

Appendix 5.3 Techniques used for scrub conservation, enhancement, control and clearance.Key: Lowland, *Upland and lowland*, **Upland**.

<i>ID no.</i>	<i>a) Scrub conservation</i> <i>To maintain existing areas by arresting succession</i>	<i>b) Scrub enhancement</i> <i>To increase diversity or extent of existing scrub</i>	<i>c) Scrub control</i> <i>To prevent encroachment onto other habitats</i>	<i>d) Scrub clearance</i> <i>To restore/create other habitats</i>
1	Thinning	Scrub coppicing	Cut and treat with follow up grazing; spray/burn	Cut and treat with follow up grazing; spray/burn
3		Rotational felling	Cutting and stump treatment	Clear fell and stump treatment
4	Coppice (rotational)	Coppice rotational, natural regeneration (through careful management of adjacent land)	Coppice, stump treatment and burning. Grazing	Removal with winch, cutting with stump treatment and burning (grazing)
5	Rotational cutting, some stump, foliar treatment, grazing	As (a), JCB's and large machinery where appropriate	As (b) and sheep, cattle	As (b) and rotivators, mowers
6	Coppicing of Birch (<i>Betula</i>)/Oak (<i>Quercus</i>)/Hawthorn (<i>Crataegus monogyna</i>) with Blackthorn (<i>Prunus spinosa</i>) suckers. Clearance around Crab Apple (<i>Malus sylvestris</i>)/Wild Service-tree (<i>Sorbus torminalis</i>)/Buckthorn (<i>Rhamnus cathartica</i>). Forest - accidental fires 'manage' a large % of Gorse (<i>Ulex</i>) scrub		Grazing - only 14ha at present - but proposed a further 315ha (cattle to be used). Clearance with chainsaws and stump grinding. Considering use of 'Krenite' - chemical manufactured by DuPont.	Clearance with chainsaws and stump grinding. Use of mini-brush cutter vehicle (Estesia AV88 Attila)
7			Cutting/burning/stump treatment if necessary	As (c)

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8	As (d) but without stump killing. These coppice areas being un-mowable support a tall-herb flora	Edges are coppiced to create a transitional zone with tall herbs, Bramble (<i>Rubus fruticosus</i>) etc. This is further diversified by re-coppicing short stretches beginning after c. 5 years re-growth. Similar effect has been obtained by allowing scrub to colonize neighbouring grassland edge, then coppicing short blocks.	Selective felling of larger Hawthorn (<i>Crataegus monogyna</i>)/Rose (<i>Rosa</i>) and stump treatment (Garlon) and rotational mowing, each parcel mown every 3 years and further stump treatment. Individuals/clumps of valuable native species or self-sown exotics where they reveal the history of the site, are retained. Individual large bushes are retained where visually prominent e.g. territory markers for Green Hairstreak butterfly (<i>Callophrys rubi</i>). Problem (1) This done by contractors, so cannot give too precise instructions Problem (1) Age class 3-10+ years poorly represented - bias toward very young and very old bushes. (2) Grazing to prevent Willow (<i>Salix</i>) encroachment in grassland - Hebridean sheep at one site only.	Cut down and treat stumps. Formerly burned, now stack 100mm+. Chip smaller materials into heaps (for fungi/invertebrates/ Grass Snakes [<i>Natrix natrix</i>]) or for surfacing paths. (chipper very valuable kit).
