that it is suffering from shading and browsing at the same time. This is largely due to the presence of red deer as the main herbivore and this species' liking for juniper. It may be that red deer are limiting the fruiting of established bushes through their browsing, and at the same time are not grazing the ground flora enough to create regeneration niches for juniper seed. The most effective restoration management would be to introduce cattle grazing to this area in order to limit the growth of ground flora and trample bracken around juniper, and to limit succession to tall woodland. Management of red deer numbers at the same time would be essential for cattle grazing to have the desired effect however.





## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Rusland Heights	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-SD3588-01	Survey date: 14/05/2012
Recorder name (s): M Douglas, A Crowe	Cent. grid ref: SD3529 8807
Valley / area: Rusland	Altitude: 200 – 240m
Aspect: Various	Ownership:

### 2. Stand area:

- e) Have you changed the boundaries of the stand on the survey map?  
N / A
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.92									1.92
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>200</b>									<b>200</b>
Method	<b>WT</b>									<b>WT</b>
Confidence	<b>M</b>									<b>M</b>

### 4. Dominant Vegetation ...dry heath.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Sheep have been off-wintered for around ten years, and DSH in good condition, but most juniper browsed by red deer, more heavily at the south end. Bushes have obviously developed in conditions with less red deer pressure, but have later been more heavily browsed as numbers have increased.

**6. Other threats:**

Shading of a few trees at the south end

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	Present		
Comments: Dominated by old trees but substantial numbers of mature juniper too. Deer browsing inhibiting fruiting in some trees.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3588-01A				Collapsed, deer browsed juniper
Jun-SD3588-01B				Close up of deer browsed shoots

**9. Comments (associated flora and fauna, survey / access difficulties?):**

R. Crowe aims to plant between 600 and 1000 junipers around the existing stand under HLS.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Bishop's Allotment	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-SD3684-01	Survey date: 08/09/2011
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 3620 8449
Valley / area: Leven Valley	Altitude: 115 – 140 m
Aspect: W / SW	Ownership:

**2. Stand area:**

- f) Have you changed the boundaries of the stand on the survey map?  
Newly plotted juniper.
- l) GPS number and track name / label?
  
- m) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										N / A
Confidence										

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A									<b>Total</b>
Count	19									19
Method	WT									WT
Confidence	H									H

**4. Dominant Vegetation ...Woodland.....**

**Other vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | <u>wet heath / mire</u>   |
| Limestone grassland | <u>Bracken</u>            |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other Roe Deer.....

**Indicators of high grazing / browsing pressure?**

Low grazing pressure from deer alone at present. Distribution of juniper in wet areas may suggest heavy browsing / grazing in the past?

**6. Other threats:**

Most bushes shaded by willow / birch.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	present	present	
Comments:					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

## 9. Comments (associated flora and fauna, survey / access difficulties?):

2 red kites and 1 adder seen. Birch, willow and oak dominate the area where the juniper is found.

This is probably a small remnant population from a once bigger stand, which is now struggling to compete with taller growing trees.

Restoration:

It appears that this stand may have been affected by grazing in the past, with many of the junipers being found in sub-optimal areas in wet ground, perhaps regenerating here away from livestock. This has now been reversed and low levels of grazing are allowing succession to tall trees which are shading out the juniper. No juniper seedlings or young trees were found, and with only 4 berry bearing bushes present the potential for regeneration may be low.

The proximity of this stand to a number of historical gunpowder works in the Leven Valley suggests that it may have been planted here in the past to supply the huge demand for juniper charcoal from this industry. Restoration work would therefore be worthwhile for historical / cultural reasons, as well as for the wildlife benefits that this species brings.

Juniper planting would therefore be a good option for this site. Absolute numbers will depend on the wishes of the landowner, but a minimum of sixty junipers should ensure that a sufficient number of each sex are present to encourage regeneration, and also ensure that a number of sufficiently large clumps can form to provide habitat for a number of birds and invertebrates.

These should be planted in clumps of 10, with individuals planted between 4 foot and 8 foot apart. Junipers should be planted around the highest ground within the enclosure, away from most of the tall trees. Selection of predominantly grassy areas close to rock outcrops should limit the amount of weeding that will be required, as low growing grasses are less likely to out-compete seedling junipers.

The type of protection required for planted trees depends upon the grazing regime at the site. If sheep are out-wintered on this area, individual tree guards or fencing will be required to prevent browsing or pulling up of seedlings. Tree guards need to be 0.9m high and at least 30cm diameter, preferably of an open mesh type to reduce the greenhouse effect on the plants. The presence of the boundary wall running along the ridge of high ground could allow the construction of a relatively inexpensive enclosure adjacent to this feature.



**Four sub-sites previously recorded now have no Juniper.**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		30%	15%	50%	5%
Comments: Most trees had areas of brown leaves & generally scanty leaf cover.					

**Are fruit bearing trees present?** Yes (1 tree) / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
High Dam 25-1	SD36156 88538	E		Group of 4 ill trees in sub-stand 25
High Dam 25-2	SD36167 88540	E		1 dying tree in sub-stand 25
High Dam 30-1	SD35931 88757	N		Relatively healthy tree in sub-stand 30
High Dam 30-2	SD35930 88764	W		Tree in sub-stand 30

**9. Comments (associated flora and fauna, survey / access difficulties?):**

In general, all the sub-stands were overshadowed by large trees which appear to have grown up since Ward's survey. Grazing pressure was very low so it seems probable that the poor condition of this stand is mainly due to competition for light with larger trees. The 'best' sub-stand (no. 30) was shaded on its north side but open to the sun on its south side (mire with Bog Myrtle). Most areas were very boggy (2,25,30) with extensive Larch, Birch, Alder etc. Areas 1,3 & 4 were drier with extensive Oak, Holly & Birch. Access is generally good but very boggy in most places.

Although the area of sub-stand 25 was not considered possible for measurement, the location of the trees was as follows:-

- SD36108 88526 – 1 tree nearly dead <5cm
- SD36133 88566 – 1 tree ill, 5 – 10cm
- SD36103 88530 – 1 tree, nearly dead, <5cm
- SD36168 88538 – 4 trees, all ill, 5 – 10cm
- SD36149 88565 – 3 trees, all ill, 5 – 10cm
- SD36128 88505 – 1 tree<5cm
- SD36103 88569 – 4 ill trees, 5 – 10cm
- SD36181 88540 – 1 tree, nearly dead
- SD36146 88521 – 1 tree, ill, <5cm
- SD 36137 88540 – 1 fruiting tree <5cm

No Juniper were found under Larch plantation and only some under Alder/Birch. The only sub-stand doing reasonably well was not shaded at all on its southern side.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bishop's Allotment North	Equiv. L. Ward site (s):
Site Ref. code: SD3785-01	Survey date: 17/04/2012
Recorder name (s): P Matthiessen	Cent. grid ref: SD367 852
Valley / area: Leven valley	Altitude: 110 – 120m
Aspect: NW	Ownership:

### 2. Stand area:

- h) Have you changed the boundaries of the stand on the survey map? NO
- p) GPS number and track name / label? Old Back A / Old Back B GPS no.5
- q) Area of sub stands and total area?

Sub stand	A	B								Total
Area	8498	16953								25451m <sup>2</sup>
Confidence	HIGH	HIGH								HIGH

### 3. Plant numbers and Juniper sub-species?

Ssp... J communis

Sub stand	A	B		C outlier	D outlier					Total
Count	10	29		2	4					45
Method	Walk-through	Walk-through								
Confidence	HIGH	HIGH		HIGH	HIGH					

### 4. Dominant Habitat / Vegetation. Acid grassland

#### Other habitats / vegetation types present:

acid grassland	<u>wet grassland</u> / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer

### Indicators of high grazing / browsing pressure?

**6. Other threats: None obvious – seems fairly low**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		50	50	5	
Comments: Almost all in good condition					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

**This stand lies immediately to the north of the small stand on Bishop's Allotment recorded by P Matthiessen in 2011. It is, however, distinct from the latter.**

**It is noteworthy that most of the Juniper in the present survey were growing in the open away from standing trees. The few Juniper in poor condition were, in fact, shaded by Willow trees.**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hampsfield allotment	Equiv. L. Ward site (s): Hampsfield Allotment SW, NW, NE, SE
Site Ref. Code: Jun-SD4080-01	Survey date: 02/01/2012
Recorder name (s): P&C Matthiessen	Cent. grid ref: SD400-802
Valley / area: Field Broughton/Carmel	Altitude: 130 – 190m
Aspect: NE/NW	Ownership:

### 2. Stand area:

- i) Have you changed the boundaries of the stand on the survey map? No
- r) GPS number and track name / label? No tracks recorded
- s) Area of sub stands and total area?

Sub stand	A	B								Total
Area	4.5	10.8								15.3Ha
Confidence	Med	Med								

### 3. Plant numbers and Juniper sub-species?

**Ssp...**Common Juniper

Sub stand	A	B							Total
Count	78	300-400							378-478
Method	Direct	Direct							VP
Confidence	High	Medium							Medium

### 4. Dominant Vegetation ...Limestone Grassland & Ash/Holly open woodland

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer

#### Indicators of high grazing / browsing pressure?

Medium grazing pressure from deer.

**6. Other threats:** Most of the area was covered by Conifer plantation until about 7 years ago, when it was clear-felled.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		80%	10%	15%	
Comments: Die-back occurring where exposed to prevailing wind.					

**Are fruit bearing trees present?** Yes / no (approx. 15%)

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos. NO PHOTOS TAKEN

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The general impression is that the Juniper stand once covered a wider area but that the old conifer plantation (now felled) probably shaded out a lot of Junipers & caused them to die. The highest density of Juniper is in the SE part of sub-stand B which consists largely of Limestone pavement and would not therefore have been planted with conifers.

Access to parts of the Limestone pavement is difficult, hence the count for sub-stand B is not very accurate.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Simpson Ground	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD4086-01	Survey date: 05/09/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD4004 8648
Valley / area: South Lakes	Altitude: 170m – 180m.
Aspect: Various	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
N / A
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G	H		Total
Area										
Confidence	4	5	5	5	5	5	4	5		4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C	D	E	F	G	H		Total
Count	21	2	1	5	1	1	5	2		38
Method										WT
Confidence	h	h	h	h	h	h	h	h		h

### 4. Dominant Vegetation ...Acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Almost all junipers browsed, most showing moderate to heavy browsing impacts. Height, extent and depth of browsing all suggest red deer browsing. Impacts on heather also point to frequent browsing by red deer.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
4	1	3	25		5
Comments: Some very old juniper but numerous berry bearing trees and some recent regen.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4086-01A				Overview of Area A.

