



- Seagrass offers multiple benefits in tackling the Climate and Biodiversity Crises.
- Seagrass is being lost and damaged worldwide but efforts to reverse this are mounting.
- Ireland's forthcoming Maritime Area Planning (MAP) law and MSP (Marine Spatial Plan) can lead integrated seagrass protection.
- Protection and support for restoration in our first MSP will assist local authorities when they take over responsibility for the 'nearshore' zone where all our seagrass is located.

## WHY PROTECT SEAGRASS?

Seagrasses are so called 'Blue Carbon Habitats'. They have outstanding biodiversity and climate value. The underwater meadows they form act as nursery for many marine creatures, including commercial fish<sup>1</sup>, while also providing shelter, living space and a vital source of food for protected species of birds of European conservation concern, such as Brent Geese<sup>2</sup>. It is estimated that seagrass beds are responsible for 15% of carbon stored in the ocean<sup>1</sup>. Seagrass in Ireland could potentially counteract GHG equivalent to 2.2 MT CO<sub>2</sub><sup>3</sup>.



Seagrasses<sup>4</sup> are flowering plants with roots which grow in sheltered inshore areas.

In Ireland we have three species: (i) *Zostera marina* which grows as tall under water meadows, or as short form adapted to intertidal pools; (ii) *Zostera noltii* the short thin leaved intertidal mudflats lawns; and In a few muddy locations, (iii) *Ruppia maritima*.

## LOSS AND DAMAGE

Seagrasses are being lost at a rate of 1.5-2.5% per year globally<sup>3</sup> and we have lost intertidal seagrass lawns in many of our estuaries and bays over the past few decades through the unchecked spread of invasive *Spartina*, eutrophication, dredging, trampling, and aquaculture. As exemplified at Coastwatch training events, most people cannot tell opportunistic green seaweed from the intertidal sea grass and think that seagrass is abundant. But where opportunistic seaweeds flourish, intertidal seagrass is threatened by anoxia and lack of light.

Too little is known about our near shore seagrass meadows, 'the Octopuses gardens'. Traditional fishermen in some estuaries like Lough Swilly knew these meadows by name and told us of their loss.

**Seagrass must be known, valued, respected, and protected to play its full role of tackling both the biodiversity and climate crises.**

## KEY ACTIONS NEEDED

1. Provide Seagrass protection in the Maritime Area Planning Act and Ireland's first Marine Spatial Plan<sup>5</sup>.
2. Earmark EMFAF<sup>7</sup> funds for seagrass protection, monitoring, eco-tourism, and restoration involving local communities, fishers, and citizen scientists.
3. Draft and Implement a Seagrass Action Plan with full public participation and cooperation with NI.

## LEGAL STATUS

Seagrass is part protected under various nature and water laws, but this is ineffective. There is a lack of information or management/restoration measures surrounding seagrass in Ireland, even in Natura 2000<sup>7</sup> sites. Lack of clarity regarding responsibility and permits for removing invasive alien species from the foreshore is hampering timely control of invaders like *Sargassum muticum*<sup>8</sup> which can wipe out seagrass meadows and alter reef habitat.

It is unclear who is responsible for enforcing the law where the activity does not require a permit. Bait-digging, riding, or driving on seagrass causes damage - often unknown to those involved.

By including seagrass as a priority climate and biodiversity feature in Ireland's first Marine Spatial Plan, we would ensure that seagrass would be marked on maps and that management, restoration and protection would be supported. It also lends itself to action with local community participation and would serve as a pilot for management measures and reporting which can be rolled out in future MPA<sup>9</sup>s.



Coastwatch is an environmental group hosted in Civil, Structural and Environmental Eng., Trinity College Dublin. Briefing draft prepared by Karin Dubsy and Meg O' Doherty, with experience, comments, and views of Coastwatchers working on seagrass around Ireland.

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Figure 1: Intertidal seagrass survey training with Dr Robert Wilkes, EPA marine unit lead, with Coastwatchers in Sligo.

## ADDRESSING THREATS TO SEAGRASS

### Invasive Alien Seaweed case study:

A large *Zostera marina* seagrass meadow, straddling St. Patrick's Bridge, near Kilmore Quay, Co Wexford has been infested by *Sargassum muticum*<sup>5</sup> - a listed, high-risk alien invasive seaweed.