9	Coppicing on rotation, selective clearance of taller vegetation.	Coppicing, allowing succession to proceed in appropriate areas	Cut, using volunteers, contractors. Treat stump/re-growth with herbicides where necessary. Grazing has been re-introduced on some sites.	As (c)
10	Coppicing rotation	Layering, coppicing	Coppice, mow	Coppice, mow
11	Strimming/mowing off	Strimming/mowing off	Sow and weedkill	Grazing by longhorn cattle
12	Mechanical and herbicide control and through grazing	Coppicing and allowing re-growth; selective clearance etc.	Mechanical control with herbicide treatment and grazing	As (c)
13		Coppicing	Flailing/mowing	Digging out roots – Bramble (<i>Rubus fruticosus</i>), rock salt on Willows (<i>Salix</i>), ring barking on Alders (<i>Alnus</i>)
14	Hand tools, chainsaw,-coppicing	Planting of other suitable species		Coppicing and re-growth management. Uprooting where possible
15			hand pulling	
16	Coppice management	Natural regeneration, through careful management of adjacent land	Coppice management and removal of scrub with tirfor winch	Coppice management and removal of scrub with tirfor winch

17			Mechanical clear felling/ clearance (+possibly spraying with a chemical herbicide to prevent re- growth	Mechanical clearance e.g. chainsaw / brush cutter
18			clearance as required	
19	Coppicing of native species, felling and poisoning of Sycamore (<i>Acer pseudoplatanus</i>)/ Cherry Laurel (<i>Prunus laurocerasus</i>) etc.	Thinning and coppicing with some additional planting of native species	Usually uprooting of invading scrub to allow dormant seed to re-colonize	
20	Coppice	Coppice and clearance to increase edge and increase complexity of edges	Cut and poison stumps (attempt to poison stumps!). Browsing experiments using semi-feral goats	See (c). Also gradual removal by raising canopy 2-3 years before removing a tree/bush
21				Use machinery to reduce to ground level. If a low value area just introduce a cutting regime or of higher value reinstate and seed
22		Coppice (leaving older Hawthorn [<i>Crataegus monogyna</i>]/Blackthorn [<i>Prunus spinosa</i>] as standards), creating scalloped edges, clearing islands in dense stands as 'oases' with view to later connection by corridors	Cut - treat - burn - grazing	Cut - treat - burn - grazing
23	Coppice	Coppice	Clear and treat stumps	Clear and treat stumps
24	Complete coppicing of existing scrub and allowing regeneration of cut stumps	Selective coppicing of existing scrub and allowing regeneration of cut stumps.	(1) annual mowing with tractor rotary mower. (2) three year scrub removal in building/mature Heather (<i>Calluna vulgaris</i>). (3) rotational grazing with Exmoor ponies	(1) cut to ground level with clearing saw/chainsaw and burn (2) Stumps <15cm treat with herbicide (Grazon 90). (3) Stumps >15 cm stump grind and back fill material. (4) Annual mowing (3 cuts per year) with tractor rotary mower until desired heathland vegetation restored.
25			Individual pruning and tree removal at boundary of our land	
26				Cutting: chain saws or bow saws (areas are also 'managed' involuntarily by arson)
27	Coppicing		Cut and poison or cut and allow browsing	See (c)

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29	Cutting manually, treating chemically, grazing, repeated cutting by tractor	Manage existing scrub so that it becomes penetrable by thinning manually - no need to increase extent as we are trying to reverse 20 years of neglect and chemical treatment and grazing	Manual cutting or tractor and scrub master i.e. it depends what's under the scrub - ant hills etc. then no tractor and chemical treatment or repeated cutting and grazing	As (c)
30	Removal of pioneer woodland trees (Sycamore [<i>Acer pseudoplatanus</i>] /Ash [<i>Fraxinus excelsior</i>]) and the treatment of stumps. We will be introducing cyclical coppicing to scrub blocks in certain areas, to diversify age structure.	As (a) with the introduction of cyclical coppicing in certain areas.	In the past, where spreading onto chalk grassland. Scrub removal by combination of tractor mounted swipe/chainsaw following by stump treatment/regular topping by tractor of re-growth	(1) Removal from scheduled ancient monuments i.e. Round Barrows. (2) Removal from escarpment ridges, to restore open downland skyline, open up views. (3) Removal to help restore - extend quality chalk grassland areas, especially for invertebrate habitat i.e. Horseshoe Vetch (<i>Hippocrepis comosa</i>) for Blues/Silver-spotted Skipper (<i>Hesperia comma</i>) butterflies. The spread of pioneer woodland is a perceived problem upon the eastern escarpment.
31			Brashing and mowing of margins	Cutting and brashing and mowing of site
32	Coppicing or laying	Scalloping edges, opening up rides (increase scrub edge)	Grazing with cattle / annual hay cutting	Cut and herbicide stumps then grazing
33	Cut and clear , but mostly leave as barrier around outside of site.	Cut and clear glades allow to re-grow	Cut and clear, not poison, new re-growth, graze (cattle)	Cut and clear and poison, new re-growth graze (cattle)
35	Coppicing, for example in the case of Willow (<i>Salix</i>)	Small scale mosaic cutting of shrub to promote structural and age diversity	Brush cutting / felling Birch, (<i>Betula</i>) for example to prevent its invasion of heathland	Brush cutting / felling Birch (<i>Betula</i>) / Pine (<i>Pinus</i>) on heathland
36		Planting with whips		Cut at ground level during winter and treat stumps with herbicide. Mowing/sheep grazing
37	Mechanical and manpower	Planting up small areas and using plugs	Mechanical and manpower	Mechanical and manpower
38	Cutting back/ strimming	Allow it to get on i.e. leave an area to regenerate	Cut/slash	We are currently clearing some areas of scrub to encourage butterflies and wild flowers on chalk lowland. Some pockets of scrub will be maintained.