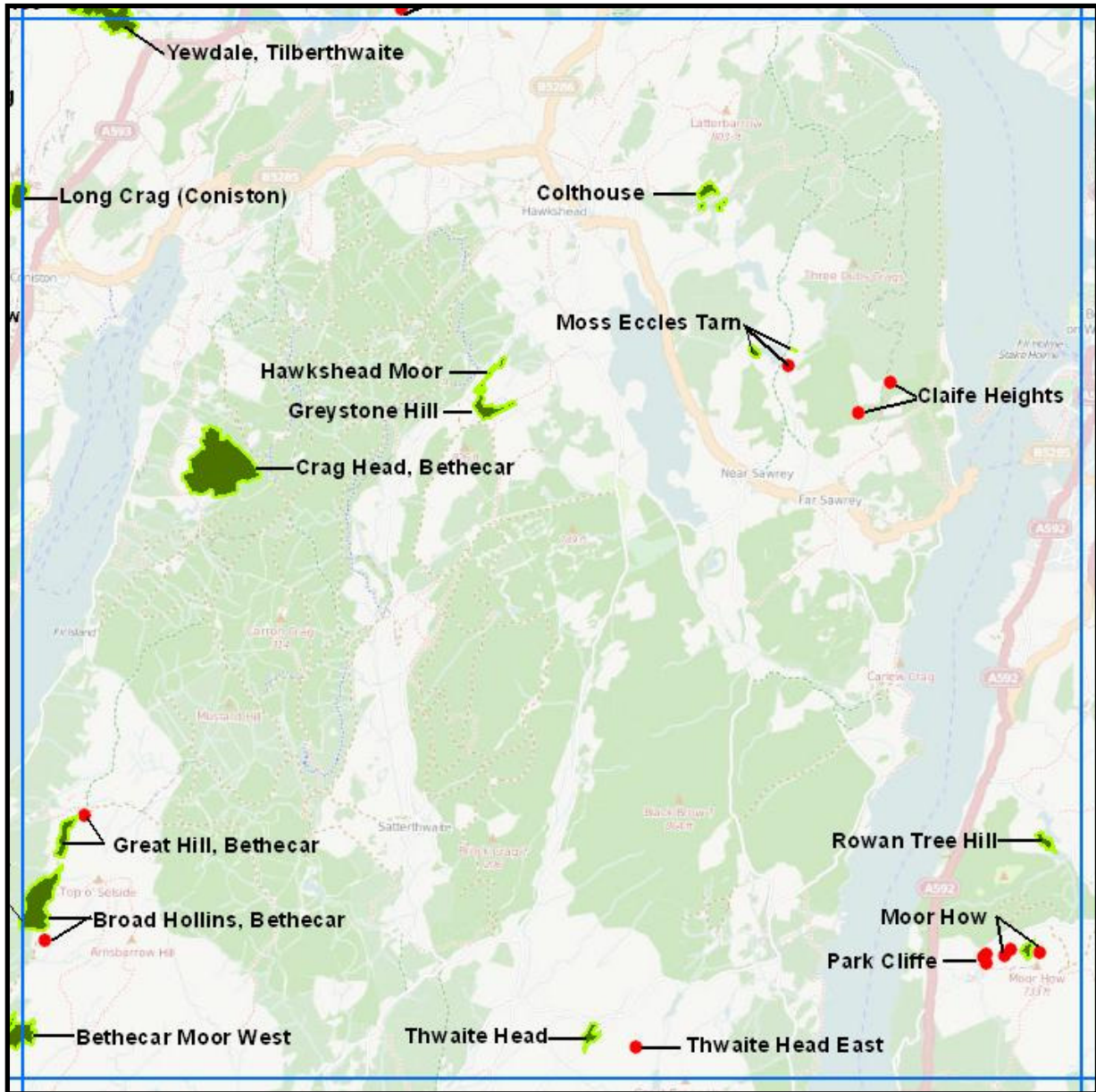
**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper is scattered across a large area at this site and is mostly composed of old trees. Although 4 seedlings and one young juniper were found, the browsing on these and other bushes suggests that they might struggle to establish under current conditions. Numerous trees at this allotment include ash, rowan, holly, grey willow, birch and eared willow (1 individual found at SD 39984 86514).

Red deer may be visiting the site frequently and could be an obstacle to plans to plant juniper in the near future.



# SD39



## Sites List:

ExJ-SD3896-01	Claife Heights	Jun-SD3590-02	Thwaite Head East
ExJ-SD3991-02	Park Cliffe	Jun-SD3696-01	Moss Eccles Tarn
Jun-NY3000-03	Yewdale, Tilberthwaite	Jun-SD3698-01	Colthouse
Jun-SD2990-01	Bethecar Moor West	Jun-SD3991-01	Moor How
Jun-SD2998-01	Long Crag (Coniston)	Jun-SD3992-01	Rowan Tree Hill
Jun-SD3091-01	Broad Hollins, Bethecar		
Jun-SD3092-01	Great Hill, Bethecar		
Jun-SD3195-01	Crag Head, Bethecar		
Jun-SD3406-02	Hawkshead Moor		
Jun-SD3496-01	Greystone Hill		
Jun-SD3590-01	Thwaite Head		



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Yewdale, Tilberthwaite	Equiv. L. Ward site (s): Beck Yewdale Tot
Site Ref. code: Jun-NY3000-03	Survey date: 16/01/2013
Recorder name (s): M. Douglas	Cent. grid ref: NY30710 00200
Valley / area: Tilberthwaite	Altitude: 180m to 320m
Aspect: Various	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A	B								Total
Area										25.77ha
Confidence	4	4								4

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A	B								Total
Count	1826	2563								4389
Method	VP photo	VP photo								VP photo
Confidence	L	L								L

### 4. Dominant Habitat / Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	Bracken
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

Every third juniper browsed, and browse lined and pruned juniper easy to find.

### 6. Other threats:

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	present	X	present
Comments:					

Are fruit bearing trees present? Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY3000-03A	NY31267 00362	218 degrees		Overview of southern half of stand, taken from Raven Crag, 07/05/2013
Jun-NY3000-03B	NY31267 00362	273 degrees		Overview of southern half of stand, taken from Raven Crag, 07/05/2013
Jun-NY3000-03C				Sheep pruned juniper, 16/01/2013

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Numerous tall trees included birch, holly, rowan, hawthorn, ash, oak and sycamore. The stand shows signs of chronic high grazing impacts, with numerous browse lined bushes and a lack of regeneration in recent decades.

Paired soil samples were taken at the northern end of the stand in early 2013, one of a pair from underneath a juniper canopy, and the other on open grassland close by. These were analysed by Sue Ward of Lancaster University. The results are shown below and although the expected differences in soil nitrogen and carbon were thrown up, these weren't statistically significant. More samples would need to be taken from more different sites to illustrate (or disprove) junipers role as a soil builder.

Soil samples, 2013		Soil % C	Soil % N	Soil C:N ratio	Soil pH	Soil % Moisture
<b>Under Juniper</b>	Mean	26.31	1.66	15.78	4.08	34.06
	Standard Deviation	9.32	0.57	0.29	0.89	15.18
<b>Matching control site</b>	Mean	18.06	1.42	12.78	4.60	47.96
	Standard Deviation	6.45	0.49	1.10	0.77	20.44



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Bethocar Moor West	Equiv. L. Ward site (s): Bethocar Moor West
Site Ref. Code: Jun-SD2990-01	Survey date: 09/05/2012
Recorder name (s): M Douglas	Cent. grid ref: SD2989 9040
Valley / area: Coniston	Altitude: 130m - 210m
Aspect: 280 degrees	Ownership

**2. Stand area:**

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										9.22ha
Confidence										5

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm.....**

Sub stand	A	B	C							<b>Total</b>
Count	480	308	300							1088
Method	VP	WT	VP							VP
Confidence	M	H	M							H

**4. Dominant Vegetation ...Bracken.....**

**Other habitats / vegetation types present:**

- |                       |                               |
|-----------------------|-------------------------------|
| <u>acid grassland</u> | <u>wet grassland / rushes</u> |
| <u>dry heath</u>      | <u>wet heath / mire</u>       |
| Limestone grassland   | Bracken                       |
| Scree                 | <u>Outcrop / cliff</u>        |
| Limestone scree       | Limestone outcrop / cliff     |
| Woodland              |                               |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other Roe deer.....

**Indicators of high grazing / browsing pressure?**

Where present leggy old Calluna has not been browsed since last year, bracken litter layer is barely trampled and sedge rich flushes have not been grazed, all suggesting

that sheep have not been outwintered. Some autumn / winter browsing of bilberry and holly though.

**6. Other threats:**

Sycamore and young spruce present amongst juniper – could lead to shading in the long term.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	Present
Comments: Dominated by old and mature juniper					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD2990-01A				From track up to SE corner of plantation.
Jun-SD2990-01B				From upper boundary of stand looking to SW corner of plantation
Jun-SD2990-01C				From upper boundary of site looking west over southern sub-stand.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Singing birds: stonechat (1), yellowhammer (1), whitethroat (3), redpoll, garden warbler (1), willow warbler, dunnock, wren, chaffinch, cuckoo (>2), tree pipit (4) and wryneck! The latter mobbed by redpoll and other birds and still present on 11/05/2011. Buzzard, peregrine and red kite overhead. Green tiger beetle and green hairstreak at upper boundary of stand.

Trees: Ash, oak, rowan, holly, yew, hawthorn, blackthorn, birch, gorse and sycamore. Mosaic of habitats seem to be regenerating after past heavy grazing. Perhaps few niches for juniper regeneration though.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Long Crag (Coniston)	Equiv. L. Ward site (s):
Site Ref. Code: Jun-SD2998-01	Survey date: 20/10/11
Recorder name (s): M. Douglas, A. Crowe	Cent. grid ref: SD 29816 98335
Valley / area: Coniston	Altitude: 180m – 360m
Aspect: S / SE	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
Long Crag A and B
- g) Area of sub stands and total area?

Sub stand	A	B								Total
Area	6.9	3.3								10.2
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp comm.....

Sub stand	A	B								Total
Count	1311	845								2156
Method	VP	Photo								VP / photo
Confidence	M	M								M

### 4. Dominant Vegetation: Acid grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
<u>Scree</u>	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Grassland dominated by *Nardus stricta* and DSH only present on inaccessible crags. Some juniper shoots browsed but evidence of more severe browsing during previous winters.

**6. Other threats: Few sycamore present but no sign of recent regeneration.**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	None seen	present
Comments: Majority of trees are old and only five seedlings found.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photos filed at: T:\Images\Projects\Wider Countryside\Juniper project\Coniston Coppermines area\Long Crag, Coniston

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
2011-10-21-002jpg	SD 30167 97724	317°		Overview of stand from Ruskin Museum

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Associated trees: hawthorn, gorse, rowan, oak and sycamore.

Heavily grazed area with few opportunities for juniper regeneration. Winter grazing / browsing appears to be a problem.

Restoration:

This site appears to be heavily stocked with sheep and / or winter grazed. Despite the difficult terrain, there are few seedlings present, and the predominance of old trees suggests that grazing regimes / stocking rates have not allowed regeneration for many decades.

