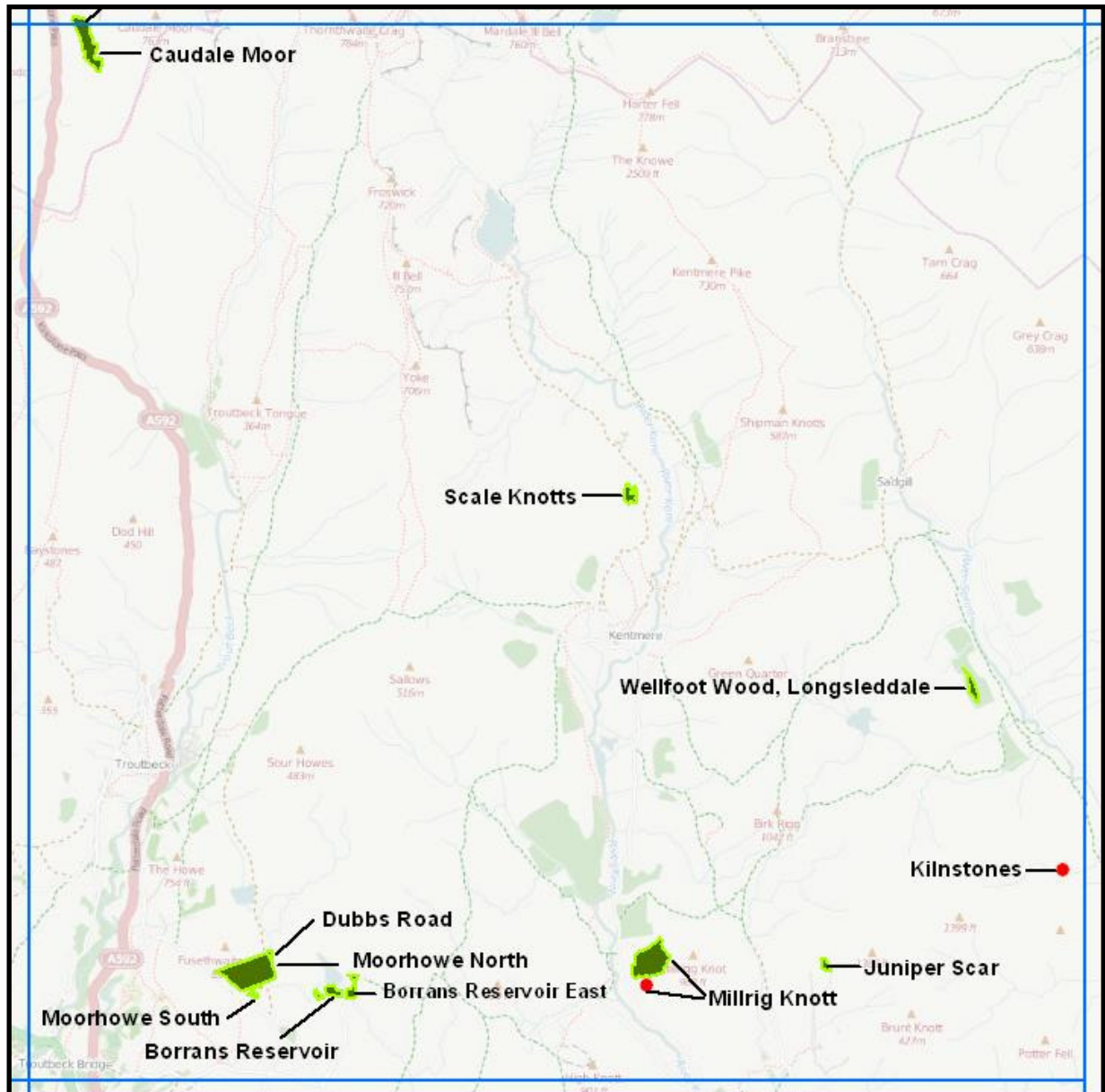


NY40



Sites List:

ExJ-NY4300-01	Borrans Reservoir East
Jun-NY4010-01	Caudale Moor
Jun-NY4200-01	Borrans Reservoir
Jun-NY4200-02	Moorhove South
Jun-NY4201-01	Dubbs Road
Jun-NY4201-02	Moorhove North
Jun-NY4501-01	Millrig Knott
Jun-NY4505-01	Scale Knotts
Jun-NY4701-01	Juniper Scar
Jun-NY4803-01	Wellfoot Wood, Longsleddale
Jun-NY4920-01	Kilnstones



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Borran's Reservoir	Equiv. L. Ward site (s): High Borrans SW
Site Ref. Code: Jun-NY4200-01	Survey date: 01/03/2012
Recorder name (s): M. Douglas, J. Ashton	Cent. grid ref: NY 428 008
Valley / area: High Borrans	Altitude: 200m
Aspect: None	Ownership:

2. Stand area:

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

Sub stand	A	B	C							Total
Area										
Confidence										

3. Plant numbers and Juniper sub-species?

Ssp...comm

Sub stand	A	B	C							Total
Count	96	115	113							324
Method	WT	WT	WT							WT
Confidence	H	H	H							H

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

Other vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

Within the fenced enclosure (used for pheasant shooting?) there is no livestock grazing and seemingly little pressure from deer. Immediately outside of this fencing, sheep grazing has created browse lines on many of the juniper, and sheep or deer have severely pruned some low growing juniper. The juniper over the boundary wall

to the south are healthier, with little evidence of browsing, but there is still no regeneration, and the abundance of *Nardus* suggests that the area is still heavily grazed.

6. Other threats:

The old junipers within the enclosure are in the process of being shaded out by taller trees including Scot's pine, larch, oak, birch, rowan and ash. There are also 1 each of yew and beech present. Seedlings are unlikely to complete with the ground flora, which is dominated by bracken and bramble.

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
		Present	> 90%	Present	> 5%
Comments: Four trees to the south of the boundary wall are showing signs of illness / infection, with browned foliage on one or more boughs.					

Are fruit bearing trees present? Yes / no

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

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

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

Sub-stand A is within the enclosure and has 96 juniper, sub-stand B immediately outside the enclosure with 115 trees, and sub-stand C to the south of the boundary wall, with 113 trees.

This fragmented stand is unlikely to survive in the long term, due to continuously high browsing pressure from sheep and deer outside of the enclosure, and due to shading and competition with other species inside the enclosure.

Red deer droppings were seen to the south of the boundary wall, and a woodcock was disturbed from some juniper in the same area.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Moorhowe South	Equiv. L. Ward site (s): -
Site Ref. code: NY4200-02	Survey date: 12.05.2012
Recorder name (s): Janet Ashton	Cent. grid ref: NY422008
Valley / area: Troutbeck	Altitude: 200 – 210m
Aspect: Varied	Ownership: N.T. leased by Simon Ward

2. Stand area:

- b) Have you changed the boundaries of the stand on the survey map? Yes.
None given
- d) GPS number and track name / label? Moorhowe
- e) Area of sub stands and total area? 0.4ha

Sub stand	A									Total
Area	0.4ha									
Confidence	5									

3. Plant numbers and Juniper sub-species?

Ssp... Communis

Sub stand	A									Total
Count	86									
Method	Count									
Confidence	High									

4. Dominant VegetationWet grassland

Other habitats / vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

Close cropped. Droppings, some Juniper close cropped. Small number of sheep present. Cattle due in around 20/05/2012

6. Other threats: Dead and sick trees confirmed with *Phytophthora austrocedrae* in 2012.

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			86%	1%	9%
Comments: A few trees show signs of animal damage at base. A few are close-cropped, but most are quite healthy.					

Are fruit bearing trees present? Yes Very few.

