

Summary report: Historical oyster habitat and fisheries in English coastal waters

Overview: This report describes the methods used to collate and synthesize primary and secondary written sources from government, scientific, maritime and popular media accounts that mention the use and presence of the native oyster, *Ostrea edulis*, across England. From these sources we extracted locations of oyster habitat and fishery exploitation, and – where available – descriptions of the extent of habitat and timings of decline.

Methods – Archival searches: We searched government archives, scientific and public libraries for written resources that provided evidence of past native oyster fisheries and/or mention of oyster habitats. Due to the COVID-19 pandemic restrictions on travel during the course of the project, the majority of resources were sourced from online archives. These included digitised government publications of Select Committees and Royal Commission reports and minutes of evidence and annual fishery statistics (available at: <https://parlipapers.proquest.com/parlipapers>), and digitised popular books (available at: <https://books.google.co.uk>). Online searches were conducted in December 2020, using the key words ‘native oyster’ and ‘*Ostrea edulis*’. Articles were listed by relevance and titles/descriptions of the first 500 articles in each database were searched. Because we were interested in historical oyster habitat, we restricted our searches to sources published prior to 1930. Online resources were supplemented by the personal collections and archival searches conducted previously by the two authors, including dedicated searches of collections housed at the British Library, the National Archives, the National Maritime Museum, Cambridge University Library, the Marine Biological Association, the British Newspaper Archive, and Record Offices and county archives across England between 2008 and 2011.

Any publication that focused, or was deemed likely to mention historical oyster habitat or oyster fisheries around England (i.e., with a focus upon marine ecosystems, or human activities in the marine environment), was read in full. These included publications such as the minutes of Royal Commissions seeking evidence about the impacts of trawling, naturalist accounts of coastal environments, newspaper reports, and maritime charts, as well as literature directly related to the oyster fishery.

Data extracted: Mentions or descriptions of oyster habitats and fisheries were extracted into a MS Excel database. For each mention as much of the following data were included as was available: year referred to, location of catch (as precisely as possible including the name of the oyster habitat or nearest port if provided), whether the beds were discussed as natural or stocked, qualitative descriptions of the location and depth, habitat and/or fishery (e.g., total numbers of oysters extracted, whether in decline or doing well, or final year of the fishery if it was no longer exploited).

Location and confidence criteria: Each location was assigned a level of confidence, low, medium or high. High confidence was assigned when a precise location was presented and/or the detail meant the location had to occur within a very defined area e.g., nautical charts detailed ‘oyster bed’ within a marked polygon, or the description was highly precise e.g., ‘*within harbour walls*’. Medium confidence was assigned when the name of an oyster fishery or habitat was provided and descriptions provided details such as the distance from shore, e.g., ‘*The deep-sea bed near Great Grimsby is situated ten or twelve miles from the shore off Spurn Point*’. Low confidence was assigned when we could not extract precise information on the location, e.g., oyster beds were described as occurring in ‘the Channel’ or ‘further out to sea’ from a particular port.

GIS layers: The raw data were transferred to QGIS as point coordinates. To account for the high level of uncertainty in the past locations of oyster habitats, our GIS layers present locations of past reported oyster habitat as present or absent within (a) 50 km² grids, and (b)

Water Framework Directive (WFD) boundaries around England (WFD layer sourced from the Environment Agency).

Results – File explanation: (1) An Excel database is provided listing major oyster fishery or habitat locations around England, year referred to, their geographic location (latitude, longitude as accurately as possible), assigned level of confidence, relevant qualitative descriptors, and source. Where the same location was mentioned multiple times across different historical periods, multiple records have been included to provide an indication of the longevity of the fishery/habitat and the relevant sources. PNG files showing the documented presence of oyster habitats/fisheries pre-1930 are presented showing (2) oyster habitats within a 50km² grid and, (3) oyster habitats present pre-1930 within the Water Framework Directive boundaries. While these locations are shown as polygons, it is important to note that oyster habitats did not cover the full extent of these polygons. Oyster habitats were defined as point locations with varying degrees of accuracy, hence within one of these polygons, it may be that several oyster fisheries/habitats historically existed.

Description of the data: Location data were extracted from popular literature, government reports, legislative bills, local history publications, and historical nautical charts. The number of location records extracted totalled 227, with 135 of these comprising individual latitude/longitude points. Some of the recorded latitude/longitude points are in close proximity to other recorded locations, and due to the level of uncertainty in location accuracy it is unknown if separate points formed contiguous habitat, or had done so at some point in the past. 80% of localities were extracted from records published during the 19th century (1800-1899), which corresponded with the increased commercial and popular interest in the native oyster, as well as the expansion of the fishery into deeper waters. All records described a worked or previously exploited fishery, as opposed to unexploited oyster habitat.

Location descriptions: For some localities, no further information was provided other than a name that related to the port of landing or the estuary/harbour from which the oysters were fished. For a number of localities, however, some description of the location of the habitat was able to be extracted, with varying degrees of precision. For example, “...*There is a noble [oyster] bank or bed betwixt Laxey Bay and Maughold Head extending above two miles in length and near two in depth...about a mile and a half from the shore*” [Townley, 1791]; “*At the point called Tavy-tail, which is the place where the waters of the Tamar and the Tavy meet, there are valuable beds of oysters*” [Moore 1829]; “*[the oyster beds] extend from Beachy Head over the deep sea, right across the Channel...About 20 miles [offshore] sometimes; sometimes 25, and sometimes 30.*” [Sea Fisheries Commission 1866]. These descriptions also offered glimpses into how long some of these locations had been known about and exploited, or whether they still existed at the time of writing. For example, “*Oysters [were] discovered in the [Torcross] Bay in the last two years...*” [Sea Fisheries Commission 1866]; “*[Oysters] lie in irregular patches off the breakwater... We are constantly finding new beds*” [Sea Fisheries Commission 1866]; “*In the autumn of last year a large bed of oysters was discovered between the Ridge and the Brixey Sands, at the mouth of the Crouch, Essex.*” [Buckland 1875].