The health and regeneration of juniper here will require reductions in sheep stocking rate, and more off-wintering of livestock. The presence of a handful of seedlings at the site suggests that the stand will regenerate given the correct grazing regime.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Broad Hollins, Bethocar	Equiv. L. Ward site (s): Broad Hollins
Site Ref. Code: Jun-SD3091-01	Survey date: 09/07/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD30130 91610
Valley / area: Coniston	Altitude: 100m – 220m
Aspect: 100 degrees	Ownership:

### 2. Stand area:

d) Have you changed the boundaries of the stand on the survey map?

Yes

h) GPS number and track name / label?

N / A

i) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	11.91									11.91
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	523									523
Method	VP photo									VP Photo
Confidence	M									M

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other .....

#### Indicators of high grazing / browsing pressure?

Almost all accessible junipers browsed, some severely, with more than two-thirds of last year's shoots removed. Some browse lining and topiary as a result and one example of bark stripping found. No obvious signs of red deer browsing found.

## 6. Other threats:

Shading – further down slope junipers dying as a result of shading. Shade bearing trees such as yew and sycamore present.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	>80%	present	present
Comments: Two young trees present.					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3091-01A	SD29110 91170	60 degrees		View of stand from across the lake.
Jun-SD3091-01B				Sheep browse line on juniper.
Jun-SD3091-01C				Bark stripping at around 1 metre height.

## 9. Comments (associated flora and fauna, survey / access difficulties?):

Ash, rowan, yew, holly, hazel, birch and sycamore present. Winter grazing appears to be a problem at this site given the shoot removal on junipers. Junipers dying downslope due to shading by tall trees.

## Comparison with L. Ward data:

The L. Ward survey of 1973 estimated that there were 2100 junipers at this site. This suggests a decline of 1577 bushes, or 75%, over a forty year period. The earlier survey found that all age classes of juniper were present, though the vast majority were old trees, so the decline may have already begun in the 1970's. The Uplands for Juniper Survey estimated that more than 80% of junipers were old, and did not reveal any seedlings and found only two young trees.

## Restoration:

Recent efforts have been made to restore the stand through the planting of 450 (?) seedling junipers. A quick transect of forty trees and protectors revealed that 30% (12 trees) had either been pushed over and browsed back hard, or had disappeared amongst strong growth of grasses or bracken.

The extent and severity of browsing on established trees at this site suggests that planted seedlings will struggle to establish themselves given current grazing regimes.

The priority for the restoration of this SSSI juniper stand is therefore to reduce the impact of sheep on and around this site. The key period for the browsing of juniper is outside the growing season, particularly during the winter and into the early spring period before more palatable species have started to grow. Livestock numbers either need to be reduced or sheep need to be shepherded away from the juniper during this key period. This should prompt natural regeneration, but it should also be a precursor to planting, and to the removal of guards from existing planted seedlings.

**Planting:**

The level of protection required by planted juniper will depend upon livestock densities and grazing periods around Broad Hollins. Protecting a proportion of planted trees with individual protectors may be required even after the manipulation of stocking densities. Junipers planted in clumps of between ten and fifty trees, with individuals 1.5 m to 3 m apart, should coalesce as they grow to form self-protecting thickets, with more value for invertebrates and feeding and nesting birds than scattered, individual bushes. Carefully selected planting areas should help to strengthen and link existing juniper stands within the common. See the attached map for suggestions of planting locations. These were selected due to their relatively high altitude, relative position to existing stands and ease of maintenance. The proposed areas will also avoid important habitats such as dry heath, wet flushes and mires.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Great Hill	Equiv. L. Ward site (s): Great Hill
Site Ref. Code: Jun-SD3092-01	Survey date: 09/07/2012
Recorder name (s): Mike Douglas	Cent. grid ref: SD 3039 9229
Valley / area: Bethecar Moor	Altitude: 140m – 200m
Aspect: 100 degrees	Ownership:

### 2. Stand area:

- e) Have you changed the boundaries of the stand on the survey map?  
Yes
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.3									
Confidence	5									

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	130									130
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...Bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Browsing easy to find on majority of accessible junipers. Very little DSH present.

**6. Other threats:** Some shading by tall trees.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	present	present	X	Present
Comments: > 95% old					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3092-01A	NY 30402 92161	348 degrees	N / A	Photo of sparse old junipers with neighbouring tall trees.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Ash, rowan, holly, yew, birch, sycamore and hazel present. Most junipers very old. No signs of regeneration in recent decades.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Crag Head	Equiv. L. Ward site (s): Crag Head
Site Ref. Code: Jun-SD3195-01	Survey date: 15/05/2012
Recorder name (s): H. Corton, P. Howlett	Cent. grid ref: SD 318957
Valley / area: Coniston	Altitude: 160 – 210m
Aspect: various	Ownership:

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
Yes
- l) GPS number and track name / label?  
N / A
- m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	28.43									28.43ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>336</b>									<b>336</b>
Method	<b>WT</b>									<b>WT</b>
Confidence	<b>M</b>									<b>M</b>

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

None

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		20%	75%		5%
Comments: Dead / dying bushes seemed to be old rather than ill.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Green hairstreak butterflies, meadow pipits, willow warblers and lousewort recorded. Most of the junipers were around the periphery of the area or around wet depressions. A small number of mature Rhododendrons were present, others have already been cleared.

**Restoration:**

Current conditions are not favourable for juniper regeneration, with no new junipers establishing themselves within the last thirty years. Before this, regeneration may have been limited to sub-optimal, wet areas, which would have been accessed less often by sheep.

Substantial numbers of junipers remain however, and the easiest restoration option may be to create conditions where existing bushes can start to regenerate. Currently, dense ground flora or dense bracken litter layers may be limiting the opportunities for seed germination, and tall bracken will be slowing the growth of juniper seedlings, potentially preventing establishment. Sheep grazing at the end of the winter may also mean that young seedlings are grazed or pulled up before they can become established. Although a number of different grazing options may be favourable for juniper, winter sheep grazing is always likely to be detrimental. Summer or autumn sheep grazing would be better options as would the introduction of cattle. The latter would help thin out the bracken, break up the litter layer, and reduce the dominance of tussock grasses in other areas.

Bracken control would also be beneficial, as an addition to changes in grazing or as an alternative. Spraying / cutting around female junipers should be prioritised to encourage natural regeneration of existing trees.

An additional option at this stand would be to plant juniper seedlings to provide the equivalent of a burst of regeneration in areas ideal for juniper growth. These would be in relatively dry areas, perhaps where bracken control work has taken place, and at higher altitudes away from substantial growth of trees. This could be done without the use of tree guards if the grazing regime was suitable (no winter sheep grazing), but if not, the juniper seedlings would need to be fenced or protected by individual mesh protectors. Planting in clumps of ten to thirty plants, at spacing's of 4 to 8 foot between each juniper, would allow junipers to coalesce as they grow, forming self-protecting thickets of relatively high value to birds and invertebrates.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Greystoke Hill	Equiv. L. Ward site (s): Hawkshead Moor South
Site Ref. Code: Jun-SD3496-01	Survey date: 17/10/2012
Recorder name (s): Janet Ashton	Cent. grid ref: SD344 964
Valley / area: Hawkshead	Altitude: 200 – 210m
Aspect: Various	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
Yes
- n) GPS number and track name / label?
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.67									3.67ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	464									464
Method	VP									VP
Confidence	H									H

### 4. Dominant Vegetation ...wet heath / mire.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Cattle pats show that cattle had recently grazed the plot, but tall grass growth, lack of poaching and degree of flowering in *Succisa pratensis* suggests that cattle rarely enter the wet heath where the juniper is found.

**6. Other threats:** Spread of larch and spruce from adjacent plantation.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	10%	60%	30%	X	Present
Comments: Only a few bushes with withered berries.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3496-01A	SD3442 9647	265 degrees		From top of Greystone Hill
Jun-SD3496-01B	SD3442 9647	180 degrees		From top of Greystone Hill
Jun-SD3496-01C	SD3442 9647	165 degrees		From top of Greystone Hill

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Larch, spruce, birch and holly present. The stand seems to be dominated by old junipers with little reproductive potential.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Thwaite Head	Equiv. L. Ward site (s): Thwaite Head Woods
Site Ref. Code: Jun-SD3590-01	Survey date: 14/05/2012
Recorder name (s): M Douglas, A Crowe	Cent. grid ref: SD 353 904
Valley / area: Rusland	Altitude: 70 m
Aspect: Various	Ownership:

### 2. Stand area:

h) Have you changed the boundaries of the stand on the survey map?

Yes

p) GPS number and track name / label?

q) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.96									1.96
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>100</b>									<b>100</b>
Method	<b>WT</b>									<b>WT</b>
Confidence	<b>M</b>									<b>M</b>

### 4. Dominant Vegetation .....woodland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other cattle or ponies

prints but none at present

#### Indicators of high grazing / browsing pressure?

**None**

**6. Other threats:** Nearly all junipers shaded. Some dying due to increased soil wetness.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present	present		present
Comments: Around 50% of counted trees are dead					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD3590-01A				Shaded juniper
Jun-SD3590-01B				Tall juniper growing amongst alder and birch woodland
Jun-SD3590-01C				Senescing juniper in wet woodland

**9. Comments (associated flora and fauna, survey / access difficulties?):**

It looks like the alder / birch woodland started to develop around 30 years ago and this is now shading out nearly all of the junipers on site. Some junipers have also died as a result of increased soil wetness which has coincided with development of the woodland.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Thwaite Head East	Equiv. L. Ward site (s): Thwaite Head, Little Green Hows
Site Ref. Code: Jun-SD3590-02	Survey date: 14/05/2012
Recorder name (s): M. Douglas, A. Crowe	Cent. grid ref: SD 358 903
Valley / area: Rusland	Altitude: 150m.
Aspect:	Ownership:

**2. Stand area:**

- i) Have you changed the boundaries of the stand on the survey map?  
Yes
- r) GPS number and track name / label?
- s) Area of sub stands and total area?