[EU Regulation](#)<sup>10</sup> and national law ([SI 477/2011](#))<sup>11</sup> state that it is an offence to allow the dispersal and spread of listed invasive alien species. Landowners who find a listed invasive must act to prevent spread, but it is unclear who is responsible at sea. Here in a Natura 2000 site - Saltee Island SAC, the invasive seaweed has had time to form a blanket over most of the seagrass. *Z. marina* has died in patches. While both still coexist in other places, seagrass is losing this battle. Taking emergency action; the Coastwatch team with ecologist and local coordinator have researched *Sargassum* growth on cobble, designed and tested methods of seaweed removal by hand, and trained volunteers. Laboratory tests of *Sargassum* from the site have confirmed its suitability as soil conditioner and fertiliser. Removal by hand has been slow but showing promising results. More help is urgently needed to allow seagrass to grow, as well as curtailing further *Sargassum* spread.

Aside from the threat posed by invasive species and excess nutrients, most pressures on seagrass are direct [anthropogenic](#)<sup>2,12</sup> like driving, dredging, horse riding, bait digging or putting aquaculture trestles too close. This is why Ireland's first Marine Spatial Plan and [Marine Atlas](#)<sup>13</sup> are so important to bring information, clarity, site or area specific management, and integrated enforceable law.

## WELCOME POLICY AND ACTION

- ✓ The recent [EU biodiversity Strategy 2020-2030](#)<sup>14</sup> states that areas of carbon-rich ecosystems, should be strictly protected and restored and lists seagrass meadows among these.
- ✓ Seagrass is a priority habitat under the OSPAR Convention ([OSPAR agreement 2008-6](#))<sup>15</sup>
- ✓ N. Ireland has a [Seagrass Action Plan](#)<sup>16</sup> since 2003
- ✓ [The New York Seagrass Protection Act 2019](#)<sup>17</sup> sets out key goals, responsibilities, and powers in clear language and could provide inspiration.

## MONITORING AND REPORTING

Seagrass is an indicator of 'Good status' quality for estuarine and coastal waters in EU law (the [WFD](#)<sup>18</sup> and the [MSFD](#)<sup>19</sup>). In Ireland we currently have:

- Consistent annual EPA monitoring of [intertidal seagrasses](#).
- Inadequate sublittoral seagrass meadow reporting (mainly Art 17 audits in N2000 sites).
- Information gathered as part of project applications in protected areas - e.g. Natura Plans for aquaculture license applications.

## WHICH NEW LAW TO PROTECT?

Many seagrass beds fall outside the current Natura 2000 site MPAs and are highly vulnerable due to their near shore location. Ireland has just 2.3% of its marine area designated as MPA, not 10% as set out in [UN SDG 2020 Life Below Water target](#)<sup>20</sup>. A new MPA law is to be drafted but it will take years for this to be passed and a full suite of sites designated. That is why we need seagrass and other highest value blue carbon habitats protected now in the MAP (Maritime Area Planning law) 2021.

There is a need for State supported pilot initiatives of best blue carbon habitat management and restoration practice with public information and participation and a suite of effective enforcement measures. These could be developed with EMFAF funding.

### Dublin City Council case study:

DCC latest [Draft Biodiversity Action Plan 2021](#)<sup>21</sup> includes proposals to continue seagrass monitoring, awareness raising and investigate seagrass restoration. This dovetails with new EU policy and could be a fine case study setting precise local actions under the Marine Spatial Plan umbrella.

Coastwatch uses citizen science methods to inform and engage the interested public. The group's autumn shore surveys are supported by government. Over the last decade these have included seagrass as a feature to look out for. Surveyors have discovered new sites and flagged pressures. The Coastwatch [2021 Seagrass campaign](#)<sup>22</sup> builds on a [2019](#)<sup>23</sup> pilot. It seeks to raise public awareness, which includes a citizen search for these blue carbon habitats. Then trained ecologists verify findings, produce maps, and carry out health audits of reported seagrass with volunteers, also supporting action to protect and restore seagrass.



Figure 2: *Zostera marina* seagrass in competition with *Sargassum muticum* at St. Patrick's Bridge, Kilmore, Co Wexford.



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