Of the 135 locations, 130 of these were deemed likely to be natural habitat (i.e., there was no indication from the literature that the fishery/bed had been constructed artificially, although restocking could have occurred). The majority (48%) of records detailed oyster fisheries on the east coast of England as far north as the vicinity of Holy Island in Northumberland, and the south coast (46%), with a small percentage recorded as occurring on the west coast (6% of records to the west of England). Records indicated the presence (or past presence) of coastal fisheries (e.g., oyster fisheries within sheltered waters of a bay or a harbour) and ‘offshore’ fisheries to depths of 40 metres in the English Channel and North Sea.

Habitat description: Descriptions of oyster habitat were relatively rare, and usually focused upon the distribution of oysters or the size of the fished area. Fishers spoke about ‘banks’ or

'patches' of oysters, e.g., "*There are those among the fishermen who also well remember native oyster patches in the Barrow Deep and around the Goldmer Gat and the Sunkend*" [Kent and Essex Sea Fisheries Committee 1903]. Occasionally the characteristic and size of the oyster habitat was described, or the boundaries were recorded on nautical charts: "*The bank was two miles long by half a mile wide.*" [Buckland and Walpole 1879]; "*The trawlers avoid this "rough ground" as they call it, as much as possible; but when they do by accident get on to it, the oysters are so numerous that they fill up the trawl next and nearly bring up the vessel*" [Buckland 1875]; "*An 'oystery bottom, a kind of stony bottom...*" [Sea Fisheries Commission 1866].

Fishery description: Fisheries were commonly mentioned by name without further information being given, although details on the health of a fishery, when it commenced or became commercially unviable, and for what reasons, were occasionally provided by witnesses. For example, "*There was another oyster bed discovered about 1860 between the Cant and the Cheney Rocks (Sheppey), but this lasted a very short time, which sufficed to clear them out.*" [Kent and Essex Sea Fisheries Committee 1903]; "*Some years ago the fishery was very productive. I had witnesses before me who agreed in stating that they had taken 2000 or 3000, or even 5000 oysters a day. The witnesses before me were also agreed that 500 or 600 oysters a day constituted now a good catch; that this number could only be taken at the very commencement of the season, and that the take rapidly fell off...*" [Select Committee 1876]; "*There was an immense haul of oysters at the Dudgeon Light, that bed was found 40 years ago, and worked off within three or four years, and there have not been any considerable number of oysters there since that time.*" [Select Committee 1876]; "*After [the main Worthing bed] was cleared out in 1874 there was another found a little further to the westward, with 50,000 or 60,000 oysters*" [Select Committee 1876].

Limitations of data and methods: We are confident that the historical data provide us with reliable information on the presence of oyster habitat within a 50km radius, however, we recommend that the point data associated with each location be viewed with caution and not as a specific location, unless the confidence allotted to that point is 'high'. This is due to the vagaries of many of the descriptions given by contemporary witnesses. There is also the difficulty of discerning separate oyster habitats i.e., what constituted the outer boundary of an oyster habitat, and the possibility that different names were applied to the same location by different people.

Key references for further reading:

Annual Reports of the Inspectors of Sea Fisheries (England and Wales) (1886-1913). HMSO, Eyre and Spottiswoode, London.

Bertram, JG (1865) *The harvest of the sea: a contribution to the natural and economic history of the British food fishes.* John Murray, London.

Eyton TC (1858) *A history of the oyster and the oyster fisheries.* John Van Voorst, Paternoster Row, London.

Forbes E, Hanley S (1849) *A history of British Mollusca, and their shells. Vol II.* John Van Voorst, Paternoster Row, London.

Philpots JR (1891) *Oysters and all about them.* John Richardson and Co., London.

Sea Fisheries Commission (1866) *Report of the commissioners appointed to inquire into the sea fisheries of the United Kingdom. Report, Appendix, Minutes of Evidence, Index.* House of Commons, HMSO, London.

Select Committee (1833) Report from the Select Committee on British Channel Fisheries. Report, minutes of evidence and appendix. House of Commons, HMSO, London.

Select Committee (1876) Select Committee to inquire into Reasons for Scarcity of Oysters and Effect of Measures adopted after the Report of Royal Commission on Sea Fisheries, 1866. Report, Proceedings, Minutes of Evidence, Appendix, Index. House of Commons, HMSO, London.

References in text:

Buckland FT (1875) Report on the fisheries of Norfolk, especially crabs, lobsters, herrings, and the Broads. HMSO, London.

Buckland FT, Walpole S (1879) Commissioners for Sea Fisheries on the Sea Fisheries of England and Wales. London, HMSO.

Kent and Essex Sea Fisheries Committee (1903) Report on the sea fisheries and fishing industries of the Thames Estuary. Waterlow Bros & Layton Ltd, London.

Moore T (1829) The history of Devonshire from the earliest period to the present. Devonshire. Vols I-II. Robert Jennings Publisher.

Sea Fisheries Commission (1866) Report of the commissioners appointed to inquire into the sea fisheries of the United Kingdom. Report, Appendix, Minutes of Evidence, Index. House of Commons, HMSO, London.

Select Committee (1876) Select Committee to inquire into Reasons for Scarcity of Oysters and Effect of Measures adopted after the Report of Royal Commission on Sea Fisheries, 1866. Report, Proceedings, Minutes of Evidence, Appendix, Index. House of Commons, HMSO, London.

Townley R (1791) A journal kept in the Isle of Man, Vol 1. J. Ware and Son, Whitehaven.