Sub stand										<b>Total</b>
Area										
Confidence										

**3. Plant numbers and Juniper sub-species?                      Ssp.....**

Sub stand	<b>A</b>									<b>Total</b>
Count	<b>1</b>									<b>1</b>
Method	<b>VP</b>									<b>VP</b>
Confidence	<b>H</b>									<b>H</b>

**4. Dominant Vegetation ...Acid grass.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| <u>dry heath</u>    | wet heath / mire          |
| Limestone grassland | Bracken                   |
| Scree               | Outcrop / cliff           |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

Site recently deer fenced so no herbivores present

**6. Other threats:** Shading in the long term – tree regeneration looks good since recent fencing.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		present			
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Difficult to access this site as it has recently been deer fenced. Spotted single juniper through fence so position approximate.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Moss Eccles Tarn	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD3696-01	Survey date: 29/09/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 3690 9686
Valley / area: Grisedale	Altitude: 160m – 170m
Aspect: Various	Ownership:

### 2. Stand area:

- j) Have you changed the boundaries of the stand on the survey map?  
N / A
- t) GPS number and track name / label?  
N / A
- u) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area	-	-	-							0.74
Confidence	4	4	4							4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C							Total
Count	11	13	5							29
Method	WT	WT	WT							WT
Confidence	H	H	H							H

### 4. Dominant Vegetation ...acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	X	90%	X	10%
Comments: 10% fruiting					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Colthouse	Equiv. L. Ward site (s): Colthouse Above
Site Ref. code: Jun-SD3698-01	Survey date: 29/09/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 3648 9838
Valley / area: Esthwaite	Altitude: 170 – 200m
Aspect: 225 degrees	Ownership:

### 2. Stand area:

- k) Have you changed the boundaries of the stand on the survey map?  
Yes
- v) GPS number and track name / label?  
N / A
- w) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area	0.43	1.59	0.27							2.29
Confidence	5	5	5							5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C							Total
Count	82	120	28							230
Method	WT	WT	WT							WT
Confidence	H	M	H							H

### 4. Dominant Vegetation ...Acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

The area is deer fenced now but the suppressed growth forms of some of the mature bushes suggest that grazing was higher in the past.

**6. Other threats:** Shading

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	25%	65%	5%	5%
Comments: Up to 40% of bushes are fruit bearing.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Substand A is the south eastern-most patch of juniper and is in the poorest condition due to shading by taller trees. Substand B is the larger, northern-most patch with the majority of the juniper.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Moor How	Equiv. L. Ward site (s): Moor How
Site code: Jun-SD3991-01	Survey date: 11/09/2012
Recorder name (s): H. Corton, P. Howlett	Cent. grid ref: SD 339490491220
Valley / area: Windermere	Altitude: 130 – 200m
Aspect: various	Ownership:

### 2. Stand area:

- l) Have you changed the boundaries of the stand on the survey map?  
Yes
- x) GPS number and track name / label?  
N/A
- y) Area of sub stands and total area?

Sub stand	A	B	C	D						Total
Area	1.21									1.21
Confidence	5	5	5	5						5

### 3. Plant numbers and Juniper sub-species?

Ssp... comm.....

Sub stand	A	B	C	D						Total
Count	22	1	1	1						25
Method	WT	WT	WT	WT						WT
Confidence	H	H	H	H						H

### 4. Dominant Vegetation ...bracken.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	<u>wet grassland / rushes</u>
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		20%	80%	present	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Barn owl and green woodpecker present.



**Uplands for Juniper Project – Survey Form**

**1. Site details**

Site Name: Rowan Tree Hill	Equiv. L. Ward site (s): Rowan Tree Hill
Site code: Jun-SD3992-01	Survey date: 11/09/2012
Recorder name (s): H. Corton and P. Howlett	Cent. grid ref: SD339661 492236
Valley / area: Windermere	Altitude: 130 – 150m
Aspect: 80 degrees	Ownership:

**2. Stand area:**

- m) Have you changed the boundaries of the stand on the survey map?  
Yes
- z) GPS number and track name / label?  
N/A
- aa) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	1.46									1.46
Confidence	5									5

**3. Plant numbers and Juniper sub-species?**

**Ssp...comm .....**

Sub stand	A									<b>Total</b>
Count	23									23
Method	WT									WT
Confidence	H									H

**4. Dominant Vegetation ...wet grassland and rushes.....**

**Other habitats / vegetation types present:**

- |                     |                           |
|---------------------|---------------------------|
| acid grassland      | wet grassland / rushes    |
| dry heath           | wet heath / mire          |
| Limestone grassland | <u>Bracken</u>            |
| Scree               | <u>Outcrop / cliff</u>    |
| Limestone scree     | Limestone outcrop / cliff |
| Woodland            |                           |

**5. Grazing / browsing (circle appropriate grazing animal)?**

Sheep                      Cattle                      Red Deer                      Other .....

**Indicators of high grazing / browsing pressure?**

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	20%	80%	present	Present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Hawthorn present, tall bracken

# SD47



## Sites List:

ExJ-SD4476-01	Far Arnside
Jun-SD4080-01	Hampsfield Allotment
Jun-SD4477-01	Arnside Copriding
Jun-SD4576-01	Middlebarrow
Jun-SD4577-01	Arnside Knott A
Jun-SD4577-02	Arnside Knott B
Jun-SD4878-01	Beetham Fell
Jun-SD4978-01	Deepdale Wood



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hampsfield allotment	Equiv. L. Ward site (s): Hampsfield Allotment SW, NW, NE, SE
Site Ref. Code: Jun-SD4080-01	Survey date: 02/01/2012
Recorder name (s): P&C Matthiessen	Cent. grid ref: SD400-802
Valley / area: Field Broughton/Carmel	Altitude: 130 – 190m
Aspect: NE/NW	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? No
- b) GPS number and track name / label? No tracks recorded
- c) Area of sub stands and total area?

Sub stand	A	B								Total
Area	4.5	10.8								15.3Ha
Confidence	Med	Med								

### 3. Plant numbers and Juniper sub-species?

**Ssp...**Common Juniper

Sub stand	A	B							Total
Count	78	300-400							378-478
Method	Direct	Direct							VP
Confidence	High	Medium							Medium

### 4. Dominant Vegetation ...Limestone Grassland & Ash/Holly open woodland

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer

#### Indicators of high grazing / browsing pressure?

Medium grazing pressure from deer.

**6. Other threats:** Most of the area was covered by Conifer plantation until about 7 years ago, when it was clear-felled.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		80%	10%	15%	
Comments: Die-back occurring where exposed to prevailing wind.					

**Are fruit bearing trees present?** Yes / no (approx. 15%)

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos. NO PHOTOS TAKEN

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The general impression is that the Juniper stand once covered a wider area but that the old conifer plantation (now felled) probably shaded out a lot of Junipers & caused them to die. The highest density of Juniper is in the SE part of sub-stand B which consists largely of Limestone pavement and would not therefore have been planted with conifers. Access to parts of the Limestone pavement is difficult, hence the count for sub-stand B is not very accurate.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Arnside Copriding	Equiv. L. Ward site (s): Arnside Copriding
Site Ref. code: Jun-SD4477-01	Survey date: 30/08/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 4480 7727
Valley / area: Arnside	Altitude: 60m – 80m
Aspect: 310 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	3.46									3.46ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm .....

Sub stand	A									<b>Total</b>
Count	262									262
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...Limestone grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer.....

#### Indicators of high grazing / browsing pressure?

Appears to be low impact cattle grazing.

### 6. Other threats:

Shading, but some coppicing completed recently.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	<5%	55%	35%	X	<10%
Comments: Some older trees very tall. More than 50% fruiting					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4477-01A	SD448774	W - SW		Very tall juniper

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Although no seedlings were found this stand appears to be in reasonable condition, and recent coppicing and felling work may encourage some natural regeneration. Lena Ward estimated 320 junipers at this site, so it is likely that there has been a moderate decline in juniper at this site. The tall growth of some of the old juniper suggests that shading by other trees may have been the prime cause.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Arnside Knott A	Equiv. L. Ward site (s): Arnside Knott (part of)
Site Ref. code: Jun-SD4577-01	Survey date: 30/08/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 4532 7712
Valley / area: Arnside	Altitude: 90
Aspect: 135	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	-									-
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm .....

Sub stand	A									<b>Total</b>
Count	17									17
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...woodland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

**6. Other threats:** Shading by tall trees

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Comments: No details on age classes or degree of fruiting					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Small, shaded stand.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Arnside Knott B	Equiv. L. Ward site (s): Arnside knott (part of)
Site Ref. code: Jun-SD4577-02	Survey date: 30/08/2012
Recorder name (s): P and C Matthiessen	Cent. grid ref: SD 4528 7746
Valley / area: Arnside	Altitude: 120m – 120m
Aspect: 360 degrees	Ownership:

### 2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map?  
Y
- h) GPS number and track name / label?  
N / A
- i) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	-									-
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A									<b>Total</b>
Count	2									2
Method	WT									WT
Confidence	H									H

### 4. Dominant Vegetation ...Limestone Grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

### Indicators of high grazing / browsing pressure?

May have been overgrazed in the past.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
Comments: No details on age or fruit bearing					

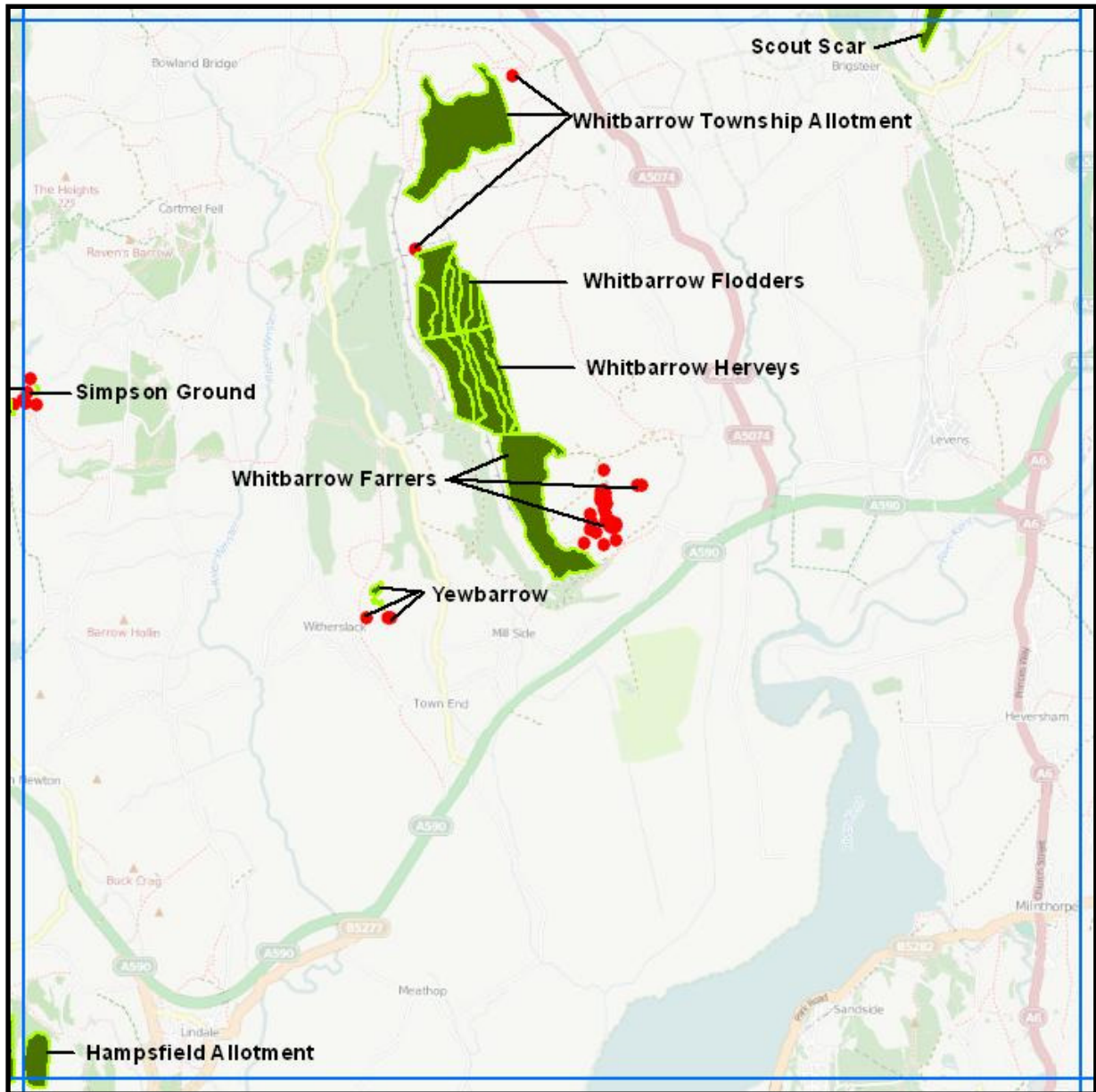
**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