39	Coppice on 15 year rotation	Occasionally cut rides through dense patches	Grazing, Amcide/drilling of cut stumps	Removal through lifting out of ground using hydraulics of 3 ton excavator

40		Mainly coppicing with chainsaw	As (b) and chemical stump treatment	As before also mechanical flailing
42				Cutting of scrub with chainsaw, spray strips, mow regeneration or preferably reinstate grazing
43	Rotational cutting		Cutting and grazing	Combination of machine/volunteer/contractor
44	Patchwork felling, 10m diameter. Material removed and/or burned	Patchwork felling. Cut material burned or used to block paths elsewhere	Along edge initially felled (material burned), then cut with brushcutter (and eventually regularly mown - not got there yet).	As (c). No creation of habitat planned at present
45		Cutting of rides, coppicing, scalloping into scrub (but not treating stumps), allow re-growth. - structural/age diversity	Removal and treatment of stumps (brash is burnt on site or taken away). Grazing ~sheep, cattle and Exmoor ponies	As (c)
47	Coppicing; selective thinning of natural regeneration; tree shelter	Coppicing; selective thinning; tree shelters	Cut and treat stumps with herbicide	Cut and treat stumps; sometimes litter clearance to expose mineral soils to enhance recovery
48	Clear felling	New planting	Clear felling, mechanical flailing and grazing (cattle). Also herbicide treatments	As (c)
49		planting, natural regeneration	grazing, mowing	cutting and treatment with Amcide
51	Removal of invasive tree species, selective coppicing	As (a)	Removal and mowing	Removal, mowing and stump grinding
52	Mechanical mulcher/volunteers/our staff and forestry contractors	As (a)	As (a)	As (a)
101	Clearing by use of volunteers, staff using chainsaw or brushcutter	Cut by staff using chainsaw		Gorse (<i>Ulex</i>) - cut and burnt, re-growth treated with herbicide or preferably grazed or mown
102	<i>Modifying grazing regimes to allow new scrub regeneration</i>	<i>Modifying grazing levels or removal of stock temporarily</i>	<i>Cutting/Browsing Tenants routinely burn Gorse to (<i>Ulex</i>) limit encroachment</i>	<i>cutting followed by grazing stock</i>
103	Do not get involved in arresting succession. May consider it for butterfly conservation - cutting	N/A	N/A	N/A
104	None	Planting Willow (<i>Salix</i>)/Birch (<i>Betula</i>)	Gorse (<i>Ulex</i>)/Rhododendron (<i>Rhododendron ponticum</i>) clearance - using flail	As above

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105	Mainly coppice cutting - predominantly as the trees become saleable, but exceptionally at cost - but area limited due to high cost	Note - Deer damage a key cost issue, hugely increasing costs where required	Principally cutting and pulling young Pine (<i>Pinus</i>) and Birch (<i>Betula</i>) from lowland heath – c.20,000 ha in Deer Forest	Principally cutting and pulling young Pine (<i>Pinus</i>) and Birch (<i>Betula</i>) from lowland heath – c.20,000 ha in Deer Forest
106	<i>Felling/high pruning (infrequently)</i>	<i>Natural regeneration and some planting. Deer Control</i>	<i>Felling ("cleaning")/ chemical control/flailing</i>	<i>(Infrequently) felling/flailing</i>
107	<i>Reduction of grazing - removal of non-native trees</i>	<i>Minimal intervention, maintain grazing at low level</i>	-	-
108	<i>None - try to follow natural processes</i>	<i>Leave greater areas for natural regeneration</i>	<i>Some control within forest crops</i>	<i>Very rarely</i>
109	<i>No action</i>	<i>No action</i>	<i>Occasional re-spacing - mechanically or chemically</i>	<i>No action</i>
112	Just leave the bits we are prepared to retain!	None	Brushcutting, hand cutting, with volunteers in some cases, a few examples of burning on Gorse (<i>Ulex</i>) scrub	Brushcutting, hand cutting, with volunteers in some cases, a few examples of burning on Gorse (<i>Ulex</i>) scrub, but grazing is often required
113	Rotational cutting or browsing (by goats). Pollarding woodland/mature scrub edges	-	-	Cut and stump treatment - (all scrub) Removal by 360° excavator (Sea- buckthorn)
