

Appendix 11.2

Management recommendations
for non-native plant species
occurring in the vicinity of the
proposed development

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Sea buckthorn

It is recommended that all Sea-buckthorn is removed. Dublin City Council has removed some stands of Sea Buckthorn in the recent past at North Bull Island. Grubbing up of plants using an excavator was the most successful method in the sand dune habitats at Bull Island, removing root material as well as stems and branches for disposal, preferably by burning or incineration. Dublin City Council staff at North Bull Island have attempted several control methods in conjunction with some volunteer groups including Conservation Volunteers from Fingal. Some large areas were cut and the stumps were painted with Glyphosate herbicide. This method had variable results and there was some regrowth in these areas. Volunteers have also been used to pull up seedlings.

At Arklow Harbour, four mature shrubs of Sea buckthorn are present in roadside planting. Currently, the only mature shrub that has suckering growth associated with it has been damaged previously. Grubbing up of Sea buckthorn plants is not considered an appropriate first approach at this site; felling with safe removal for disposal by burning or incineration, together with stump treatment, is recommended.

Spanish bluebell

The native bluebell species, *Hyacinthoides non-scripta*, bears a loose one-sided raceme of tubular, purplish-blue, scented flowers; the perianth segments are united at the base and strongly curled back at the tip. The non-native Spanish Bluebell *Hyacinthoides hispanica* has more numerous, erect, dark blue flowers arranged around the flowering stem, is less strongly scented than the native species, and the perianth segments are weakly curved back at the tip. Hybrid plants, intermediate between these two, and with a range of colours from white through pink to shades of blue, are common (Parnell and Curtis, 2012, Stace, 1991).

In addition to hybridisation with the native species, the non-native Spanish Bluebell could be spread through excavation at known locations for the plant and moving of excavated soil containing plants or bulbs to new sites. Small clumps of Spanish and hybrid bluebells at TSN1 can be avoided during works. If this is not feasible, two approaches are possible, depending on the time of year during which works are carried out. If Bluebell leaves are visible above ground (typically between November and May/June) individual clumps of plants including the bulbs could be dug up manually, removed in a secure container, and destroyed (e.g. burned). Alternatively, if above ground leaves and flowering stems are not present (typically June/July to October) soil excavated in the vicinity of recorded plants should be stored temporarily and back-filled at a depth of more than 0.5m within in the area from which it was excavated.

Buddleia

Buddleia is listed as non-native invasive plant species in the Transport Infrastructure Ireland (incorporating the National Roads Authority) Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Road Schemes (Revision 1, December 2010). The NRA Guidelines give recommendations on the control of Buddleia, including the following extracts:

‘As buddleia is a plant that favours disturbed sites, physical grubbing of plants can provide ideal conditions for the germination of seeds. Care needs to be taken to ensure revegetation of controlled areas is undertaken swiftly. The branches of buddleia are capable of rooting as cuttings, so care should also be taken to ensure material is disposed of in a manner to avoid this risk. When it is cut, Buddleia grows back from the stump very vigorously. Mowing of young plants does not provide control as they re-sprout with vigour. Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix’.

Depending on when individual works are carried out at Arklow, individual flowering Buddleia plants will be present in or adjoining works areas. Plants within works areas should be cut back and roots grubbed up and placed in skips for safe disposal, and it is recommended that any branches overhanging works areas are cut back, with the agreement of the land owner or householder, to avoid branches being torn off by machinery movement, and also to minimise the risk of Buddleia seed dispersal. Seedling buddleia plants can be removed manually from newly grassed areas prior to mowing.

Montbretia *Crocsmia X crocosmiflora*

Montbretia is a perennial herb that grows from underground corms. The corms form linear chains with the youngest at the top and the oldest buried deepest in the soil. The chains are fragile and corms easily break off giving the plant a ready means of spread. The linear leaves are up to about 500mm in length and may not dieback completely in winter in milder areas. The bright reddish-orange flowers are produced in a loose terminal panicle on slender stems up to 600–1000m in height. The flowers are capable of producing viable seed which further aids the spread of the plant. Montbretia has naturalised itself in many parts of Ireland, especially in the south-west where it is very common along road banks and hedgerows. It is also frequent along watercourses and lakeshores (NRA, 2010).

Montbretia is present on the revetment immediately north of the WwTP site boundary. The NRA guidelines recommend that where *Crocsmia X crocosmiflora* infestations are limited in extent, as is the case here, the entire stand can be excavated and buried at a depth of at least 2m, or incinerated or disposed of to a licensed landfill. The corms are very hardy and are not suitable for composting.

Laurel

Laurel (Cherry Laurel) *Prunus laurocerasus* is a large non-native evergreen shrub, widely planted as an under-storey shrub in woods and demenses and also used as hedging. It is listed as a High Impact Invasive Species by the National Biodiversity Data Centre. It is not listed in Part 1 of the Third Schedule of the European Communities (EC) Birds and Natural Habitats Regulations 2011-2015 currently, nor is it listed in the Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Road Schemes (Revision 1, December 2010). National Biodiversity Data Centre information on Laurel indicates that it spreads by layering and suckering and that its fruit may be eaten and the seeds dispersed by birds.

Personal observation indicates that young growth with green twigs will dry out and become un-viable when cut and would need cut ends to be buried in soil to facilitate growth from soft-wood cuttings, but that older cut twigs and branches left lying on bare or sparsely vegetated soil will readily root and form new plants. It is considered likely that this is the most common source of spread.

Laurel occurs as mature suckering plants at the Alps, and may need to be cut back to facilitate access to works areas. Any cut branches should be placed in skips for safe disposal, and removed for burning or incineration or to a green waste handling facility capable of either segregating and safely disposing of Laurel, or capable of chipping and composting mixed plant material at a sufficiently high temperature and for a sufficient length of time to render the Laurel unviable.