# SD48



## Sites List:

Jun-SD4080-01	Hampsfield Allotment
Jun-SD4086-01	Simpson Ground
Jun-SD4384-01	Yewbarrow
Jun-SD4485-01	Whitbarrow Farrers
Jun-SD4486-01	Whitbarrow Herveys
Jun-SD4487-01	Whitbarrow Flodders
Jun-SD4489-01	Whitbarrow Township Allotment
Jun-SD4990-01	Scout Scar



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hampsfield allotment	Equiv. L. Ward site (s): Hampsfield Allotment SW, NW, NE, SE
Site Ref. Code: Jun-SD4080-01	Survey date: 02/01/2012
Recorder name (s): P&C Matthiessen	Cent. grid ref: SD400-802
Valley / area: Field Broughton/Carmel	Altitude: 130 – 190m
Aspect: NE/NW	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map? No
- b) GPS number and track name / label? No tracks recorded
- c) Area of sub stands and total area?

Sub stand	A	B								Total
Area	4.5	10.8								15.3Ha
Confidence	Med	Med								

### 3. Plant numbers and Juniper sub-species?

**Ssp...**Common Juniper

Sub stand	A	B							Total
Count	78	300-400							378-478
Method	Direct	Direct							VP
Confidence	High	Medium							Medium

### 4. Dominant Vegetation ...Limestone Grassland & Ash/Holly open woodland

#### Other vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe Deer

#### Indicators of high grazing / browsing pressure?

Medium grazing pressure from deer.

**6. Other threats:** Most of the area was covered by Conifer plantation until about 7 years ago, when it was clear-felled.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		80%	10%	15%	
Comments: Die-back occurring where exposed to prevailing wind.					

**Are fruit bearing trees present?** Yes / no (approx. 15%)

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos. NO PHOTOS TAKEN

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

The general impression is that the Juniper stand once covered a wider area but that the old conifer plantation (now felled) probably shaded out a lot of Junipers & caused them to die. The highest density of Juniper is in the SE part of sub-stand B which consists largely of Limestone pavement and would not therefore have been planted with conifers.

Access to parts of the Limestone pavement is difficult, hence the count for sub-stand B is not very accurate.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Simpson Ground	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD4086-01	Survey date: 05/09/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD4004 8648
Valley / area: South Lakes	Altitude: 170m – 180m.
Aspect: Various	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
N / A
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G	H		Total
Area										
Confidence	4	5	5	5	5	5	4	5		4

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C	D	E	F	G	H		Total
Count	21	2	1	5	1	1	5	2		38
Method										WT
Confidence	h	h	h	h	h	h	h	h		h

### 4. Dominant Vegetation ...Acid grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	<u>wet heath / mire</u>
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Almost all junipers browsed, most showing moderate to heavy browsing impacts. Height, extent and depth of browsing all suggest red deer browsing. Impacts on heather also point to frequent browsing by red deer.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
4	1	3	25		5
Comments: Some very old juniper but numerous berry bearing trees and some recent regen.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4086-01A				Overview of Area A.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper is scattered across a large area at this site and is mostly composed of old trees. Although 4 seedlings and one young juniper were found, the browsing on these and other bushes suggests that they might struggle to establish under current conditions. Numerous trees at this allotment include ash, rowan, holly, grey willow, birch and eared willow (1 individual found at SD 39984 86514).

Red deer may be visiting the site frequently and could be an obstacle to plans to plant juniper in the near future.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Whitbarrow Farrers	Equiv. L. Ward site (s): Whitbarrow Farrers and Hervey (part of)
Site Ref. Code: Jun-SD4485-01	Survey date: 05/07/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD44800 85400
Valley / area: Whitbarrow	Altitude: 150 m – 190 m
Aspect: Various	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A	B								Total
Area	48.45									48.45
Confidence	5	5								5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm...

Sub stand	A	B								Total
Count	1768	209								1977
Method	VP	VP								VP
Confidence	M	H								M

### 4. Dominant Vegetation ...limestone grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

All non-juniper scrub heavily browsed and juniper moderately to heavily browsed.

## 6. Other threats:

Shading by tall trees in isolated areas.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	present	present	present	present	present
Comments: Dominated by old trees. At least 40 dead and ill trees along path north from SD44887 85525. These should be tested for <i>Phytophthora austrocedrae</i> . Reported to FERA 06/07/2012.					

Are fruit bearing trees present?

Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4485-01A				Red deer damage on juniper.
Jun-SD4485-01B				Red deer damage on juniper.
Jun-SD4485-01C				Typical size of surviving juniper from 2001 – 2003 planting.

## 9. Comments (associated flora and fauna, survey / access difficulties?):

All of the outliers, barring the three southern points and the northern most point, indicate planting areas that now contain 209 surviving young trees. The majority of the 26 planting areas are within exclosures, of which around one half are still stock proof. Where this is the case young junipers are struggling to compete with the growth of bracken and birch.

The junipers were planted between 2001 and 2003, once the felling of Corsican pine was completed. These young trees show great variation in growth rates, and the majority can't be considered 'established' due to small size (< 1 foot tall) and competition with bracken, bramble and other scrub. Removal of all exclosure fencing and a single visit to weed bracken and scrub would help maximise survival at this stage.

The three southern outliers have 7, 30 and 30 junipers running from west to east, and the northern outlier, close to the new barn has at least three junipers scattered around this point.

The bulk of the juniper on Farrer's Allotment lies to the west of the area which was planted with Corsican Pines. This area is now dominated by old trees, and although some mature and young trees were present, no seedlings were found. Farrer's Allotment junipers are the most heavily browsed on the Whitbarrow Massif and given the carefully controlled cattle grazing that is taken place here, it is likely that this is

due to red deer. The damage sustained by many junipers is consistent with red deer damage seen elsewhere in the County, with large branches snapped off, bark stripped, and shoots browsed back to woody material.

A small die off of junipers has taken place along the path north from SD44887 85525, with at least 40 dead or ill trees present. These should be tested for *Phytophthora austrocedrae*, and were reported to FERA on 06/07/2012.

There were lots of dark green and small pearl bordered fritillaries around on the survey date, and also small heath, meadow brown and grayling butterflies.

### **Restoration:**

#### **Browsing:**

Grazing and browsing are very important at this site for the continued existence of juniper. Large herbivores will open up swards and provide regeneration niches for juniper and the grazing of ground flora, browsing of non-juniper scrub and the trampling of bracken aids the survival of established junipers. The condition of established junipers on Farrer's Allotment suggests that current impacts are too high though, possibly due to frequent visits by herds of red deer. Elsewhere on Whitbarrow, similarly damaged junipers are hard to find and it may be that red deer are accessing this area from the Woodlands to the south. An increase in red deer cull rates in this area may therefore be important for the future of juniper on Farrer's Allotment.

#### **Planting:**

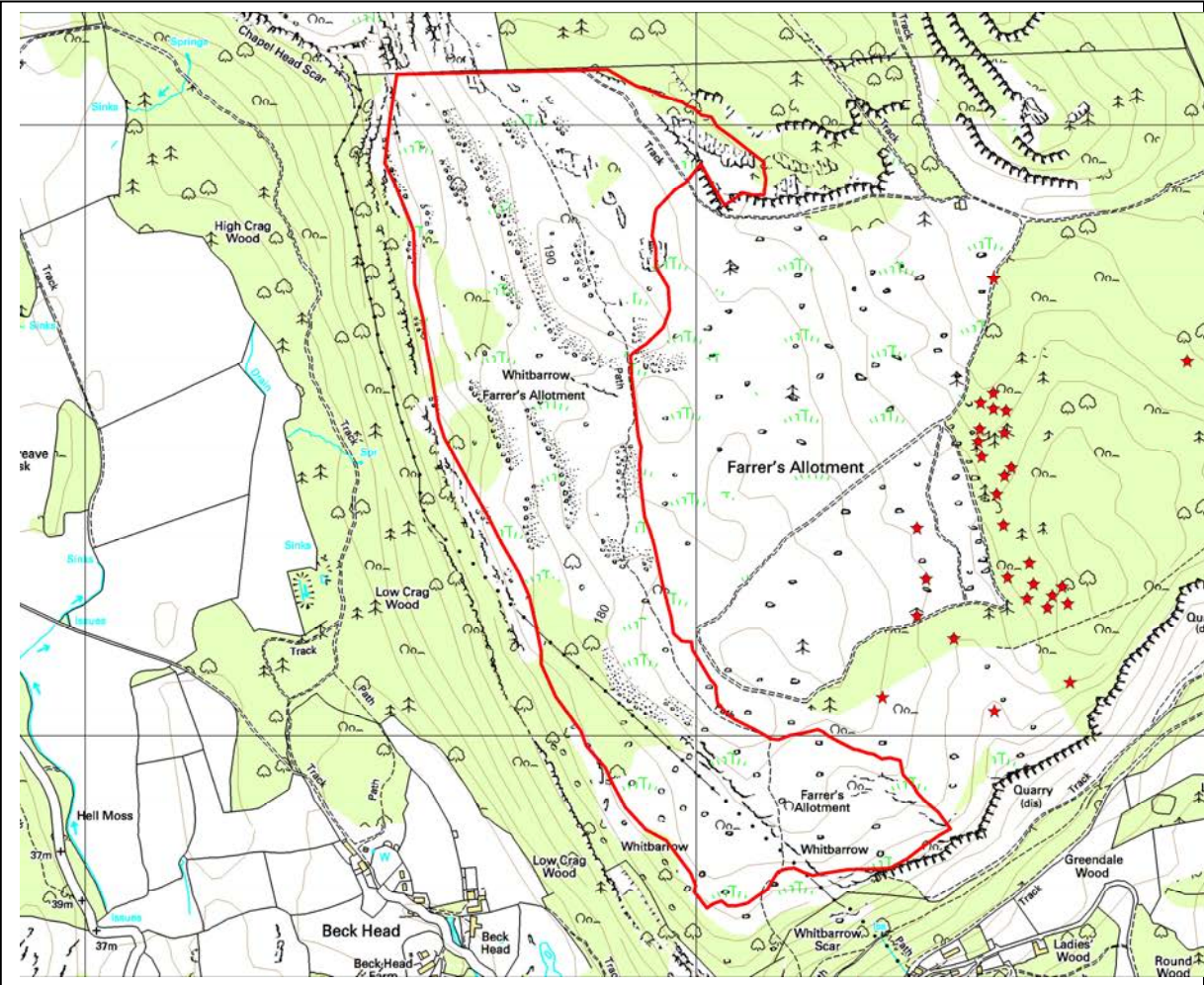
The large area which was under forestry plantation until around 2000 is largely devoid of juniper or any other scrub at the moment. Thanks to the efforts of the Forestry Commission, more than 200 junipers are on their way to establishment, and will soon provide new seed trees in the valley running from SD456851 to SD454855. Similar efforts to plant trees to the northwest and to the east of this area will provide a good basis for future spread of junipers.

