APPENDIX No. 13

Survey of Salt Marsh Vegetation at Mweeloon, Co Galway

A SURVEY OF SALT MARSH VEGETATION AT MWEELOON, CO. GALWAY

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A report prepared by

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1. Introduction to salt-marsh habitat at Mweeloon

Salt marsh vegetation around at Mweeloon to the east of Tawin island is generally quite low growing and grassy in nature (Photograph 1) and thus mostly corresponds to the EU habitat Atlantic salt meadow (Habitat Code 1330). Much of the salt marsh habitat occurs on a relatively shallow mineral soil with outcropping limestone bedrock generally frequent (Photograph 2). During August and September of 2017 a survey of salt marsh habitat at Mweeloon was undertaken. The primary purpose of this survey is to describe the habitat present in terms of vegetation composition and structure and to make comments/recommendations regarding the future conservation of the habitat.

Photograph 1. General view of low-growing salt marsh vegetation at Mweeloon.

Photograph 2. *Artemisia maritima* growing along the high tide mark at Mweeloon. Note the frequent outcrops of limestone bedrock.

2. Vegetation composition

Within the survey area salt marsh vegetation generally occurs as a relatively narrow fringe which lies between dry meadow (GS2) vegetation on shallow soil and intertidal. This dry meadow vegetation is typically dominated by coarse grass species such as *Holcus lanatus, Dactylis glomerata* and *Anthoxanthum odoratum*. Although the fringe of salt marsh vegetation present is generally relatively narrow (typically 10 to 20 metres wide) there is good zonation of vegetation evident throughout ranging from pioneer salt marsh on stony soils characterised by *Salicornia* sp. and *Suaeda maritima* to mid-upper marsh characterised by species such as *Artemsia maritima*, *Festuca rubra, Juncus gerardii* and *Armeria maritima.* The main type of vegetation noted during the initial survey of vegetation is a relatively species-poor middle marsh community which tends to be dominated by a low-growing sward of *Plantago maritima* and *Aster tripolium.* Upper salt marsh areas which are less frequently inundated by sea water tend to be dominated by *Festuca rubra, Juncus gerardii* with frequent *Agrostis stolonifera*.

At Mweeloon the upper limit of salt-marsh vegetation is usually indicated by the presence of the tall, silver-grey species *Artemsia maritma* (Photograph 2). In Ireland this species has a restricted distribution which is largely confined to Galway Bay, the Shannon estuary and a few scattered locations on the Irish sea coast, north of Dublin. The site also contains a small population of the shrubby species *Atriplex portulacoides* which is very rare on the west coast of Ireland.

Table 1. Species list for salt marsh vegetation at Mweeloon.

Aster tripolium
Atriplex portulacoides
Agrostis stolonifera
Armeria maritima
Artemisia maritima
Atriplex sp.
Cochlearia officinalis
Festuca rubra
Glaux maritima
Juncus gerardii
Limonium humile
Plantago lanceolata
Plantago maritima
Puccinellia maritima
Salicornia sp.
Spergularia sp.
Suaeda maritima
Triglochin maritimum

Table 2. Salt marsh vegetation quadrats at Mweeloon.

Code	SM1	SM2	SM7	SM9	SM4	SM10	SM3	SM5	SM6	SM8	SM11
Quadrat size	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2X2	2x2
Easting	M33128	M33212	M33365	M33452	M33281	M33369	M33233	M33297	M33268	M33471	M33383
Northing	19555	19583	19748	19671	19686	19662	19639	19734	19928	19813	19549
Veg Ht. (cm)	<5	5	5 to 10	5	5 to 10	15 to 20	5 to 10	10 to 25	5 to 10	5 to 10	5 to 10
Veg cover (%)	98	98	97	95	98	99	100	97	95	80	90
Bare soil (%)	2	2	3	5	2	1	0	3	0	20	10
Bare stone (%)	0	0	0	0	0	0	0	0	5	0	0
Shrub (%)	0	0	0	0	0	0	0	0	0	0	0
Herb (%)	98	98	98	95	98	99	100	97	95	80	90
Bryophyte (%)	0	0	0	0	0	0	0	0	0	0	0
Plantago maritima	60	60	25	1	20		30		10	3	
Aster tripolium	25	15	40	5	20		3		15	5	10
Glaux maritima	8	10	5				15				
Triglochin maritimum	5		-		30		10				
Puccinellia maritima	3	5	20	80	10			10	35	50	15
Limonium humile			3							1	1
Spergularia sp.			3	3							
Armeria maritima		3	3	3	5		5	3	10	5	30
Sueada maritima			2	3							
Salicornia sp.			-	2	15				1	10	1
Juncus gerardii						80	5				
Festuca rubra		5				8	35	50	20	5	5
Agrostis stolonifera						8		5			
Atriplex sp.						3		3			
Cochlearia officinalis				1					3	5	25
Artemisia maritima								35	5		3

3. Habitat management

Salt marsh habitat can be subject to a range of damaging operations including vehicular damage, dumping, reclamation and overgrazing/poaching. The severity of these damaging operations varies from location to location however overgrazing by livestock appears to be the main problem on salt marsh areas in the west of Ireland (McCorry and Ryle, 2009)

The current condition of the salt marsh habitat at Mweeloon is generally good however there is evidence of habitat disturbance due to recent poaching by cattle and vehicular access in the east of the salt marsh area (Photographs 3 and 4). This damage was caused by livestock in the early months of 2017. Throughout the summer of 2017 horses have extensively grazed the western and southern sections of the survey area. In the past the salt marsh has been grazed to varying degrees of intensity and there is a need to regulate and monitor the level of grazing which occurs at this location.

The implementation of a habitat management plan for areas of salt marsh habitat in this area is desirable. This plan should primarily focus on controlling traffic access to the site, the implementation of a light grazing regime and stopping supplementary feeding of livestock. Survey protocols for the monitoring of the habitat have been devised recently by McCorry and Ryle (2009) and these should be used to monitor the composition and condition of the habitat in the future.

Grazing levels should be maintained between 0.5 and 0.7 livestock units per hectare initially and should be monitored and adjusted if required. April to October is the preferred grazing period. Stocking densities should be monitored in order to ensure that excessive poaching of salt marsh soil does not occur. Animals should be removed during prolonged periods of heavy rain. Livestock access routes should be varied in order to prevent poached trackways from developing. Supplementary feeding should not occur on areas of salt marsh habitat.

The distribution of the rare plant species *Atriplex portulacoides* should also be monitored as the species is thought to be grazing sensitive (Devaney and Perrin, 2015).

Photograph 3. Habitat damage due to vehicular access at Mweeloon. Photo taken in October 2017.

Photograph 4. Habitat damage due to cattle poaching at Mweeloon. Note the high cover of bare soil. Photo taken in October 2017.

References

Devaney, F.M. & Perrin, P.M. (2015). Saltmarsh Angiosperm Assessment Tool for Ireland (SMAATIE), EPA Research End of Project Report (2013–W–DS-10), Environmental Protection Agency, Johnstown Castle, Wexford, Ireland

McCorry, M. and Ryle, T. (2009). Saltmarsh Monitoring Project 2007-2008, Volumes 1 to 5. Contract reference D/C/227. A Report for Research Branch, National Parks and Wildlife Service, Dublin