Appropriate Assessment Conclusion Statement Cork County Council: Sea lettuce removal from beaches in west Cork	
Brief description of the project or plan	High volumes of sea lettuce generally occur in areas subject to excess inputs of nutrients, principally nitrogen, derived from domestic, industrial and agricultural sources. In the past number of years large masses of sea lettuce have accumulated on beaches in west Cork during the summer. These accumulations can decompose rapidly and impact on amenity use and give rise to public health concerns due the release of Hydrogen sulphide (H_2S) gas which also gives rise to significant odour issues (smell of rotten eggs). Additionally, in areas where high concentrations of sea lettuce occurs, sunlight is unable to reach the sediments below, preventing photosynthesis and often killing the natural flora and fauna. Masses of sea lettuce can hamper swimmers, foul fishing gear and get entangled in the propellers of fishing and recreational vessels. It is proposed to remove approximately 10,000 tonnes (wet weight) of sea lettuce annually from beaches in west Cork including Inchydoney, Harbour View, Coolmaine, Courtmacsherry, Garrettstown and Roberts Cove. The removals would be carried out on an "as required" basis and would occur during the months of May – September. The material would be spread on agricultural land as a fertiliser.

Brief description of the Natura 2000 site(s)	Clonakilty Bay SAC (Site Code 000091) Clonakilty Bay in west Cork is an inter-tidal expanse that stretches from Clonakilty to the open sea, and comprises two small estuaries separated by Inchydoney Island. The site also includes adjacent sand dunes and inland marshes, and therefore is a coastal complex with a good diversity of habitats including several habitats listed on Annex I of the EU Habitats Directive. Conservation Objectives: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected: • Mudflats and sandflats not covered by seawater at low tide • Annual vegetation of drift lines • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes") • * Fixed coastal dunes with herbaceous vegetation ("grey dunes") • * Atlantic decalcified fixed dunes (*Calluno ulicetea*)

Clonakilty Bay SPA (Site Code 004081)

The site is of special conservation interest for the following species: Shelduck, Dunlin, Black-tailed Godwit and Curlew. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds

Conservation Objectives: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- Wintering Shelduck (*Tadorna tadorna*)
- Wintering Black-tailed Godwit (*Limosa limosa*)
- Wintering Curlew (*Numenius arquata*)
- Wetlands & Waterbirds

Courtmacsherry Estuary SAC (Site Code 001230)

This site is located in West Cork, some 12 km south of Bandon and immediately east of the village of Timoleague. The estuary consists of the drowned valley of the Argideen River, which is now filled with sediments, resulting in an extensive mudflat. The site contains a complex of coastal habitats including ten habitats listed on Annex I of the EU Habitats Directive.

Conservation Objectives: To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- *Salicornia* and other annuals colonizing mud and sand
- Atlantic salt meadows (*Glauco Puccinellietalia maritimae)*
- Mediterranean salt meadows (*Juncetalia maritimi*)
- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
- * Fixed coastal dunes with herbaceous vegetation ("grey dunes")

Courtmacsherry Bay SPA (Site Code 004219)

Courtmacsherry Bay SPA is an important site for wintering birds. It holds internationally important numbers of Black-

	tailed Godwit and nationally important numbers of a further eleven species, including three that are listed on Annex I of the E.U. Birds Directive, i.e. Great Northern Diver, Golden Plover and Bar-tailed Godwit Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: wintering Great northern Diver (*Gavia immer*) wintering Shelduck (*Tadorna tadorna*) wintering Wigeon (*Anas penelope*) wintering Red-breasted Merganser (*Mergus serrator*) wintering Golden Plover (*Pluvialis apricaria*) wintering Lapwing (*Vanellus vanellus*) wintering Dunlin (*Calidris alpine*) wintering Black-tailed Godwit (*Limosa limosa*) wintering Bar-tailed Godwit (*Limosa lapponica*) wintering Curlew (*Numenius arquata*) wintering Black-headed Gull (*Chroicocephalus ridibundus*) wintering Common Gull (*Larus canus*) Wetlands & Waterbirds

Assessment criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	The removal of sea lettuce during the summer months will not have an impact on the Conservation Objectives of the Clonakilty Bay SPA or the Courtmacsherry Bay SPA as the removal operations will occur at a time when few overwintering bird species will be present. Within the Clonakilty Bay SAC and the Courtmacsherry Estuary SAC the incidental removal of sand with the sea lettuce could affect the development of the Annex 1 Habitat types "Annual vegetation of drift lines" and "Embryonic shifting dunes". The incidental removal of seeds with the sea lettuce could also affect the development of "Annual vegetation of drift lines" Within the Clonakilty Bay SAC the removal of sea lettuce could result in direct loss and damage to the Annex 1 Habitat types "fixed dunes" "shifting dunes", decalcified dunes" "embryonic shifting dunes" and "annual vegetation of drift lines" as a result of vehicular access to the beaches. Within the Courtmacsherry Estuary SAC the removal of sea lettuce could result in direct loss and damage to the Annex 1 Habitat types "fixed dunes" "shifting dunes", "embryonic shifting dunes" and "annual vegetation of drift lines" as a result of vehicular access to the beaches.

Describe the mitigation measures that will be used to avoid adverse impacts.	The following mitigation measures have been agreed and will be implemented by Cork County Council: • An ecologist will monitor all sites prior to each removal to identify the location of sensitive habitats relative to the location of the sea lettuce accumulations so that access routes and working areas can be determined • Contactors will be briefed prior to each removal and instructed on access and egress routes. • The amount of sand removed will be minimised by establishing a maximum ratio of sand :sea lettuce per load which shall be subject to spot checking. The contract shall be designed to disincentivise the removal of sand • Annual monitoring of the Habitat types "Annual vegetation of drift lines" and "Embryonic shifting dunes" will be carried out at Inchydoney and Harbour view to determine if there is any change in the extent of quality of the habitats during the period that sea lettuce is removed
Conclusion of assessment	The removals carried out in 2010 and 2011 all occurred lower on the shore than the location of Habitat types "Annual vegetation of drift lines" and "Embryonic shifting dunes" and thus there was no direct impact on these habitat types. Additionally, monitoring carried out in 2010 showed that the amount of sand being removed with the sea lettuce was low with sand typically making up only 0.5% by weight. Access and egress points were agreed with the NPWS and no damage to the sensitive habitats was observed. Provided that the mitigation measures continue to be fully implemented it can be concluded that the removal of sea lettuce from beaches will not adversely affect the integrity of the European Sites in question.
Who carried out the Assessment	Marine Institute, February 2012