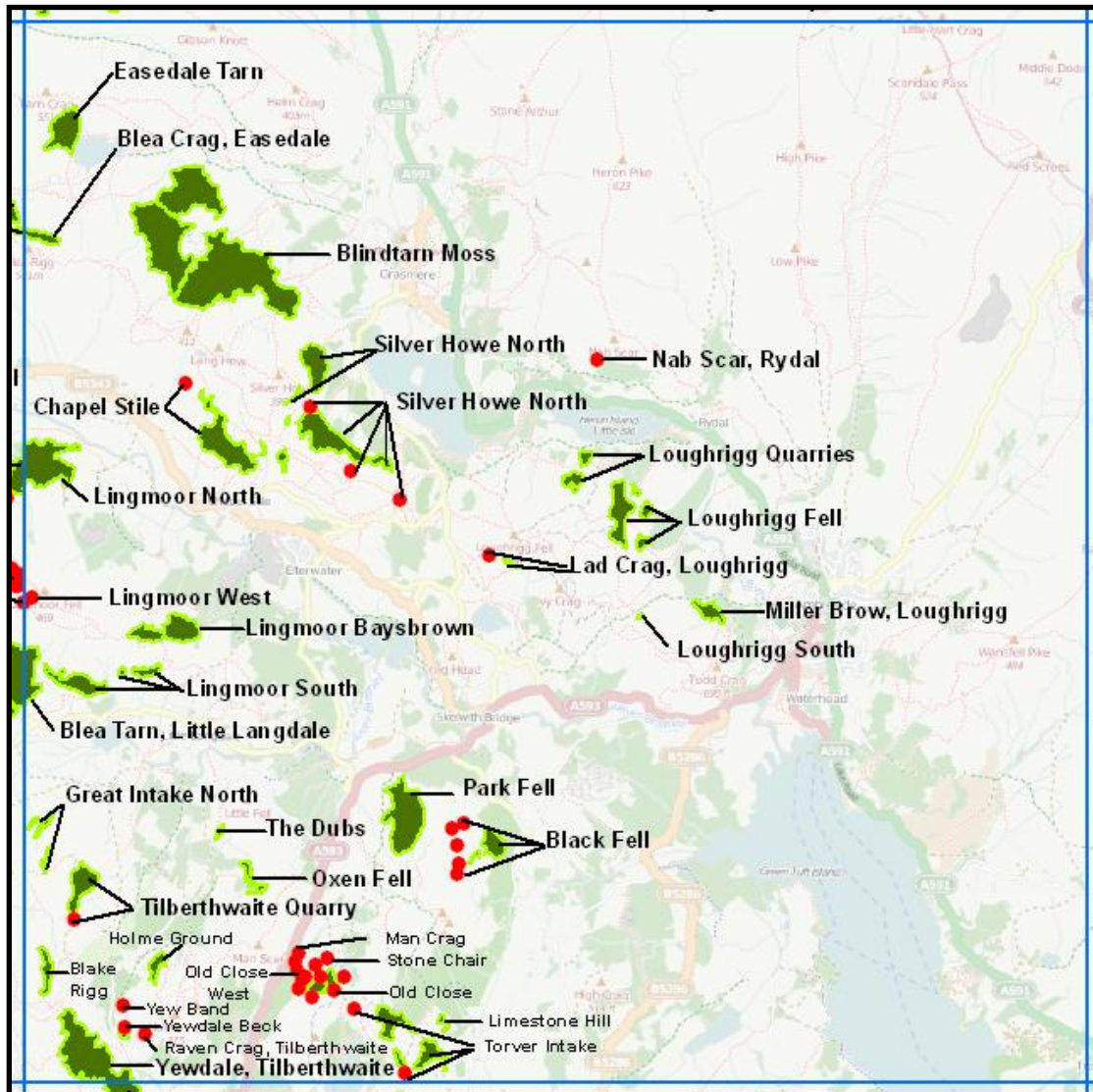


# NY30



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

### 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	NY3031608024			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								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: 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:

<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

### 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						Total
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						Total
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							Total
Area	46ha	26ha	18.6ha							90.6 ha

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

Ssp comm.

Sub stand	A	B	C							Total
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
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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.