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Moorhowe 2 Damaged & dying trees	42078 00804	N 0deg	None	Within stand
Moorhowe 2 healthy trees	42192 00919	N 0deg	None	Dry part of stand in field

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

This field is grazed pasture but not too heavily grazed. It is in better condition than the adjacent field previously surveyed. The healthiest Juniper are along the N boundary-wall and most are within a hollow in the field. There is a mix of dry acid grassland & rocky outcrops, with wet areas with rushes draining to a small stream.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Dubbs Road	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY4201-01	Survey date: 01/03/2012
Recorder name (s): M. Douglas, J, Ashton	Cent. grid ref: NY422 011
Valley / area: Troutbeck, Windermere	Altitude: 220 m
Aspect: 80 degrees	Ownership:

2. Stand area:

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

Sub stand	A									Total
Area	0.32									0.32 ha
Confidence	5									5

3. Plant numbers and Juniper sub-species?

Ssp comm.....

Sub stand	A									Total
Count	81									81
Method	VP									VP
Confidence	H									H

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

Other vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

No signs of grazing or browsing within the enclosure but outside of this 17 juniper survive within rough pasture.

6. Other threats: Shading by tall trees including willow, ash, holly and rowan will be a problem in the future, and ground flora of bracken, bramble and even heather is overwhelming prostrate juniper at present.

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			present		
Comments: All trees are old.					

Are fruit bearing trees present? Yes / no

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

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

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

This may be a remnant of a more extensive stand, as there are a number of outlying juniper over the ridge towards Moorhowe Road.

The enclosure may have saved some of the juniper in the short term, but continued exclusion of livestock will result in the disappearance of this stand in the long term, due to strong competition from the ground flora and from tall trees.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Moorhowe North	Equiv. L. Ward site (s): -
Site Ref. code: NY4201-02	Survey date: 28.04.2012
Recorder name (s): Janet Ashton	Cent. grid ref: NY420010
Valley / area: Troutbeck	Altitude: 200 – 230m
Aspect: S.W	Ownership:

2. Stand area:

- d) Have you changed the boundaries of the stand on the survey map? Yes.
None give.
- h) GPS number and track name / label? No track made
- i) Area of sub stands and total area? Trees scattered throughout

Sub stand	A									Total
Area	Whole field									
Confidence	5									

3. Plant numbers and Juniper sub-species?

Ssp... ..

Sub stand	1										Total
Count	44										
Method	Count										
Confidence	High										

4. Dominant Vegetation : Wet grassland

Other habitats / vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

Low sward, poaching of wet ground. Juniper, Hawthorn & Holly broken and damaged up to height of 1 to 1.5 metres. Cattle droppings (Highland cattle graze here). Small number of sheep on day of survey.

6. Other threats: Dead and sick trees confirmed with *Phytophthora austrocedrae* in 2012.

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
			100%	4%	20%
Comments: Most trees have bare trunks, broken lower branches, foliage only at top.					

Are fruit bearing trees present? Yes / Very few

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Dying tree	4190900932	NNW 330deg	No zoom used	Wet gully in field. Trees look ill.
Typical view	4194001045	NNE 20deg	No zoom used	Dry area. Cattle damage.
Field view	4219200919	NW 300deg	No zoom used	From field boundary wall, showing scatter of trees

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

This field is heavily grazed pasture. Wet hollows with Rushes & Sedges, acid grassland with a lot of bracken and drier rocky outcrops.

The SW facing 2/3 has scattered trees, Juniper, Hawthorn Holly and Elder. All show signs of cattle and sheep damage. The lower branches are broken and dead & there is bare soil at the base of many trees.

The NE-facing third has no Juniper & few other trees. A small portion in the NE corner is fenced off and has already been surveyed separately. I was told by the leaseholder that this was done by N.T. to allow regeneration of Heather.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Millrigg Knott	Equiv. L. Ward site (s): Millrigg Knott Nth and Sth
Site Ref. Code: Jun-NY4501-01	Survey date: July 2012
Recorder name (s): Tania Crockett and John Farmer	Cent. grid ref: NY 4588 0109
Valley / area: Kentmere	Altitude: 130m to 250m
Aspect: 270 degrees	Ownership

2. Stand area:

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

Yes

j) GPS number and track name / label?

