

SD18



Sites List:

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| Jun-SD1889-01 | Smallthwaite, Thwaites Fell |
| Jun-SD1889-02 | Thwaites Fell |



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Smallthwaite, Thwaites Fell	Equiv. L. Ward site (s):
Site Ref. Code: Jun-SD1889-01	Survey date: 22/10/2011 & 10/11/2011
Recorder name (s): D Benham & B King	Cent. grid ref: SD1884 8913
Valley / area: West side of Duddon valley	Altitude: 150 – 200m
Aspect: to NE	Ownership:

2. Stand area:

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

Sub stand	A&B	C (outlier)								Total
Area	6.1	0.8								6.9
Confidence										

3. Plant numbers and Juniper sub-species?

Ssp.....

Sub stand	A	B	C							Total
Count	430	340	38							808
Method	Exact count	Exact count	Exact count							
Confidence	High	High	High							

4. Dominant Vegetation

Other vegetation types present:

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

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

Sheep **Cattle** Red Deer Other

No grazing impact assessment carried out.

Indicators of high grazing / browsing pressure?

Very little tree seedling regeneration around Junipers but much regeneration on northern side of boundary wall.

6. Other threats:

7. Juniper age:

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
2%	10%	45%	40%		3%
Comments: Many ancient collapsed junipers & tall bracken					

Are fruit bearing trees present? Yes / no

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
S1	SD18709 89133	45deg		View Coniston Old Man centre, from rock outcrop looking to Smallthwaite well (wall?)
S2	SD18709 89133	80deg		View Coniston Old Man to left, from rock outcrop looking to Woodheads well.
S3	SD18709 89133		Close	Juniper bush with sheep hole.

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

A large Scots Pine marks the eastern boundary of the tracked area. An Ash tree grows in the stream passing down the centre of the site. The only other trees in the tracked area, apart from Junipers, are small Rowans & Holly. Small Junipers grow on the upper reaches of the main and minor stream but not in a lower flat mire (probably due to grazing pressure) east of the main stream.

There is much tall Bracken which is choking some old Junipers and preventing regeneration. Most larger Junipers grow along rocky outcrops on the NE slope bounded, at the bottom, by a stone wall and mixed woods.

A number of sheep were grazing the 6.9 Ha tracked area (owned by Mrs J King & Mr Clark who have commoners grazing rights. Mrs King also has some Galloway cattle

on these fells). There is a small outlier of Junipers (sub-stand 2) on a rocky outcrop to the east of the main tracked area with some old Junipers shaded out by trees.

Birds seen :- 2 Snipe, 2 Woodcock, flock of crossbills flying over.



Uplands for Juniper Project – Survey Form

1. Site details

Site Name: Thwaites Fell	Equiv. L. Ward site (s): Thwaites Fell
Site Ref. code: Jun-SD1889-02	Survey date: 13/10/2011
Recorder name (s): M. Douglas	Cent. grid ref: SD 18050 90080
Valley / area: Duddon Valley	Altitude: 120m – 230m
Aspect: 60 degrees	Ownership:

2. Stand area:

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

Sub stand	A	B	C							Total
Area										62.32ha
Confidence										5

3. Plant numbers and Juniper sub-species?

Ssp...*J.c.comm*

Sub stand	A	B	C							Total
Count	346	343	1807							2496
Method										VP photo
Confidence	M	M	L							L

4. Dominant Vegetation ...wet heath / mire.....

Other habitats / vegetation types present:

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

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

Sheep Cattle Red Deer Other

Indicators of high grazing / browsing pressure?

Patchy grazing. High impact in the SE where some juniper have been browsed and bark stripped, alongside browsed *Erica tetralix*. Elsewhere juniper seedlings are unbrowsed.

6. Other threats:**7. Juniper age:**

Estimate Percentage					
seedling	young	mature	old	Ill	Dead
8%	36%	22%	21%	11%	present
Comments:					

Are fruit bearing trees present? Yes / no

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

Photo label / Number	Grid Ref.	Comp. bearing	Magnification	Description of fixed point
Jun-SD1889-02A	-	-		Seed collecting work party and survey Oct 2011.
Jun-SD1889-02B	SD18854 90423	230 degrees		Overview of central area of stand, taken from Penn Hill
Jun-SD1889-02C	SD18854 90423	210 degrees		Overview of southern area of stand, taken from Penn.

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

Sub site A southern most subsite, B eastern most and C main stand.

Juniper at low density across the area, mixed in with very scattered willow spp, holly, rowan and sycamore. Redwing and Fieldfare flocks appeared to be feeding on fallen juniper berries.

This is a very wet site with abundant Sphagnum spp, Tricophorum germanicum, heavily browsed Calluna vulgaris and patchily browsed Erica tetralix, with some cranberry and bog rosemary.

Proportions within different age classes were derived from a sample of 198 juniper observed on a 'W-walk' across the site.

Restoration:

This is an unusual site in that regeneration is occurring despite browsing and bark stripping of juniper taking place elsewhere in the stand. On the face of it, enough regeneration is taking place to sustain the population in the long term. Most seedlings and young bushes are in wetter areas though, where ultimate growth and reproductive output is likely to be suppressed due to sub-optimal conditions. The stand has also been confirmed as a *Phytophthora austrocedrae* infected site, with at least tens of trees suffering from this pathogen. Recent research has revealed that bushes growing in wet ground are more susceptible to this disease.

A reduction in winter sheep stocking densities will be necessary to allow regeneration to occur on drier areas, and such a seasonal reduction would also put an end to bark

stripping damage on established bushes. Although complete off-wintering is a preferred option for juniper stands, partial off-wintering may allow regeneration when accompanied by shepherding, with the aim of preventing a concentration of livestock in areas identified for natural regeneration.

Potential Planting areas:

Two planting areas were identified during a desk based survey, both within 3 km and upslope of the existing juniper. Planting at either of these sites would help to bolster the juniper population at the extreme SW of its range in Cumbria, and would help ensure against an acceleration in *Phytophthora austrocedrae* infection at the Thwaites Fell stand.

1. **Plough Fell** The drawn area of 10.58 ha would require a fence of 960m length (assuming that the existing wall to the east is stock-proof). Assuming that 60% of the area is plantable, and using a planting rate of 300 juniper/ha, 1800 juniper could be planted in the proposed enclosure. 240 taller tree species could also be planted, including rowan, birch and aspen.

2. **Buck Barrow** The drawn area encompasses 28.43ha, and assuming that walls to the west are stock-proof, this area would require 1420m of fencing. Assuming that 40% of the area is plantable, and using the planting rate of 300 juniper/ha, 3300 juniper could be planted, along with 440 taller tree species including rowan, birch and aspen.