

# **Milford Haven Native Oyster Regeneration Project - Stage One** **(current status and practicalities).**

Dr. Philine S. E. zu Ermgassen

## **Executive Summary only**

*Full report available under license from Natural Resources Wales (please enquire via Sue Burton [sue@pembrokeshiremarinesac.org.uk](mailto:sue@pembrokeshiremarinesac.org.uk) Tel:01646 696108)*

A report commissioned by West Wales Shellfishermen's Association Ltd supported by the Milford Haven Native Oyster Regeneration Management Group.



May 2017



Funded by:



## Executive Summary

The Milford Haven Waterway, which lies within the Pembrokeshire Marine Special Area of Conservation in South Wales, was historically the location of one of the principal Native Oyster (*Ostrea edulis*) beds in Wales. Overfishing in the 1800s near universally drove the Native Oyster to commercial and functional extinction throughout its European range. A host of other threats including sedimentation, poor water quality, trawling and disease have contributed to its continued status as a threatened species. The European Native Oyster is currently listed by OSPAR as a threatened and/or declining species and habitat and as well as a Biodiversity Action Plan Species in the UK. It is also listed in Section 7 of the Environment (Wales) Act 2016. It is considered to be a component of the Estuaries, Large shallow inlets and bays, and Reef features of the Pembrokeshire Marine Special Area of Conservation. Today, Native Oysters are known to be scattered throughout the Milford Haven Waterway, albeit at very low densities.

An extensive survey of the historical oyster areas of the Milford Haven Waterway was undertaken in late 2016/early 2017 by box grab, intertidal transect and Seasearch diver transects and quadrats. The surveys found the Native Oyster population within the Milford Haven Waterway to be widely distributed at low densities (mean 0.05-0.17 m<sup>-2</sup>). There are, however, some localized areas where oysters were found at substantially higher densities. The mean oyster size did not differ significantly from earlier surveys, which implies that some limited recruitment has taken place. The surveys undertaken in Milford Haven have, however, consistently found there to be a low abundance of spat (newly settled oysters), which suggests that this recruitment is extremely limited. As in other parts of its range, active restoration is highly likely to be necessary to allow the existing population of Native Oysters to recover.

It can be concluded from the surveys undertaken and outlined in this report that the current most likely contributors to the low oyster densities and recruitment in Milford Haven are: **lack of broodstock, bonamia and low quality cultch**. It is recommended that phase 2 of the Milford Haven Native Oyster regeneration project focus on mitigating the threat posed by the lack of broodstock and the impact of bonamia. Improving cultch is also likely to be beneficial to the population, however, it is critical at this stage to first address the lack of larvae. Consideration of cultch quality should be undertaken alongside efforts to increase recruitment, to ensure that the additional larvae generated through restoration have the best chance of survival and growth.

Suggested next steps to be taken to restore or recover the Native Oyster in the Milford Haven Waterway include:

1. Relaying of existing oysters into brood stock areas to increase the probability of successful fertilization and therefore enhance recruitment.
2. Addition of hatchery reared stock, or stock purchased from another fishery to increase the density of oysters within the Milford Haven Waterway and therefore to enhance recruitment.
3. Mapping/monitoring the current prevalence of bonamia within the Milford Haven Waterway such that it can be accounted for in restoration design and adaptive management. Projects should aim to support the development of bonamia resistant genotypes within the Native Oyster population.
4. Monitoring of oyster larvae and spat settlement to ensure that best practice is achieved.

## Crynodeb Gweithredol

Yn hanesyddol, Dyfrffordd Aberdaugleddau, sy'n gorwedd o fewn Ardal Cadwraeth Arbennig Sir Benfro Forol yn Ne Cymru, oedd lleoliad un o'r prif welyau Wystrys Brodorol (*Ostrea edulis*) yng Nghymru. O ganlyniad i orbysgota yn y 1800au, bu bron i'r Wystrys Brodorol yn gyffredinol farw allan yn fasnachol ac yn weithredol, ar draws eu hehangder Ewropeaidd. Cyfrannodd lluo o fygythiadau eraill, gan gynnwys gwaddodiad, ansawdd dŵr gwael, treillio a chlefydau at eu statws parhaus fel rhywogaeth sydd dan fygythiad. Ar hyn o bryd mae OSPAR yn rhestru'r Wystrys Brodorol Ewropeaidd fel rhywogaeth a chynefin sydd dan fygythiad a/neu'n dirywio ac maen nhw hefyd yn Rhywogaeth Cynllun Gweithredu Bioamrywiaeth yn y Deyrnas Unedig. Maen nhw hefyd wedi'u rhestru yn Adran 7 Deddf yr Amgylchedd (Cymru) 2016. Cânt eu hystyried fel un o nodweddion Aberoedd, baeau a chilfachau bas mawr a nodweddion Riff Ardal Cadwraeth Arbennig Sir Benfro Forol. Heddiw, rydyn ni'n gwybod bod yr Wystrys Brodorol wedi'u gwasgaru ar draws Dyfrffordd Aberdaugleddau, er bod eu dwyseddu'n isel iawn.