N / A

k) Area of sub stands and total area?

Sub stand	1	2								Total
Area	8.37									8.37
Confidence	5	5								5

3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1	2								Total
Count	160	8								168
Method	Wt	VP								Wt
Confidence	H	M								H

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

Other habitats / vegetation types present:

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

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

Sheep Cattle Red Deer Other ...Roe deer.....

Indicators of high grazing / browsing pressure?

No DSH. Some areas with tormentil / bedstraw.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
X	X	15%	75%	5%	5%
Comments: Many of the old trees were dying back. Lots of dead wood. Few berry bearing bushes.					

Are fruit bearing trees present? Yes / no

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

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

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

Living, dead and dying junipers were evenly spread across the area. Scattering of other tree species: Ash, rowan, holly, sycamore (all old / mature). Occasional wet flushes with cotton grass, sundew and bog asphodel. Also ladies bedstraw, climbing corydalis, barren strawberry and small heath butterfly.

Lena Ward estimated that there were 300 junipers here in 1972, making this one of the few sites in the Lake District with a substantial, observable decline between the two surveys (most recent surveys find more junipers due to different counting techniques).



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Scale Knotts	Equiv. L. Ward site (s): Scale Knotts
Site Ref. Code: Jun-NY4505-01	Survey date: 20/06/2012
Recorder name (s): J. Farmer and T. Crockett	Cent. grid ref: NY45687 05536
Valley / area: Kentmere	Altitude: 270m – 300m
Aspect: 90 degrees	Ownership:

2. Stand area:

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

Sub stand	A									Total
Area	1.61									1.61
Confidence	5									5

3. Plant numbers and Juniper sub-species?

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

Sub stand	A									Total
Count	472									472
Method	VP									VP
Confidence	H									H

4. Dominant Vegetation ...wet grassland.....

Other habitats / vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

Some, but difficult time of year to assess.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
1%	5%	50%	40%	1%	1%
Comments:					

Are fruit bearing trees present? Yes / no

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-NY4505-01A	NY45672 05587	South		From rocky outcrop
Jun-NY4505-01B	NY45672 05587	West		From rocky outcrop
Jun-NY4505-01C	NY45672 05587	Northwest		From rocky outcrop

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

Few rowan and holly present but all old and in poor condition. Lots of small brown butterflies around (small heath??) and siskin present.

Restoration:

The age structure of this stand suggests that regeneration has been a problem here for at least thirty years, and the surrounding vegetation type suggests that this is likely to be a result of grazing pressure.

Continued grazing is essential for the survival of juniper at this site, with trampling creating regeneration niches for seeds, and summer grazing restricting the growth of competitors.

Winter grazing is likely to be a limiting factor for juniper regeneration though, with seedlings being browsed or uprooted when other foodstuff has been fully exploited or has lost its' nutritional value. The ideal grazing regime to allow natural regeneration and successful establishment of juniper is complete off wintering of livestock, with sheep not reintroduced to the site until April at the earliest. If this is not possible, partial off-wintering may work, but this will depend on the nature of the grazing area and the movements of the stock. Shepherding and careful placement of (or avoidance of) feed blocks, may help reduce grazing pressure around juniper in this scenario.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Longsleddale	Equiv. L. Ward site (s): Longsleddale
Site Ref. Code: Jun-NY4803-01	Survey date: 11/08/11
Recorder name (s): Mike Douglas, John Farmer	Cent. grid ref: NY 489 037
Valley / area: Longsleddale	Altitude: 280m – 300m
Aspect: Easterly	Ownership:

2. Stand area:

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

Sub stand	A									Total
Area	1.5 ha									1.5 ha

3. Plant numbers and Juniper sub-species?

Ssp communis

Sub stand	A									Total
Count	285									285
Method	W.T.									W.T.
Confidence	H									H

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

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

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

Sheep Cattle Red Deer Other

Was a grazing impact assessment carried out? Yes / no

Indicators of high grazing / browsing pressure?