114	-	-	<i>Cutting, but presumption to leave a proportion (10%) in the form of small groups of bushes or larger areas</i>	<i>Felling - but leaving 10% canopy cover</i>
115	Coppicing	Coppicing	Chemical/sheep grazing	mechanical/chemical grazing
116	<i>Clear-fell larger woody species and climbers such as Clematis (Clematis). Plant Hawthorn (Crataegus monogyna), reduce grazing levels. Increase grazing levels to keep in check</i>	<i>Plant with stock protection</i>	<i>Pull up, cut, poison</i>	<i>Pull up, cut, poison</i>
117	N/A	N/A	N/A	N/A
118	<i>Cutting, burning cut material, chemical</i>	<i>Allow natural succession to progress - sometimes planting</i>	<i>Cutting, burning cut material or removal off site, chemical</i>	<i>Cutting, burning cut material or removal off site, chemical</i>
119	N/A	Hand cutting and tractor-mounted brushcutter	Hand cutting and tractor-mounted brushcutter + grazing	Hand cutting and tractor-mounted brushcutter plus possible treatment of stumps with herbicide.
120	Burning, Cutting, Grazing	As above plus fencing off areas to encourage regeneration	Cutting and stump treating, flail	Cutting and stump treating, flail
121	Cutting, Burning, Grazing	Cutting, Burning, Grazing	Cutting, Burning, Grazing	Cutting, Burning, Grazing
122	Removal of large trees, coppicing, thinning	Fencing to allow regeneration	cutting and stump treating	cutting and stump treating
123	N/A	N/A	occasional for archaeological sites	N/A

124	Grazing/browsing; rotational coppicing; removal of tree species from scrub areas. Gorse (<i>Ulex</i>) burning	As (a) plus some scrub clearance to create more open habitat mosaics, link glades within scrub etc. Also reduced moorland grazing or fencing to encourage scrub regeneration	As (a) plus some scrub clearance to create more open habitat mosaics, link glades within scrub etc. Also reduced moorland grazing or fencing to encourage scrub regeneration	As (a) plus some scrub clearance to create more open habitat mosaics, link glades within scrub etc. Also reduced moorland grazing or fencing to encourage scrub regeneration
125	Mainly cutting and burning with followup spraying of re-growth	Cutting, stump treatment, spraying re-growth	Cutting, stump treatment, spraying	Cutting, stump treatment, spraying, some grubbing out.
126	-	<i>Fencing out grazing animals – under planting</i>	<i>Chainsaw/scrub cutter</i>	-
128	Coppicing or removing mature tree species	-	Cutting by tractor or by hand. Grazing cattle.	Cutting by tractor or by hand. Grazing cattle. Herbicide treatment
129	Management planning/periodic intervention including cutting unwanted species. Periodic flailing to diversify age/size classes	Scarification/bracken control with herbicides	Cutting/flailing/stump treatment/foliar treatment	Cutting/flailing/stump treatment/foliar treatment and ploughing/seeding and mowing
130	<i>Thinning to lay over</i>	-	<i>Flailing/cutting and chemical treatment</i>	<i>Flailing/cutting and chemical treatment</i>
131	Cutting/coppicing	Natural regeneration/ colonisation	Cutting/swiping/ herbicide	Cutting/swiping/ herbicide
132	<i>Coppicing - usually by hand</i>	<i>Planting or natural regeneration encouragement</i>	<i>Cutting, treating or removing stumps. Coppicing</i>	<i>Cutting, treating or removing stumps.</i>
133	Cutting	-	Cutting	Cutting
134	Cutting	planting/seed dispersal	Herbicide	Cut and burn
135	Selective removal of tree specie. e.g. Ash (<i>Fraxinus excelsior</i>) on downland sites +/- stump treatment	Coppicing 'scrub in small blocks and increase edge	Cut +/- treat stumps + foliar re-growth- brushcutter or tractor mounted swipe	Cut +/- treat stumps + foliar re-growth- brushcutter or tractor mounted swipe
136	Successional cutting in coups	-	Flailing/cutting around edges - grazing or cutting and stump treatment	Cutting and stump treatment followed by sheep grazing
137	Coppice cycle, managing blocks within an area	Plant new species in desired location	Cut and treat stumps/weed wiping, grazing with livestock	Cut and treat stumps
