Consultancy Services

Ecological Advice & Solutions

Laxey WWTW, Laxey, Isle of Man

Invasive Plant Eradication Technical Note

April 2020

Control sheet

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The information which we have prepared and provided is true, and has been prepared and provided in accordance with the BS42020 2013 and Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Signed (Author)
Electronic Signature

Andree Dubbeldam

Signed (QA)
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Summary

In June 2018 the Manx Wildlife Trust submitted a Preliminary Ecological Appraisal Report that recommended the control or eradication of four invasive species recorded within the Laxey WWTW proposed development site. Three are on Schedule 8 of the Isle of Man Wildlife Act and one species not on Schedule 8 is a recognised invasive non-native species (INNS) that can cause harm to native habitats.

This document is a technical note outlines the advice and methods required for their control and eradication.

Biography

Andree Dubbeldam is an Ecologist, botanical specialist and author with over 15 years' experience of the species and habitats of the Isle of Man. Key professional skills are habitat assessment, detailed botanical survey, habitat management and practical conservation. He is DEFA licensed for work with Schedule 7 plant species.

1.0 Three-Cornered Leek (*Allium triquetrum*) (Schedule 8) Control Sheet

1.1 **Overview:** The 3-cornered leek is the most potentially ecologically damaging species on site. It is a perennial bulb. It is likely to have arrived on site by planting for its attractive amenity qualities. It rapidly spreads by seed to form large colonies. It is catholic in terms of conditions it can thrive, from sun to shade, dry to wet soils, acid to alkaline soils and lowland to upland. It can grow down to the mean high tide mark. On this site, the potential for spread would eventually encompass most of the ecologically fragile and important coastal habitat running north to Dhoon Glen. The level of damage could be to squeeze out most ground-flora species, thus effectively eliminating the ecological significance of the affected area.

1.2 **Extent on site:** The species is restricted to a small part of the site between the cabins and the wooded slope. The springs behind the cabins have outlier populations.

1.3 **Control Strategy:** Total eradication

1.4 **Control Methodology:**

- 3-cornered leek needs to be identified by a competent ecologist when in full leaf from mid-Feb to end May.
- Each clump of plants needs to be located and the extent of seedlings marked
- Plants including surrounding seedlings should be dug up with surrounding 200mm vegetation to 300mm depth.
- Plants should be disposed of by incineration or deep (2m) burial.
- Areas treated should be monitored for 2-3 years after control to ensure 100% control has been achieved.

Figure 1 Representative photograph of Three Cornered Leek

2.0 Hybrid Bluebell (*Hyacinthoides x massartiana)* (Schedule 8) Control Sheet

2.1 **Overview:** This bluebell is a hybrid between the native bluebell and Spanish bluebell. It is a perennial bulb. It is on Schedule 8 because of its aggressive spreading abilities into native habitats and its ability to back-cross into native bluebell populations (via pollinating insects). It spreads via seed, back crossing pollination into existing bluebell populations, but its entry to this site was probably from fly-tipping of contaminated soil and garden refuse. The potential harm on site is this large population will gradually introgress into the large native bluebell population that extend for >10 ha to the north. Its ability to grow in more open habitats means that it can become a competitive weed in many open and shaded habitats.

2.2 **Extent on Site.** The main population of hybrid bluebell is at the base of the slope below the woodland area, but through the movement of soils, it has spread further. Small scattered clumps are found in many places in the flat 'mown' area. A small secondary population is at the top of the site at the permissive footpath entrance. There are clear signs that scattered back-crossing into the native bluebell population has already occurred on site.

2.3 **Control Strategy:** >95% eradication. Full control is probably not possible as introgression into the native population has occurred. By controlling the vast majority of plants, the assumption will be that the native population will back-cross with the residual plants to gradually dilute the non-native gene stock.

2.4 **Control Methodology:**

- Hybrid bluebell identified by a competent ecologist when in full leaf from mid-Feb to end May.
- Each clump of plants needs to be located
- Plants including surrounding seedlings should be dug up with surrounding 200mm vegetation to 350mm depth. (more so in spoil heaps, where some bulbs may be at considerable depth.
- Plants should be disposed of by incineration or deep (2m) burial.
- Areas treated should be monitored for 2-3 years after control to ensure adequate control has been achieved.

Figure 2 Representative photograph of Hybrid Bluebell

3.0 Himalayan Balsam (*Impatiens glandulifera*) (Schedule 8) Control Sheet

3.1 **Overview:** Himalayan balsam is an annual that flowers from early to late summer. It tends to spread by seed along river-banks and into wetland and disturbed habitat. As a 1.5m high species it grows taller than most native plants and when it grows at a great density can swamp out much of the ground-flora leaving bare riverbank in the winter. Once populations get established they can seed new populations down-stream. As well as spreading as a water-borne seed the species also spreads though explosively projected seed that can land over 2m from the seeding plant. The potential harm on this site is to the riverside vegetation and possibly further inland.

3.2 **Extent on Site:** This has only been recorded as a single plant on-site on the riverbank of the Laxey River, and this was pulled up. The species is common in the upper catchment of the Glen Roy branch and occasional elsewhere throughout the Laxey River catchment.

3.3 **Control Strategy:** Vigilance. By annual monitoring the species can be prevented from establishing on this site.

3.4 **Control Methodology:**

- Workers should be trained to be able to identify balsam.
- Every June a 10 minute walk of the riverbank should be carried out to identify and control Balsam.
- Balsam should be controlled by pulling (roots and all) the entire plant.
- Balsam can be left to wilt and die on site, taking care not to allow the roots access to bare damp mud, where it can re-root.

Figure 3 Representative photograph of Himalayan Balsam

4.0 Alexanders (*Smyrnium ol usatrum*) Control sheet

4.1 **Overview**. Alexanders is an early flowering biannual plant native to Southern Europe. It self-seeds readily and will form large, dense colonies. Its tall, early, dense foliage smothers many ground-flora species. It can spread at a very rapid rate in rough ground, woodlands and verges. On this site it would have the capacity to spread in through the lower parts of the woodland, riversides and rough grassland areas. It requires some fertility in soils, so is unlikely to spread out of the site and into the wider coastal habitats away from the Laxey River.

4.2 **Extent on site.** At time of recording in 2018 the species was limited to a few plants around the roadside entrance. Infestation was at its earliest stages.

4.3 **Control Strategy:** Eradication.

4.4 **Control Methodology:**

- Alexanders needs to be identified by a competent ecologist in April
- Each plant should be dug up including the roots. In dry weather the plants can be left to wilt on the surface, otherwise bag up and destroy.
- It is rare to get all the plants in the first year of control and a second mop up should be conducted 12 months after first.

Figure 4 Representative photograph of Alexanders

5.0 Additional species

5.1 Previous reports acknowledge the presence on site of Montbretia (*Crocosmia x crocosmiiflora*) and Hottentot Fig (*Carpobrotus edulis*) but without further detail. Both species are Schedule 8 invasives and will need to be identified during visits for other invasive plant species.

Both species can be controlled/eradicated by careful excavation and incineration.