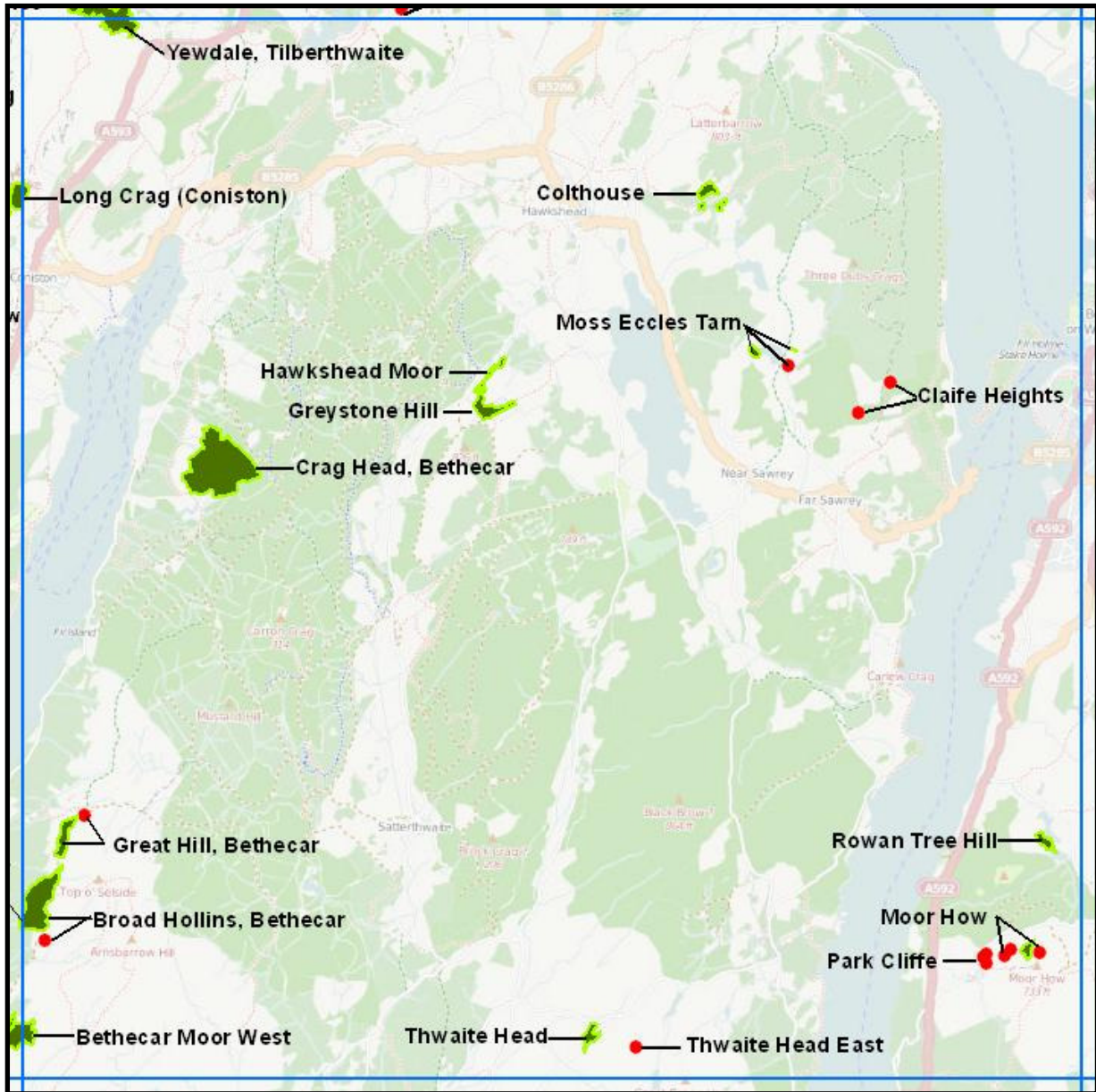


# SD39



## 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								<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: 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								<b>Total</b>
Area	6.9	3.3								10.2
Confidence	5	5								5

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

**Ssp comm.....**

Sub stand	<b>A</b>	<b>B</b>								<b>Total</b>
Count	<b>1311</b>	<b>845</b>								<b>2156</b>
Method	<b>VP</b>	<b>Photo</b>								<b>VP / photo</b>
Confidence	<b>M</b>	<b>M</b>								<b>M</b>

**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:**

- |                       |                               |
|-----------------------|-------------------------------|
| <u>acid grassland</u> | <u>wet grassland / rushes</u> |
| <u>dry heath</u>      | <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?**

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
- 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 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