138	Scrub control by removal and coppicing by hand	Coppicing/glade management/ride management, by hand	Control by hand and herbicide on some stumps	-
139	For Willow (<i>Salix</i>) we cut and leave. Cut and treat Gorse (<i>Ulex</i>) stumps	For Willow (<i>Salix</i>) we cut and leave. Cut and treat Gorse (<i>Ulex</i>) stumps	For Willow (<i>Salix</i>) we cut and leave. Cut and treat Gorse (<i>Ulex</i>) stumps	For Willow (<i>Salix</i>) we cut and leave. Cut and treat Gorse (<i>Ulex</i>) stumps
140	-	-	-	Cutting and stump treatment
141	-	-	-	Mechanised wet scrub clearance methods being devised
142	Periodic/rotational cutting/coppicing	-	Cutting and treatment Cutting and grazing	Cutting and treatment Cutting and grazing
143	Cutting	Cutting	Forage Harvester	Forage Harvester

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144		<i>Rotational cutting regimes in order to vary structure of existing scrub habitats</i>	<i>Manual/mechanical cutting and treatment of stumps. Uprooting. Foliar spraying (minimal)</i>	<i>Manual/mechanical cutting and treatment of stumps. Uprooting. Foliar spraying (minimal)</i>
145	Cutting blocks, strips, patches on rotation and not treating stumps	Cutting blocks, strips, patches on rotation and not treating stumps	Should be prevented by grazing or hay cuts. On some sites we pull saplings by hand (where not grazed or grazing pressure not adequate to prevent unwanted regeneration. White Poplar (<i>Populus alba</i>) suckers and Willows (<i>Salix</i>) are problems on 2 sites).	Cut and treat stumps with Amcide. On sites where we wish to convert to organic it seems stump treatment will not be allowed. This is a major problem as, despite widespread requests for help, no satisfactory alternative has been suggested.
146	Coppicing	Collect seed for propagation/planting	Felling with aftermath grazing. Treating stumps with herbicide. Coppicing	Felling with aftermath grazing. Treating stumps with herbicide. Coppicing
147	-	Open up thickets of Gorse (<i>Ulex</i>)/Blackthorn (<i>Prunus spinosa</i>) to provide more edge. In grassland/fen edge.	Latest method is to kill scrub standing, using stem notch injection with Glyphosate, this leaves trees standing. Mow areas of Bog-myrtle (<i>Myrica gale</i>) using clearing saws or tractors.	Sometimes clear scrub using tracked excavators
148	N/A	N/A	Tractor mounted swipe, some clearing saw	Tractor mounted swipe, some clearing saw
149	<i>Coppicing, removal</i>	<i>Coppicing, Rotational cutting</i>	<i>Removal, Cutting, Poisoning, Grazing, Pulling</i>	<i>Cutting and poisoning, Pulling.</i>
150	Programmes of regular cutting	Programmes of regular cutting	Cutting and treatment	Cutting and treatment.
151	-	-	Cutting and removal, usually without stump treatment	Cutting and removal, usually without stump treatment
152	<i>Trimming, planting, coppice</i>	-	<i>Cut/clear/chemical treat cut/clear/winch cut/clear</i>	<i>Cut/clear/chemical treat cut/clear/winch cut/clear</i>
153	Unnecessary - coastal site prevents succession beyond scrub	Annual planting of <i>Salix</i> spp. (Willow).	Brushcutting, hand-pulling. Encourage Rabbit (<i>Oryctolagus cuniculus</i>) grazing	Brushcutting
154	-	<i>Manual "coppicing"</i>	<i>Manual cutting then grazing with appropriate stock</i>	<i>Manual cutting then grazing with appropriate stock for grassland. On raised mires, seedlings are pulled, older birch are then treated with herbicide (Glyphosate).</i>

155	Cut, treat stumps as necessary - periodic and annual. Grazing	Cut edges or areas on rotation	Grazing/cutting.	Cut (manually)
156	Cutting with scrub cutters or manually and raking and stacking or burning cut material	Weed out problem species. Thin manually, cut with machinery or manually to create scallops and graded edges	Cutting by machine or hand and stump treatment where necessary – e.g. Gorse (<i>Ulex</i>), Birch (<i>Betula</i>).	Cutting by machine or hand and stump treatment where necessary – e.g. Gorse (<i>Ulex</i>), Birch (<i>Betula</i>).