Junipers should be planted in clumps of between ten and fifty junipers, with a distance between plants of 1.5 to 2.5 metres. Such clumps should coalesce into thickets as they grow, providing valuable scrub habitat and limiting damage from large herbivores. The creation of large numbers of juniper clumps across the Allotment should minimise the damaging effects of red deer as only some of the planted areas will lie within regularly used areas.

A large proportion of planted junipers could be left unprotected as the primary threat to seedlings will be competition with surrounding ground flora and non-juniper scrub. Protecting one-quarter to one-third of trees with individual protectors or fencing should ensure that some trees survive if browsing impacts increase in the future.

A useful guide for the ultimate density of junipers on Farrer's Allotment is provided by neighbouring allotments to the north. The Hervey Reserve, with 5000 junipers has a density of 100 junipers per hectare, while Flodders Allotment (these were split for practicalities' sake during survey), with 6000 trees has a density of 140 junipers per hectare.

Farrer's Allotment Juniper Stand Boundaries and outliers, July 2012





## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Whitbarrow Hervey	Equiv. L. Ward site (s): Whitbarrow Res C and D
Site Ref. Code: Jun-4486-01	Survey date: 17/01/2012
Recorder name (s): M. Douglas	Cent. grid ref: SD44300 86650
Valley / area: Witherslack	Altitude: 140 – 210m
Aspect: Various	Ownership:

### 2. Stand area:

d) Have you changed the boundaries of the stand on the survey map?

Yes

h) GPS number and track name / label?

i) Area of sub stands and total area?

Sub stand	H	I	J	K	L					Total
Area	14.25	7.87	10.12	10.91	7.36					50.51
Confidence										5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	H	I	J	K	L					Total
Count	2120	1262	701	438	406					4927
Method										WT
Confidence										med

### 4. Dominant Vegetation ...limestone grassland.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

Woodland

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other Roe deer.....

#### Indicators of high grazing / browsing pressure?

Few signs of juniper browsing or bark stripping despite severe browsing of yew and holly. Probable thrashing / fraying damage from red deer around SD44103 86643.

**6. Other threats:** Shading by taller trees along western slope. Past die off of more than ten juniper around SD 44530 86217.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: Only one ill tree seen. Young trees numerous and seedlings not difficult to find.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**  
 Juniper healthy and regenerating well, despite severe browsing of yew and holly by livestock. Red deer impacts limited to a few juniper in a small area on the western slope.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Whitbarrow, Flodder Allotment	Equiv. L. Ward site (s): Whitbarrow Res. A and B
Site Ref. Code: Jun-SD4487-01	Survey date: 12 and 17 <sup>th</sup> January 2012
Recorder name (s): M. Douglas	Cent. grid ref: SD44010 87380
Valley / area: Witherslack	Altitude: 140 – 210m
Aspect: Various	Ownership:

### 2. Stand area:

e) Have you changed the boundaries of the stand on the survey map?

Yes

j) GPS number and track name / label?

k) Area of sub stands and total area?

Sub stand	A	B	C	D	E	F	G			Total
Area	6.77	13.96	5.17	4.54	5.21	4.40	1.70			41.75
Confidence										5

### 3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A	B	C	D	E	F	G			Total
Count	1730	1730	1150	544	380	270	190			5994
Method										WT
Confidence										med

### 4. Dominant Vegetation ...Limestone grassland.....

#### Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep

Cattle

Red Deer

Other Roe Deer.....

#### Indicators of high grazing / browsing pressure?

Few signs of past or present browsing on juniper and difficult to find damage to bushes due to rubbing or thrashing by large herbivores. This is despite occasional browsing of *Calluna*, and heavy browsing of all accessible holly and yew.

**6. Other threats:** Some shading of juniper on western slopes.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	none	present
Comments: Seedlings not numerous but they were found within each portion.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper is providing protection for regenerating trees in section A, and some of these are shading out the juniper as they grow. Although yew and holly are severely browsed wherever they grow, juniper is largely untouched by herbivores. Other standard trees include hazel, blackthorn, ash and birch. Four snipe were flushed from juniper and surrounding vegetation during the survey.

Cattle (11 of) and sheep (7 of) were recorded, but there were no obvious signs of red deer presence, despite known populations in the area. Roe deer droppings were found amongst the juniper.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Township Allotment, Whitbarrow	Equiv. L. Ward site (s): Whitbarrow North A, B, C and D
Site Ref. Code: Jun-SD4489-01	Survey date: 01/02/2012
Recorder name (s): Mike Douglas	Cent. grid ref: NY 44160 89000
Valley / area: Whitbarrow	Altitude: 110 – 170m.
Aspect: various	Ownership: Crosthwaite and Lythe PC

### 2. Stand area:

- f) Have you changed the boundaries of the stand on the survey map?  
yes
- l) GPS number and track name / label?  
na
- m) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	58.32									58.32 ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	A									<b>Total</b>
Count	9646									9646
Method	Aerial									Aerial
Confidence	Low									Low

### 4. Dominant Vegetation Limestone grassland.....

#### Other vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	Bracken
Scree	Outcrop / cliff
<u>Limestone scree</u>	Limestone outcrop / cliff

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Juniper in the NE corner of the site show signs of recent and past browsing and within this area, there are no seedlings, the stand is dominated by old trees, and there are many dead individuals and some diseased trees. Elsewhere it is difficult to find browsed juniper and there are more young and seedling juniper.

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	present	present	present	present
Comments: Most seedlings and young trees (many tens of) found at the south and south west ends of the stand, usually in deeper soils alongside Heather, <i>Calluna vulgaris</i> .					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

There is huge variation in juniper density throughout the stand, and large areas without any juniper at all within Township Allotment. This stand has a slightly more open feel compared with the other Whitbarrow Allotments further south, and the grassland seems to be shorter cropped with tussocks of *Sesleria* less abundant. Standard trees include yew, Scot's pine, larch, ash, birch and a number of sycamore. The northern half of the stand seems to be dominated by old trees with little sign of regeneration in recent decades.

**Management Recommendations:**

It seems that juniper is regenerating and sustaining itself only in a small area at the western end of the Allotment. Changes in management may encourage regeneration to the east, but planting of junipers will be necessary at the southern end of the site to speed up juniper colonisation here.

It is difficult to see why existing juniper is not regenerating at the eastern end of the site, other than the occasional browsing of established trees, which may point to seedlings being pulled up or browsed by livestock. Similar substrates to the south, at Hervey's Allotment, have good numbers of seedlings and young trees. Livestock, particularly sheep, are usually a problem for juniper in the winter, when other food stuffs are exhausted and they turn to the less palatable juniper. Limiting the numbers

of out-wintered livestock would be one solution to the lack of regeneration. Another would be to ensure that any winter feed is given to animals well away from existing juniper, effectively reducing the time spent in areas where seedlings are likely to be found.

At the south of Township Allotment there is a large (50ha) area which almost devoid of juniper or other scrub. This limits the biodiversity of this area, and may present a barrier on the Whitbarrow Massif, to the movement of some invertebrates associated with juniper. Natural regeneration of juniper in this area would take many decades or longer, making planting a good option. Absolute numbers to be planted will depend on the wishes of the landowner / managers, but given the size of the site and its importance to juniper conservation in Cumbria, substantial numbers should be considered. The planting of around 1500 junipers should be a realistic goal within HLS, and this will result in densities of junipers approaching that found across the rest of the site.

Junipers should be planted in clumps of between 10 and 50 plants, with space between trees of 4 to 8 foot. This will allow plants to coalesce as they grow, forming self-protecting clumps of relatively high value to other wildlife. A number of planting sites should be selected across this large area taking in slightly different substrates and allowing for differing grazing pressures across the area in the future.

Tree protection can be provided by fencing or individual tree guards. The latter need to be 0.9m high, at least 30cm in diameter and preferably of an open mesh type to limit the 'greenhouse effect' within protectors. Fencing could be a good option on this site, as linking short stretches to the existing boundary wall would allow areas to be stock excluded relatively cheaply. Some junipers could be planted without protection and monitored through their first year to see if this method could be more widely used.

The selection of grassy areas for planting will limit the amount of weeding required around planted bushes. If areas of deeper soil with bracken are chosen for planting, more weeding will be required, perhaps as often as twice per year for the first two or three years.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Scout Scar	Equiv. L. Ward site (s): Helsington Barrows and Bradleyfield
Site Ref. code: Jun-SD4990-01	Survey date: 08/08/2013 and 01/02/2013
Recorder name (s): Mike Douglas	Cent. grid ref: SD4908 9092
Valley / area: Kendal	Altitude: 120m – 220m
Aspect: Various	Ownership:

### 2. Stand area:

- g) Have you changed the boundaries of the stand on the survey map?  
Yes
- n) GPS number and track name / label?  
N / A
- o) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	129.9									129.9
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

**Ssp...***J.c. comm* .....

<b>Sub stand</b>	A									<b>Total</b>
<b>Count</b>	1888									1888
<b>Method</b>	VP									VP
<b>Confidence</b>	M									M

### 4. Dominant Vegetation ...Limestone grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Generally light to moderate grazing but patchy across the site. In the SE corner, many junipers had apparently been damaged by red deer (1<sup>st</sup> Feb 2013 survey), with at least five junipers killed recently due to excessive browsing and bark stripping. Many

taller, conical juniper had also been damaged, with branches of more than 2cm diameter snapped off alongside browsing and bark stripping.

**6. Other threats:** Some juniper on Scout Scar has been confirmed with *Phytophthora austrocedrae* after testing by FERA, but no ill juniper were seen during these surveys.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	20%	70%	present	present
Comments: Scout Scar (A): poor mix of age classes suggesting grazing has been heavier than neighbouring Bradleyfield for some time.					