There is some indication of reduced sheep grazing as previously browsed juniper now has good long-shoot growth and 4 young trees are surviving well with no signs of recent browsing. The grass sward is currently quite long (> 15cm), reinforcing other

signs of reduced sheep grazing recently. As yet there are still no juniper seedlings though, and an assessment after a winter of grazing / browsing would be useful to judge sheep impacts on juniper.

6. Other land management affecting juniper?

The juniper stand lies within the same top-fenced wall as the adjacent plantation, and will therefore receive less frequent browsing by red deer than would otherwise be the case.

Shading may be a problem lower on the slope as a variety of species

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
none	present	present	>90%	none	Present
Comments: 4 young trees seen.					

Are fruit bearing trees present? Yes / no

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Longsleddale file, August 2011, 036	NY 48854 03843	149°		Overview of stand looking down valley

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

A number of tree species grow amongst the juniper adjacent to the plantation, including birch, hawthorn and rowan. Bird species recorded included blackcap, siskin, redpoll and tree pipit. Red deer are present in the wider area (1 stag, 2 hinds and a calf were spotted), but access to the juniper is unlikely to be frequent due to the wall and wall top fencing around the plantation, which is currently maintained.

Restoration:

Grazing within the juniper stand looks to be at high enough levels to prevent seedlings coming through, so restoration work will require either further reduction in sheep numbers, off-wintering of sheep, or protection of planted trees using either fencing or tree protectors.

Problems associated with fencing include increased competition by other plant species with any planted juniper, a reduced grazing area, and if the enclosure is left in place over a long time period, there is likely to be issues with taller tree species colonising the area and shading out the juniper.

Tree protectors will get around these problems, although some weeding within the protectors will be necessary in the first couple of years after planting. Individual protectors will also allow more freedom in any planting plan, resulting in a plan that is more likely to fit in with the landscape. Weld mesh protectors of 1 meter diameter give good protection while allowing the growing tree to bush out and adapt to the wind. These may become prohibitively expensive when planting more than 50 trees, but are otherwise competitive with each tree, protector and associated stakes coming in at around £10.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Kilnstones	Equiv. L. Ward site (s): None
Site Ref. Code: Jun-NY4920-01	Survey date: 26/10/2011
Recorder name (s): John Farmer	Cent. grid ref: SD498 200
Valley / area: Longsleddale	Altitude: 300 – 320m.
Aspect: NE	Ownership:

2. Stand area:

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

N / A

p) GPS number and track name / label?

N / A

q) Area of sub stands and total area?

Sub stand	1									Total
Area	20									20
Confidence	1									1

3. Plant numbers and Juniper sub-species?

Ssp...comm.....

Sub stand	1									Total
Count	179									179
Method	WT									WT
Confidence	H									H

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

Other vegetation types present:

acid grassland

wet grassland / rushes

dry heath

wet heath / mire

Limestone grassland

Bracken

Scree

Outcrop / cliff

Limestone scree

Limestone outcrop / cliff

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

Sheep

Cattle

Red Deer

Other

Indicators of high grazing / browsing pressure?

This year's growth untouched but grazing impacts higher in the past.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
0	5	70	25		present
Comments:					

Are fruit bearing trees present? Yes / no

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

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

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

Tracks made the stand relatively accessible. Most of the juniper were widely spread amongst the heather, above the SSSI woodland. The landowner is required to plant 70 more juniper as part of his HLS. There were a large number and variety of ferns around the area, some grassland and wet heath / mire bu the dominant species was heather. Virtually no birds were seen after leaving the woodland below, but noticed a wide variety of insects.