157	Coppicing	coppice edges of blocks to create dense edge	Fencing/flail	-
158	Rotational cutting	Minimum intervention/cutting	Cutting back of scrub. Grazing	Cutting and chemical treatment of stumps
159	<i>Grazing, cutting</i>	<i>Reduction of grazing pressure, e.g. Juniper (Juniperus). Rotational cutting e.g. Gorse (Ulex) scrub on coast and uplands</i>	<i>Grazing. Cutting. Pulling young seedlings and young conifers. Winter burning.</i>	<i>Cutting, then treatment of stumps with Krenite or other approved herbicides.</i>
160	30-50m sections of old hedgerows/wood margins cut on rotation - power tools	Rotational cutting to rejuvenate 'old' stands	Removal of some scrub and stump treatment to leave a proportion	Removal of moribund scrub (Blackthorn [<i>Prunus spinosa</i>]/ Hawthorn [<i>Crataegus monogyna</i>]) and larger trees to extend grassland back to boundaries – power tools/stump treatment
161	Coppice	Rotational coppicing (plus exclusion of grazing for Juniper (<i>Juniperus</i>)- one small site only and then just localised area)	Strimming, burning, cutting, flailing, bulldozing, rotovating, treating with herbicide, spraying with herbicide, weedwiping with herbicide, pulling out (wet habitats), grazing – ponies, sheep, cattle.	Strimming, burning, cutting, flailing, bulldozing, rotovating, treating with herbicide, spraying with herbicide, pulling out (wet habitats), grazing – ponies, sheep, cattle.
162	-	Open denser pockets to maintain diversity of structure and prevent alteration to ground bog flora - stump treatment, brushcutting and chainsaw with 1:4 Roundup	-	Tractor mounted circular saw cutting followed by pesticide stump application. Digging up using excavators. Spraying Krenite and Roundup. Cutting down Pine (<i>Pinus</i>) and handweeding Pine (<i>Pinus</i>) and Birch (<i>Betula</i>) seedlings
163	-	Cutting with tractor and flail	-	Tractor and flail, application of Krenite, clearance using clearing saws, raising water levels - raise water levels - peat forming vegetation

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164	<p>Very few – Many sites with scrub present are fairly stable when considering succession due to location (e.g. upland) or natural grazing pressures of rabbit (<i>Oryctolagus cuniculus</i>) and deer. Also physical removal on rotation.</p>	<p>Usually physical removal of selected scrub on a rotational basis, and reduced grazing pressure</p>	<p>Grazing or haymaking on grassland sites physical removal - cutting and stump treatment</p>	<p>Physical removal - cutting and stump treatment</p>
165	<p>Coppicing</p>	-	<p>Raising water tables. Grazing</p>	<p>Cutting and stump treating</p>
166	<p>Cutting mature scrub on 15 year cycle</p>	-	<p>Cutting/stump treatment</p>	<p>Cutting/stump treatment</p>
167	<p>Burning/cutting</p>	<p>Burning/Cutting</p>	-	-
168	-	-	<p>Cut – treat cut stumps – burn out material at suitable location - graze</p>	<p>Cut – treat cut stumps – burn out material at suitable location - graze</p>
169	<p>Coppicing mature scrub in large blocks. Areas of typically 0.1 ha in a block on approx. 20 year rotation. Use of Hi-tip forage harvester to cut and remove cuttings in small gorse to maintain Gorse (<i>Ulex</i>)/grass habitat for Dark Green Fritillary (<i>Argynnis aglaja</i>). Also to maintain heath on chalk. Cut and treat stumps in small blocks in areas of scrub/grass mix to maintain the balance required, especially for Duke of Burgundy (<i>Hamearis lucina</i>). Species not controlled by cut and treat, e.g. Wild Privet (<i>Ligustrum vulgare</i>) and Gorse (<i>Ulex</i>) may be spot-sprayed with Garlon 2 in these situations. Swipe - used to vary age structure in gorse - approx. 