Cynhaliwyd arolwg helaeth o ardaloedd Wystrys hanesyddol Dyfrffordd Aberdaugleddau yn hwyr yn 2016/yn gynnar yn 2017 trwy ddaliad bocsys, trawslun rhynglanw a thrawslun a chwadradau deifwyr Seasearch. Darganfu'r arolygon fod y boblogaeth o Wystrys Brodorol yn Nyfrffordd Aberdaugleddau wedi'u dosbarthu'n eang ar ddwyseddu isel (cymedrig 0.05-0.17 m<sup>-2</sup>). Fodd bynnag, mae yna ardaloedd lleoledig ble cafwyd hyd i Wystrys ar ddwyseddu sylweddol uwch. Nid oedd maint cymedrig yr Wystrys yn sylweddol wahanol i arolygon cynharach, sy'n awgrymu bod rhywfaint o recriwtio cyfyngedig wedi cymryd lle. Fodd bynnag, darganfu'r arolygon a wnaed yn Aberdaugleddau, yn gyson, niferoedd isel o silod (Wystrys sydd newydd setlo), sy'n awgrymu bod y recriwtio hwn yn gyfyngedig iawn. Fel mewn rhannau eraill o'u maes, mae'n debygol iawn y bydd angen adferiad actif i adael i'r boblogaeth bresennol o Wystrys Brodorol adfer.

Gellir casglu o'r arolygon a wnaed, ac a amlinellir yn yr adroddiad hwn, mai'r elfennau sydd fwyaf tebygol o fod yn cyfrannu at y dwyseddu Wystrys isel a'r recriwtio isel ar hyn o bryd yn Aberdaugleddau yw: **diffyg magstoc, bonamia a cwlthsh o ansawdd isel**. Argymhellir bod cam 2 prosiect adfywio Wystrys Brodorol Aberdaugleddau yn canolbwyntio ar liniaru'r bygythiad sy'n bodoli o ganlyniad i ddiffyg magstoc ac effaith bonamia. Mae gwella cwlthsh hefyd yn debygol o fod yn fuddiol i'r boblogaeth, fodd bynnag mae'n hanfodol ar y cam hwn i roi sylw i'r diffyg larfae yn gyntaf. Dylid ystyried ansawdd cwlthsh ochr yn ochr ag ymdrechion i gynyddu'r recriwtio, i sicrhau bod y larfae ychwanegol a gynhyrchir trwy adferiad yn cael y cyfle gorau posib i oroesi a thyfu.

Mae'r camau nesaf a awgrymir i adfer yr Wystrys Brodorol yn Nyfrffordd Aberdaugleddau yn cynnwys:

1. Ailosod Wystrys sydd eisoes yn bodoli i mewn i ardaloedd magstoc i gynyddu'r tebygolrwydd o ffrwythloni'n llwyddiannus ac felly gwella'r recriwtio.
2. Ychwanegu stoc a fagwyd mewn deorfa, neu stoc a brynwyd o bysgodfa arall, i gynyddu dwysedd Wystrys o fewn Dyfrffordd Aberdaugleddau ac felly gwella'r recriwtio.
3. Mapio/monitro amllder bonamia yn Nyfrffordd Aberdaugleddau ar hyn o bryd, fel bod modd ei ystyried wrth gynllunio adferiad a rheoli trwy addasu. Dylai'r prosiect anelu at gefnogi datblygiad genoteipiau sy'n gallu gwrthsefyll bonamia o fewn y boblogaeth o Wystrys Brodorol.

Monitro larfae wystrys ac anheddiad silod i sicrhau arfer gorau.