



Provision of Biosecure Corridor

**Laying Jute Corridor at Slipway on Loughbrick Bay,
Lough Arrow in 2020**



September 2020

INTRODUCTION

INVAS Biosecurity Ltd. (INVAS) was commissioned by IT Sligo, on behalf of the Interreg VA CANN Programme, to conduct baseline macrophyte and invasive alien plant species (IAPS) surveys on Lough Arrow in 2018, with follow up management and control programmes, where necessary.

BASELINE SURVEY

During the macrophyte survey on Lough Arrow in summer 2018, the IAPS *Elodea nuttallii* was the most frequently recorded aquatic plant species, present in 21 of the 27 transects examined on the lake. This is a submerged macrophyte that grows optimally in water from 1 to 3m deep, although it can grow in water to 5m deep. The deepest it was recorded growing in Lough Arrow was 4.5m in Loughbrick Bay, on the eastern side of the lake.

Elodea nuttallii is native to North America, first recorded in Ireland in the early 1990s, and is currently widespread in lakes and large rivers in the country. It is a perennial plant that is capable of producing extremely dense stands that can fully occupy the water column in watercourses to 3m deep. Only female plants are present in Ireland and the plant's primary dispersal mechanism is *via* fragmentation, where even short stem fragments (< 10cm long) can produce roots from nodes and readily establish new colonies. The plant is quite adaptable regarding trophic preference, although it is most prolific in eutrophic waters.

It is not known when or how *E. nuttallii* was introduced to Lough Arrow but it was not recorded when a macrophyte survey of the lake was conducted by Central Fisheries Board (CFB) in 2001. It is probable that the plant was introduced inadvertently on an angling boat or trailer that had travelled from an infested water body. One of the bays where this invasive species achieved its greatest vegetative expression was Loughbrick Bay, where it grew densely and out-competed most other macrophyte species, including the keystone *Chara* species.

Control of *Elodea nuttallii* with Jute Matting in Loughbrick Bay, Lough Arrow

Because of the abundance of *E. nuttallii* vegetation in Loughbrick Bay and because this is one of the major access locations to the lake for anglers and other water users, Loughbrick Bay was selected for treatment with jute matting. The jute mat is laid on top of the weed to block out incident light and to kill the target vegetation. The jute matting technique was very effective in killing another submerged IAPS in Lough Corrib (*Lagarosiphon major*) and it was anticipated that it could offer the same weed control advantages with *E. nuttallii* at this site. The initial jute laying operation at this location was conducted in late September 2018. Trials using single and double layers of jute were conducted at this location. The jute mats were strategically laid to create a 'biosecure' lane or corridors (i.e. free from strands of *E. nuttallii*) out from the slipway for anglers, boaters and other water users.

The efficacy of the jute matting trial was assessed one year later, in September 2019. The results demonstrated clearly that the installation of jute mats over dense beds of *Elodea nuttallii*, whether as a single or double layer, significantly curtailed the growth and expansion of this invasive species, and may have the capacity to bring about its eradication at certain sites. The jute mat acts by restricting incident light to the plant, which is unable to grow through the small pores in the mat to reach the light. By contrast, at least a number of the native *Chara* species present in the lake have been proven capable of penetrating the jute mat pores and forming abundant stands on the jute material. This suggests that the use of jute matting not only rids the site of the ecologically damaging invasive plant *E. nuttallii* but it creates conditions where native charophytes, widely inhabited by trout-food invertebrates, can continue to grow and expand. Nor does the jute have to be removed from the site as it is naturally biodegradable.

Creation of Upgraded Biosecurity Corridor at Loughbrick Bay Slipway in 2020

Based on the results from the trials work in 2018 and 2019, it was decided to upgrade the biosecurity corridor at the Loughbrick Bay slipway in 2020. This is one of the main access and egress locations used by anglers and other water users in Lough Arrow and it was deemed important to ensure that little or no *E. nuttallii* was present here that could attach to engines or trailers and be inadvertently carried to other watercourses.



Plate 1. Boat pulling jute mat into place in Loughbrick Bay in September 2020. (See also front cover of this report.)

In September 2020 a double layer of jute matting was laid in front of the main slipway for a distance of c. 100m into the lake (Plate 1).



Plate 2. Scuba divers preparing to secure the jute mats on the lake bed and to stitch the layers together.

Four layers of jute were laid side-by-side and stitched together on the lake bed by SCUBA divers (Plate 2). The area of lake bed covered was c. 2,000m².



Plate 3. Buoys prepared to delineate the biosecurity corridor in Loughbrick Bay in 2020.

Sets of buoys, rope and chain were acquired to clearly delineate the corridor for anglers and other boat users (Plates 3 and 4). Information signage that describes the purpose of the biosecure corridors will be prepared and installed at the access point to the slipway at Loughbrick Bay. This will be positioned beside the Disinfection Station, placed at this site in 2019, which is used by anglers to wash their boats, engines and fishing gear before entering or leaving the lake.



Plate 4. Green and red buoys marking the double layer of jute laid on the lake bed in the vicinity of the slipway on Loughbrick Bay in September 2020.

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20th September 2020

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