Current distribution of *Spartina anglica* in Northern Ireland
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Executive Summary

1. One of the greatest problems facing conservation in the British Isles is the spread and establishment of introduced species. Common cord-grass (*Spartina anglica*) is a highly invasive species which causes extensive ecological damage to intertidal habitats particularly mudflats and saltmarsh.

2. The current survey represents the second of a three phase survey to establish the extent of cord-grass invasion and colonization throughout Northern Ireland.

3. Five sites were surveyed during November and December 2008 including Roe Estuary (Lough Foyle), Horse Island, Kircubbin and The Dorn (Strangford Lough and Dundrum Bay).

4. Clumps of cord-grass were mapped to an accuracy of less than 1 metre. Small patches were recorded as a spatial point associated with an estimate of patch size (usually <1-3m). Large swards were mapped as defined polygons within which coverage was recorded as patchy or continuous.

5. Cord-grass was recorded as present at all sites surveyed. Maps showing the location of each patch of cord-grass are presented and form a baseline against which future surveys can quantify temporal change.
Introduction

Cord-grass species (genus *Spartina*) colonize a wide range of substrates from soft muds to shingle in sheltered areas. There are currently four species present in the United Kingdom but only the small cord-grass (*Spartina maritima*) is native. During the late 1800s the smooth cord-grass (*Spartina alterniflora*) was introduced from the east coast of North America and hybridised with the native species resulting in a sterile diploid hybrid (*S. x townsendii*). Subsequently, a fertile amphidiploid hybrid arose called the common cord-grass (*S. anglica*).

Common-cord grass was extensively planted throughout Britain to stabilise soft sediments (Hubbard & Stebbings, 1967) and quickly spread along intertidal mudflats. Its success is largely attributed to the ability of its seed to lie dormant for many years prior to rapid expansion over a relatively short period. It also forms vegetative clumps which coalesce to creating extensive monospecific swards (Doody, 1984). These threaten species of conservation concern, such as over-wintering wader populations, which are prevented from foraging in the underlying soft sediment.

Common cord-grass established in Northern Ireland from 1920-1950. It is particularly prevalent throughout Strangford Lough, County Down, where it was introduced to aid sediment accretion during the 1940s. It also occurs in Carlingford Lough, Dundrum Bay and Lough Foyle.

In Northern Ireland, cord-grass out-competes and replaces native eel-grass (*Zostera marina*), on which the light-bellied brent goose depends (*Branta bernicla hrota*). This is one of the highest priority species for conservation action in Northern Ireland and has a Species Action Plan (SAP).

In accordance with the objectives of the Northern Ireland *Spartina* Control Group, this project aimed to further assess the current distribution of cord-grass at a number of priority sites throughout Northern Ireland and produce baseline maps to aid future management strategies.
Methods

This survey represents the second of a three phase survey of the extent of cord-grass invasion and colonization throughout Northern Ireland. Five sites were surveyed during phase 1 (January and February 2008) within Strangford Lough including Newtownards, Comber Estuary, Greyabbey, Doctors Bay and Gransha Point (Kelly et al. 2008). A further five sites were surveyed during phase 2 (November and December 2008) including:

1) Lough Foyle
   a. Roe Estuary

2) Strangford Lough
   a. Horse Island
   b. Kircubbin
   c. The Dorn

3) Dundrum Bay

Clumps of cord-grass were mapped to an accuracy of less than 1 metre using a Global Positioning System (Trimble GeoXT, 2005). Small patches were recorded as a spatial point associated with an estimate of patch size (usually <1-3m). Large swards were mapped as defined polygons within which coverage was recorded as patchy or continuous.

Phase 3 is to be deployed during autumn 2009 and will complete the survey with a further five sites including an appraisal of the efficacy of cord-grass control methods.
Fig. 1  Sites surveyed for common cord-grass during phase 1 (January and February 2008) including Doctors Bay, Gransha Point, Comber Estuary, Newtownards and Greyabbey (blue boxes) and phase 2 (November and December 2008) including the Roe Estuary, Horse Island, Kircubbin, The Dorn and Dundrum Bay (red boxes).
Results & Discussion

Roe Estuary, Lough Foyle

Two small islands were surveyed (Fig. 1). Cord-grass dominated both the centre and foreshore of the western most island being present in dense patches on the western shore and becoming more patchy toward the south-eastern shore. Cord-grass was absent from the eastern most island.

Fig. 1  Cord-grass distribution in the Roe Estuary, Lough Foyle.

Horse Island, Strangford Lough

The survey was conducted from just north of the landing strip at the Wildfowl and Wetlands Centre, Castle Espie and extended to Reagh Island in the south (Fig. 2). Cord-grass was widely distributed. The most extensive and dense swards were found on the foreshore of Horse Island. Few patches were recorded at Reagh Island.
Fig. 2  Cord-grass distribution at Horse Island, Strangford Lough.

Kircubbin, Strangford Lough

Cord-grass was absent to the south of the Black Neb peninsula and the exposed coast of Rowreagh point and Horse Island (Fig. 3). Cord-grass was present between Hare Island and Horse Island and either side of the Rowreagh peninsula with dense swards located in sheltered inlets.

The Dorn, Strangford Lough

Cord-grass was largely absent from the majority of The Dorn, however, small isolated patches were found in isolated inlets (Fig. 4).
**Fig. 3**  Cord-grass distribution at Kircubbin, Strangford Lough.

**Fig. 4**  Cord-grass distribution at The Dorn, Strangford Lough.
Dundrum Bay

Cord-grass was present along the majority of the north and western shoreline. The most dense and continuous swards located at the north-east end of Dundrum inner bay (Fig. 5). Some of Dundrum Bay was not surveyed due to exclusions in place by the Ministry of Defence (MOD) at Ballykinler. This area will be included in subsequent surveys.

Fig. 5  Cord-grass distribution at Dundrum Bay. The area within the red box was not surveyed as it fell within the MOD Base at Ballykinler.

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