**Are fruit bearing trees present?** Yes / no

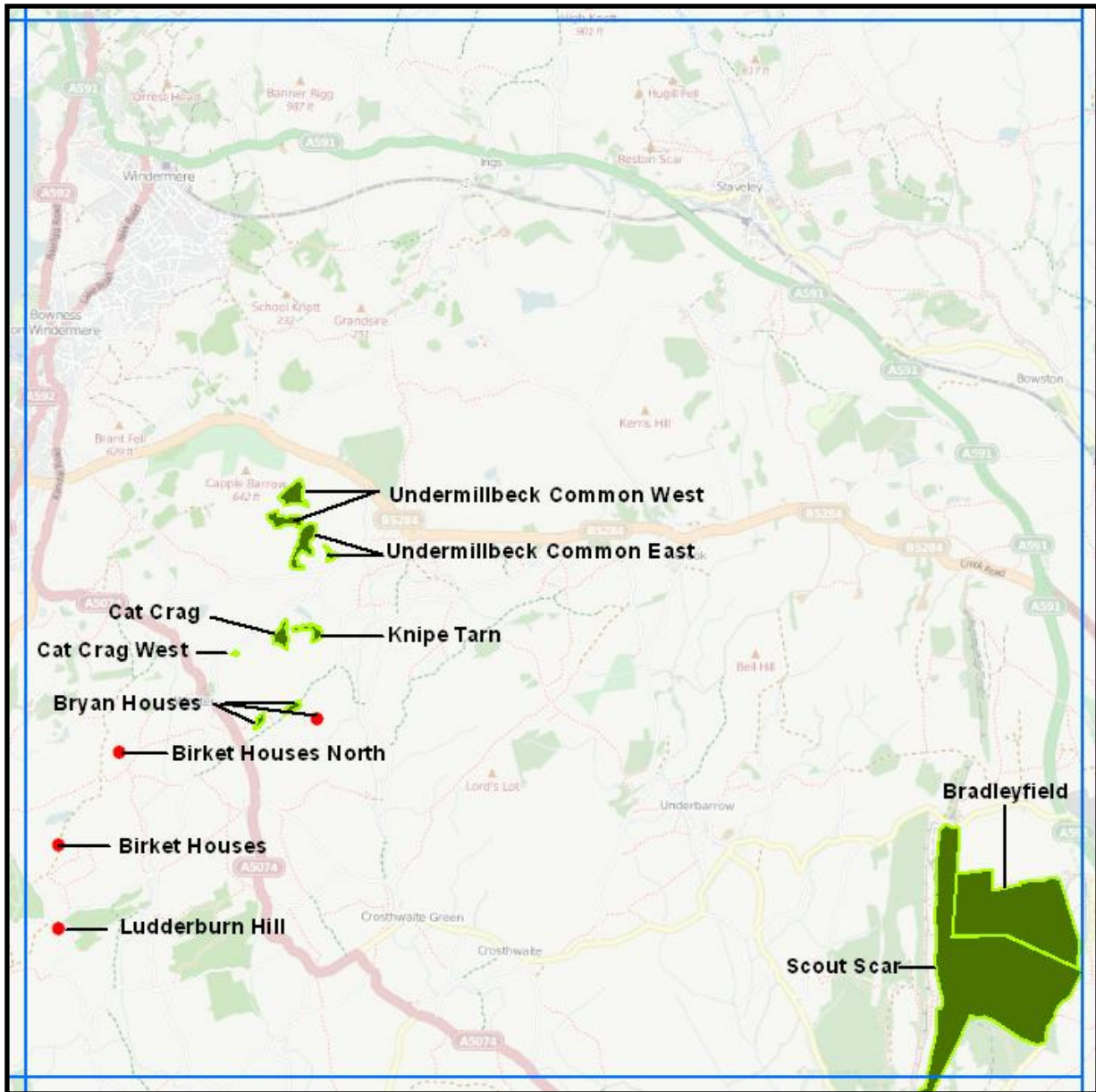
**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4990-01A	SD 4924 9101	SE		Red deer browsed juniper in the foreground, typical juniper density of Scout Scar illustrated in background.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This stand is struggling to regenerate under recent and current grazing pressure. The short cropped nature of the limestone grassland suggests that livestock grazing effects are higher here than those seen at neighbouring Bradleyfield, and the browsing damage and death of a number of juniper (5 dead juniper found during 01/02/2013 survey) suggests that red deer are frequently using the site. Numerous associated trees included ash, rowan, yew, holly, gorse, hawthorn and dog rose. Isolated sycamore are present but these do not appear to be regenerating strongly. Six autumn gentians were found at SD 49237 91051.

# SD49



## Sites List:

- |               |                           |
|---------------|---------------------------|
| Jun-SD4091-01 | Ludderburn Hill           |
| Jun-SD4092-01 | Birket Houses             |
| Jun-SD4093-01 | Birket Houses North       |
| Jun-SD4194-01 | Cat Crag West             |
| Jun-SD4293-01 | Bryan Houses              |
| Jun-SD4294-01 | Knipe Tarn                |
| Jun-SD4294-02 | Cat Crag                  |
| Jun-SD4295-01 | Undermillbeck Common West |
| Jun-SD4295-02 | Undermillbeck Common East |
| Jun-SD4990-01 | Scout Scar                |
| Jun-SD4991-01 | Bradleyfield              |



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bryan Houses	Equiv. L. Ward site (s): Green Yew Nr
Site Ref. code: Jun-SD4293-01	Survey date: 30/03/2013
Recorder name (s): H. Corton and P. Howlett	Cent. grid ref: SD 4251 9349
Valley / area: Windermere	Altitude: 110m – 160m.
Aspect: Various	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A	B	C							Total
Area										
Confidence	5	5	4							

### 3. Plant numbers and Juniper sub-species?

Ssp...J.c.comm .....

Sub stand	A	B	C							Total
Count	29	98	12							139
Method	WT	WT	WT							WT
Confidence	H	H	H							H

### 4. Dominant Vegetation ...wet grassland and rushes.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Sub-stands A and B both browsed and rubbed by cattle or red deer, with lots of broken branches. Outlier C juniper browsed where accessible.

6. Other threats: None

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	<5%	>75%	present	20%
Comments:					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4293-01A				
Jun-SD4293-01B				
Jun-SD4293-01C				

9. Comments (associated flora and fauna, survey / access difficulties?):

Sub-stand A is the western most patch of juniper, B the largest patch upslope of this to the East, and outlier C is over the wall to the south-east.

This is an old stand under pressure from livestock and red deer browsing and rubbing. Larch, beech, holly and gorse also present.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Undermillbeck West	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD4295-01	Survey date: 06/11/2012
Recorder name (s): H. Corton and P. Howlett	Cent. grid ref: SD4252 9545
Valley / area: Windermere	Altitude: 150m – 170m
Aspect: Various	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
N / A
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	7.26									7.26ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A									<b>Total</b>
Count	123									123
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...wet grass / rushes.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Some bushes trampled and damaged by cattle / red deer

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	10%	90%	X	present
Comments:					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Juniper widespread across the common, with concentrations around water courses.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Undermillbeck East	Equiv. L. Ward site (s): None
Site Ref. code: Jun-SD4295-02	Survey date: 03/03/2013
Recorder name (s): H. Corton and P. Howlett	Cent. grid ref: SD4268 9499
Valley / area: Windermere	Altitude: 150 – 180m
Aspect: Various	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
N / A
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	5.66									5.66
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A									<b>Total</b>
Count	175									175
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...wet grass / rushes.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
dry heath	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	<u>Outcrop / cliff</u>
Limestone scree	Limestone outcrop / cliff
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Trampling / collapse of bushes due to rubbing cattle?

**6. Other threats:**

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	50%	50%	present	Present
Comments: Dead juniper and gorse in waterlogged areas. Junipers growing in wet areas mostly small but mature (suppressed growth). Few female bushes.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Many of the juniper were in wet areas, while drier areas are covered in dense gorse. All of the scrub is criss-crossed by paths and individual bushes are trampled and damaged.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Scout Scar	Equiv. L. Ward site (s): Helsington Barrows and Bradleyfield
Site Ref. code: Jun-SD4990-01	Survey date: 08/08/2013 and 01/02/2013
Recorder name (s): Mike Douglas	Cent. grid ref: SD4908 9092
Valley / area: Kendal	Altitude: 120m – 220m
Aspect: Various	Ownership:

### 2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map?  
Yes
- h) GPS number and track name / label?  
N / A
- i) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	129.9									129.9
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c. comm* .....**

<b>Sub stand</b>	A									<b>Total</b>
<b>Count</b>	1888									1888
<b>Method</b>	VP									VP
<b>Confidence</b>	M									M

### 4. Dominant Vegetation ...Limestone grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Generally light to moderate grazing but patchy across the site. In the SE corner, many junipers had apparently been damaged by red deer (1<sup>st</sup> Feb 2013 survey), with at least five junipers killed recently due to excessive browsing and bark stripping. Many

taller, conical juniper had also been damaged, with branches of more than 2cm diameter snapped off alongside browsing and bark stripping.

**6. Other threats:** Some juniper on Scout Scar has been confirmed with *Phytophthora austrocedrae* after testing by FERA, but no ill juniper were seen during these surveys.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	present	20%	70%	present	present
Comments: Scout Scar (A): poor mix of age classes suggesting grazing has been heavier than neighbouring Bradleyfield for some time.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD4990-01A	SD 4924 9101	SE		Red deer browsed juniper in the foreground, typical juniper density of Scout Scar illustrated in background.

**9. Comments (associated flora and fauna, survey / access difficulties?):**

This stand is struggling to regenerate under recent and current grazing pressure. The short cropped nature of the limestone grassland suggests that livestock grazing effects are higher here than those seen at neighbouring Bradleyfield, and the browsing damage and death of a number of juniper (5 dead juniper found during 01/02/2013 survey) suggests that red deer are frequently using the site. Numerous associated trees included ash, rowan, yew, holly, gorse, hawthorn and dog rose. Isolated sycamore are present but these do not appear to be regenerating strongly. Six autumn gentians were found at SD 49237 91051.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Bradleyfield	Equiv. L. Ward site (s): Bradleyfield
Site Ref. code: Jun-SD4991-01	Survey date: 1/02/2013
Recorder name (s): M. Douglas	Cent. grid ref: SD 4940 9157
Valley / area: Kendal	Altitude: 150m – 230m
Aspect: Various but predominantly E	Ownership:

### 2. Stand area:

- e) Have you changed the boundaries of the stand on the survey map?  
Yes
- j) GPS number and track name / label?  
N / A
- k) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	68.35									68.35ha
Confidence	5									5

### 3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm* .....

Sub stand	A									<b>Total</b>
Count	3270									3270
Method	VP									VP
Confidence	M									M

### 4. Dominant Vegetation ...Limestone grassland.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
Limestone grassland	<u>Bracken</u>
Scree	Outcrop / cliff
<u>Limestone scree</u>	<u>Limestone outcrop / cliff</u>
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other .....