6 year rotation. Hedge - cut on a 3 year rotation in sections of 30 m (60 m uncut) either with a blade or flail.</p>	-	<p>Where coppiced scrub comes back totally dominated by e.g. Blackthorn (<i>Prunus spinosa</i>) or Wild Privet (<i>Ligustrum vulgare</i>) On the edge of grassland it may be controlled by spot-spraying. Cut and treat stumps. Spot-spraying of species not susceptible to cut and treat e.g. Wild Privet (<i>Ligustrum vulgare</i>), Gorse (<i>Ulex</i>) and some thick Blackthorn (<i>Prunus spinosa</i>). Grazing with sheep and trialing goats in areas of grassland with scattered scrub and scrub/grass mix. Generally retards scrub growth and specifically used on Ash (<i>Fraxinus excelsior</i>) seedlings and Clematis (<i>Clematis</i>).</p>	<p>Use of droth to remove scrub especially for restoration of chalk heath</p>
170	<p>Naturally restricted by agriculture and poor soils</p>	<p>Hand cutting</p>	<p>Hand cutting/pulling/felling Cattle and sheep and Rabbits (<i>Oryctolagus cuniculus</i>)</p>	<p>Hand cutting/pulling/felling Cattle and sheep and Rabbits (<i>Oryctolagus cuniculus</i>)</p>

171	Coppicing along woodland/fen edge on approx. 10 year rotation to maintain standard diversity of scrub fringe. Extensive grazing schemes coming up soon may enhance this.	-	Removal of scattered scrub by cutting, stump treatment by herbicide (Roundup) or grinding, follow-up foliar treatment (Roundup)	Removal of scattered scrub by cutting, stump treatment by herbicide (Roundup) or grinding, follow-up foliar treatment (Roundup). Large-scale mechanical scrub/woodland removal starting in Broads this winter, using tracked vehicle to cut and chip, rather than gangs with chainsaws, to reduce ground damage in wet areas.
172	<i>Grazing, cutting</i>	<i>Managed grazing. Stock exclusion. Enrichment by planting</i>	<i>Cutting, herbicides</i>	<i>Cutting, herbicides</i>
173	<i>Gorse (Ulex) cut small area each year in Feb/March allow to regenerate and graze from July. The grazing effectively kills off tree species but allows Gorse (Ulex) to get away</i>	-	<i>Birch (Betula)- < 1 m tall spray with Krenite July-Sept – > 1m cut, leave or chip if large amounts spray following Summer with Krenite.</i>	-
174	Coppicing, periodic cutting of scrub boundary	Control of invasive species e.g. Sycamore (<i>Acer pseudo-platanus</i>). Coppicing to create range of age structures	Cutting and removal; stump treatment with herbicides; control of re-growth and general control with goats and ponies. Some grubbing/bulldozing with removal of litter layer.	Cutting and removal; stump treatment with herbicides; control of re-growth and general control with goats and ponies. Some grubbing/bulldozing with removal of litter layer.
175	Coppicing	-	Clearance by hand/machine depending on ground conditions slope etc., followed by chemical treatment of re-growth or cut stumps with Trichoplyr or Glyphosate	Clearance by hand/machine depending on ground conditions slope etc., followed by chemical treatment of re-growth or cut stumps with Trichoplyr or Glyphosate
176	-	-	Cutting by chainsaw/hand and treatment of stumps	Cutting by chainsaw/hand and treatment of stumps and grazing with range of cattle/sheep etc.
177	Rotational coppicing to improve age structure	Rotational coppicing to improve age structure	Scrub removal usually with stump treatment; also appropriate grazing	Scrub removal usually with stump treatment; also appropriate grazing
178	Periodic clearance, then allow to re-grow coppicing	Coppicing, removal by machine - allowed to re-grow	Cut/treat stumps (remove by machine)	(Cut/treat stumps) Remove by machine. Pull saplings up.

