

# Managing scrub on a sand dune system



Dune scrub can be an important habitat, providing food and shelter for some species of birds and invertebrates. However, if left unmanaged it can be detrimental to a dune system and the specialist species that survive there, quickly colonising areas of sand dune, enriching the sand with nutrients, altering the water table, reducing habitat connectivity and shading dune slopes.

### Why remove scrub?

Dune scrub is a natural habitat that would often occupy the older, more inland areas of an unaltered sand dune system. However, climate change combined with the loss or decline of natural grazers such as rabbits has meant that the growth of scrub has become more widespread.

The introduction of non-native species, such as Sea Buckthorn (native to the east coast of Britain), Japanese Rose and White Poplar, has exacerbated the issue. These non-native invasive species spread rapidly and form large, dense, monocultures lacking in floral diversity.

Scrub grows vigorously in damp areas and can be of particular concern for Natterjack Toads and other dune slack specialists that favour areas of shallow but open water. Scrub lowers the water table meaning these shallow slacks may not flood sufficiently for breeding. Where scrub grows in dense patches it is also a barrier to movement, reducing habitat connectivity and increasing fragmentation of breeding pools. Scrub can also shade dune slopes meaning species such as Sand Lizards and Northern Dune Tiger Beetles are unable to utilise the open sand for egg laying, basking and burrowing.

### Before you start

**Timing:** Scrub removal should only take place between October and February, outside of bird-nesting season.

**Planning:** Always obtain the landowner's permission to carry out the work. Be aware of possible restrictions on

### THIS HABITAT MANAGEMENT SHEET COVERS THE FOLLOWING INFORMATION:

- Why dune scrub needs managing
- The species the work will benefit
- When to carry out the work
- Different scrub removal techniques
- Removing material from site
- Case study examples of scrub removal on a sand dune system



*Scrub being cut and burned on site during a volunteer task. Ash should then be removed from site.*

designated sites such as a nature reserve or SSSI; seek consent where required. Depending on the location, type and size of trees, they may be used by bats for feeding or roosting, so surveys may be required. Check whether a Felling Licence is required and whether a Tree Preservation Order is in effect.

### Scrub removal techniques

**By hand:** Scrub may be cut repeatedly every year, or herbicide may be applied to cut stumps to prevent regrowth. If treating with herbicide, leave a small stump (~5cm) so they are easier to find and can be cut off at a later date, and if not, make the cut as close to the ground as possible. Herbicide is much more effective but does mean some organic matter is left behind enriching the soil.

Scrub may also be dug-out to remove the plant and as much of the root system as possible. This is a time-consuming technique but doesn't involve the use of chemicals or heavy machinery and creates disturbed ground which is favourable.

When clearing scrub by hand ensure a safe distance between individuals of at least 2m or the height of the tallest tree.

**By machine:** Areas of scrub may be cut or mown repeatedly using machinery such as a tractor mounted mower. This may be the quickest and most cost-effective method, but this will need to be repeated on an annual basis to manage regrowth. An excavator (or similar machinery) may be used to dig or rip-out scrub, including the root system. This method may be combined with the excavation of new dune slacks or the creation of bare sand patches.

### Disposal of material

It is important to remove all cut or excavated material from the site to prevent the build-up of organic matter and nutrient enrichment. The method for disposal depends on weather, location and accessibility. The cheapest technique is to burn the material on-site, however this depends on weather conditions and proximity to urban areas. It is also not environmentally sensitive and can result in enrichment of the soil if the ash is not removed from site. Cut material may be chipped and taken off site depending on accessibility, but this may be costly and time consuming. If using an excavator, material may be buried by excavating a hole 2m in depth, filling with the cut material and capping with fresh sand.

### Managing cleared areas

**Grazing:** Where natural grazers (such as rabbits) are abundant, this can be effective at limiting scrub regrowth and maintaining a short sward. Sheep create an even, short sward and are effective at causing light disturbance on slopes. Cattle cause greater levels of disturbance, and by grazing more unevenly create a varied vegetation structure which can be important for biodiversity. However, both avoid woody vegetation, preferring younger and more tender foliage. Livestock that can tolerate woody (including thorny) vegetation include goat and deer.

**Mowing:** To supplement grazing, or where grazing isn't available, annual mowing in late-summer / early-autumn after plants have set seed, will keep vegetation short and prevent encroachment of scrub and invasive species. Remove cuttings to prevent a build-up of organic matter and soil enrichment.



*Annual mowing maintains a short sward and prevents scrub growth  
© Barry Smith, Natural England*

**Example 1: Scrub removal and slack creation. Altcar Training Camp, Merseyside**

Sea Buckthorn was mechanically excavated from a depression within the dune system and its removal revealed the presence of damp sand. The Sea Buckthorn was buried in an adjacent, north-facing dune ridge. As the excavator had already removed the layer of vegetation and top-soil, the decision was made to dig down into the damp sand by another 1-1.5m, creating a new dune slack. The extra bare sand was then used to cap the buried vegetation and topsoil. This new pool was situated in an ideal location, close to existing breeding Natterjack pools and surrounded by tall dune ridges with varying aspects and a good mixture of vegetation cover. This work was carried out alongside turf stripping large swathes of dune to create bare sand habitat - ideal for hunting Natterjack Toads.

**Example 2: Sea buckthorn removal. Ainsdale and Birkdale Sandhills Local Nature Reserve.**

This area had a reasonable population of Sand Lizards which had been driven out of the area because of scrub encroachment. Since 2017, volunteers have cleared 3,300m<sup>2</sup> of Sea Buckthorn using a combination of cutting and digging-out by hand. A 20% solution of herbicide (glyphosate) was used to treat cut stumps. Digging-out by hand took a significantly longer period of time compared to cutting but did mean that no herbicide was used. Monitoring the area, it was clear that cutting combined with herbicide application was most effective at limiting regrowth whereas digging-out still resulted in some regrowth in the following years.

The removal of scrub in this area has opened up southerly facing dune slopes as potential egg-laying sites, increased the area of bare sand and encouraged more sand movement.

**Example 1: Before**



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**Example 2: Before**



**Example 1: After**



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**Example 2: After**