#### Indicators of high grazing / browsing pressure?

Light grazing. Difficult to find browsed juniper other than in the SE (fenced) corner where juniper close to the regularly used access track were lightly browsed.

**6. Other threats:** A case of *Phytophthora austrocedrae* in juniper has been confirmed at Scout Scar.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
present	10%	30%	60%	X	X
Comments: Healthy stand with good mixture of age classes – 15 seedlings seen during survey.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

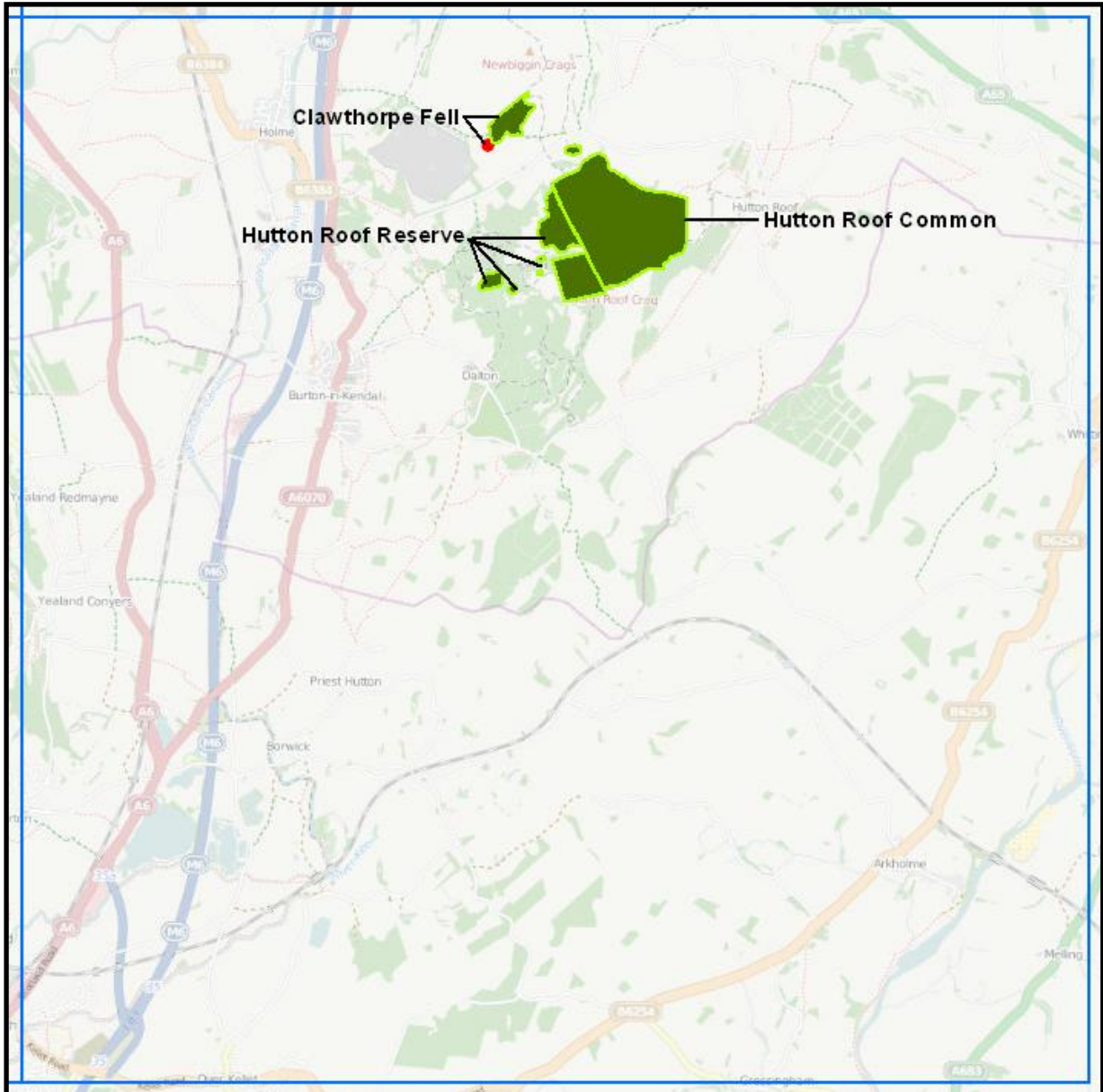
Conditions for juniper seem to be ideal at Bradleyfield, unlike those over the wall on Scout Scar (Jun-SD4990-01). This looks to be due to lower impacts from livestock and less frequent visits by red deer to this site.

Associated trees included ash, rowan, yew, holly gorse, hawthorn and dog rose.

Isolated sycamore are present but these do not appear to be regenerating strongly.

Saw two green woodpecker and one jack snipe during survey.

# SD57



## Sites List:

- |               |                     |
|---------------|---------------------|
| Jun-SD5479-01 | Clawthorpe Fell     |
| Jun-SD5577-01 | Hutton Roof Reserve |
| Jun-SD5578-01 | Hutton Roof Common  |



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Clawthorpe Fell	Equiv. L. Ward site (s): Clawthorpe Total
Site Ref. code: Jun-SD5479-01	Survey date: 06/04/2013
Recorder name (s): D. Benham and B. King	Cent. grid ref: SD5459 7905
Valley / area: Holme	Altitude: 140m – 210m
Aspect: 225 degrees	Ownership:

### 2. Stand area:

- a) Have you changed the boundaries of the stand on the survey map?  
Yes
- b) GPS number and track name / label?  
N / A
- c) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	9.38									9.38ha
Confidence	4									4

### 3. Plant numbers and Juniper sub-species?

*Ssp...J.c.comm...*

Sub stand	A									<b>Total</b>
Count	856									856
Method	WT									WT
Confidence	M									M

### 4. Dominant Vegetation ...woodland and scrub.....

#### Other habitats / vegetation types present:

acid grassland	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
<u>Limestone grassland</u>	Bracken
Scree	Outcrop / cliff
Limestone scree	<u>Limestone outcrop / cliff</u>
Woodland	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Rabbits.....

#### Indicators of high grazing / browsing pressure?

Heather, holly and yew tightly browsed and topiarised. Rabbits mostly responsible to the north of the site. Juniper lightly browsed or unbrowsed.

## 6. Other threats: Shading by gorse and a mixture of other trees and scrub.

Extensive gorse alongside juniper could increase risk of fire damage to juniper.

## 7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
	1	35	40	14	10
Comments: Most of the old, ill or dead bushes at the southern end of the site.					

Are fruit bearing trees present? Yes / no

8. Fixed point photography: Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD5479-01A		NNE		Old juniper with tree regeneration within its canopy
Jun-SD5479-01B		E		Sick looking juniper. Ash regenerating within its canopy
Jun-SD5479-01C		S		Dying / dead juniper amongst holly.

## 9. Comments (associated flora and fauna, survey / access difficulties?):

A high walled and gated area NE of Holme Park (Clawthorpe) Quarry. Junipers with a variety of growth forms were found only in the northern half of the walled enclosure, as large, old gorse and a mixture of other trees out-competed them to the less exposed south. Most grazing at the northern end was by rabbits, with many droppings and some rabbit bones here. Nearer the walls to the south there was a mixture of stunted holly, yew, hazel, ash and hawthorn, which were all competing with the juniper. Holly and yew was sometimes browsed to topiary shapes but the juniper had little or no grazing. Small clumps of heather, swamped by *Sesleria albicans* were were tightly browsed down by the rabbits. Around a third of junipers in the centre and south of the stand, were dying or dead, while many others on the more exposed ground looked healthy.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hutton Roof Reserve	Equiv. L. Ward site (s): Hutton Plover, Claw and Lancelot
Site Ref. code: Jun-SD5577-01	Survey date: 31/03/2013
Recorder name (s): B. Crooks, O. Fulton, A. and C. Dale	Cent. grid ref: SD5502 7769
Valley / area: Burton in Kendal	Altitude: 120m – 260m
Aspect: 270 degrees	Ownership:

### 2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map?  
Yes
- d) GPS number and track name / label?  
N / A
- e) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	30.8									30.8 ha
Confidence	3									3

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A									<b>Total</b>
Count	3872									3872
Method	WT									WT
Confidence	H									H

### 4. Dominant Habitat / Vegetation ...Limestone outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
<u>dry heath</u>	wet heath / mire
<u>Limestone grassland</u>	<u>Bracken</u>
Scree	Outcrop / cliff
<u>Limestone scree</u>	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other Roe deer

#### Indicators of high grazing / browsing pressure?

Juniper unbrowsed but other trees including yew heavily browsed.

**6. Other threats:** Shading from tall trees.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
13%	21%	16%	51%	12%	7%
Comments: 15% with berries.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Almost all 'seedlings' and 'young' were a result of layering bushes, which seems to be unusually common at this site. All ill and dead bushes were the result of shading by tall trees.



## Uplands for Juniper Project – Survey Form

### 1. Site details

Site Name: Hutton Roof Common	Equiv. L. Ward site (s): Hutton Uberash and Hutton Plover
Site Ref. code: Jun-SD5578-01	Survey date: 31/10/2013
Recorder name (s): B. Crooks, O. Fulton, A. and C. Dale	Cent. grid ref: SD5559 7804
Valley / area: Burton in Kendal	Altitude: 180m – 270m
Aspect: Variable	Ownership:

### 2. Stand area:

- c) Have you changed the boundaries of the stand on the survey map?  
Yes
- f) GPS number and track name / label?  
N / A
- g) Area of sub stands and total area?

Sub stand	A									<b>Total</b>
Area	95.75									95.75ha
Confidence	2									2

### 3. Plant numbers and Juniper sub-species?

**Ssp...*J.c.comm* .....**

Sub stand	A									<b>Total</b>
Count	12671									12671
Method	WT									WT
Confidence	M									M

### 4. Dominant Habitat / Vegetation ...Limestone outcrop.....

#### Other habitats / vegetation types present:

<u>acid grassland</u>	wet grassland / rushes
dry heath	wet heath / mire
<u>Limestone grassland</u>	<u>Bracken</u>
Scree	Outcrop / cliff
<u>Limestone scree</u>	Limestone outcrop / cliff
<u>Woodland</u>	

### 5. Grazing / browsing (circle appropriate grazing animal)?

Sheep                      Cattle                      Red Deer                      Other ...Roe deer, few rabbits

#### Indicators of high grazing / browsing pressure?

Sheep grazing sporadic and in very small numbers.

**6. Other threats:** Shading from tall trees and thicket stage ash and hazel.

**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
8%	32%	15%	44%	11%	5%
Comments: 20% with berries.					

**Are fruit bearing trees present?** Yes / no

**8. Fixed point photography:** Insert Grid reference and compass bearing fixed point photos.

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point

**9. Comments (associated flora and fauna, survey / access difficulties?):**

Almost all 'seedlings' and 'young' were a result of layering bushes, which seems to be unusually common at this site. All ill and dead bushes were the result of shading by tall trees.