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179	<p>1. Coppicing - clearfell in groups or along edges to renew succession, sometimes fenced to protect from Deer. 2. Layering - "hedge-laying" blocks or strips of scrub, esp. along edges.</p> <p>Creates 'instant' 5-year old scrub structures and avoids damage to Black Hairstreak (<i>Strymonidia pruni</i>) eggs in winter.</p>	<p>1. Coppicing - clearfell in groups or along edges to renew succession, sometimes fenced to protect from Deer. 2. Layering - "hedge-laying" blocks or strips of scrub, esp. along edges.</p> <p>Creates 'instant' 5-year old scrub structures and avoids damage to Black Hairstreak (<i>Strymonidia pruni</i>) eggs in winter.</p> <p>3. Grazing to produce grass/scrub mosaics.</p>	Clearing/coppicing as necessary	<p>1. Clearing/Coppicing – Hawthorn (<i>Crataegus monogyna</i>), Rose (<i>Rosa</i>), Wild Privet (<i>Ligustrum vulgare</i>) etc.</p> <p>2. Clearing and chemical treatment (foliar application of "Roundup" - Turkey Oak (<i>Quercus cerris</i>))</p>
180	Grazing/browsing; cutting	-	Grazing/browsing; cutting	Grazing/browsing; cutting
181	-	<p>Control stock grazing (fencing; paying for differential grazing)</p> <p>Rabbit (<i>Oryctolagus cuniculus</i>) control (all forms but mostly netting and drop boxes)</p>	<p>Small scale - pulling saplings; cutting +/- stump-treatment</p>	-

182	Rotational coppicing	Re-introduction of grazing to produce grass/scrub mosaic. Growth of young Juniper (<i>Juniperus</i>) from seed/cuttings and planting out in protected exclosures	Sheep grazing, clearance and treatment of stumps	Various means inc. removal with machinery, chainsaw, ring-barking of young trees, manual cutting using volunteer groups
183	Extensive grazing. Clearance and stump treatment	Local coppicing, particularly on habitat transitions i.e. scrub - fen, heath	Extensive grazing. Clearance and stump treatment	Extensive grazing. Clearance and stump treatment
184	<i>Cyclical cutting on a small scale – I suppose every 15-20 years or so (though we're nowhere near achieving a cycle as yet).</i>	<i>Cyclical cutting to create mosaics of scrub of different ages. Exclosure to allow grassland to develop to scrub. Stump treatment (with Triclopyr) to create frilly edges, glades etc. in extensive blocks. Sheep grazing/cattle grazing to maintain mosaics.</i>	<i>Sheep grazing July - March (though this relatively late turn-out date may in fact be allowing much Hawthorn (Crataegus monogyna) in - so may change).</i>	<i>Mechanical - bowsaw, loppers, chainsaw, brushcutter and subsequent herbicide applied with paint brush (Timbrel), though we are moving more to accepting shorter term cyclical cutting as a chemical free alternative. Would like to try cutting followed up with browsing stock.</i>
185	<i>Cut/coppice to stop succession to woodland</i>	-	<i>Undercliffs - mowing twice a year on grassland area</i>	<i>Undercliffs - mowing twice a year on grassland area</i>
186	Rotational cutting at different ages	None	Cutting and stump or foliar herbicide	Cutting and burning
187	Chainsaw clearance/stump treatment (Farmer preferred). Have pulled out Willow (<i>Salix</i>) in past on Otmoor (and got Fen Violet [<i>Viola persicifolia</i>] back in its place!)	Coppicing	Chainsaw clearance/stump treatment (Farmer preferred). Have pulled out Willow (<i>Salix</i>) in past on Otmoor (and got Fen Violet [<i>Viola persicifolia</i>] back in its place!)	Chainsaw clearance/stump treatment (Farmer preferred). Have pulled out Willow (<i>Salix</i>) in past on Otmoor (and got Fen Violet [<i>Viola persicifolia</i>] back in its place!)
188	Grazing. Clearance and chemical control.	Light grazing regimes.	Grazing and chemical.	Clearance. Chemical. Grazing.
190	Cutting on rotation	Cutting in more <i>ad hoc</i> way	Mowing, herbicidal control, limited amount of mattock work on fens	Cutting and stump treatment. Mechanical removal roots and all - very limited. Hand removal - very limited
191	Removal by chainsaw/clearing saw. Grazing by cattle/ponies/sheep.	Coppicing of scrub using chainsaw	Removal by chainsaw/clearing saw. Grazing by cattle/ponies/sheep. Spraying using approved chemical -grazing by cattle/ponies/sheep.	Clearance by chainsaw/clearing saw. Clearance using tracked machines