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Mapping the distribution of feral Pacific oysters, *Magallana gigas*, in Ireland 2024-2025

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Feral Pacific oyster, settled on a boulder next to Keelbeg Pier, co. Cork

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Contents

1.	Abstract	7
2.	Introduction	7
3.	Methods	9
3.1	Survey sites	9
3.2	Feral oyster identification and species verification	13
3.3	Timed surveys and Distinct habitat surveys	15
4.	General results and discussion.	17
5.	County specific results.	22
5.1	County Donegal	23
5.1.1	Three Trees, Lough Foyle	24
5.1.2	Moville, Lough Foyle	26
5.1.3	Ballymageehan, Trawbreaga Bay	28
5.1.4	Ballymageehan Beach, Trawbreaga Bay	30
5.1.5	Magherard Beach, Trawbreaga Bay	32
5.1.6	Malin Beach, Trawbreaga Bay.	34
5.1.7	Presbyterian Malin Church, Trawbreaga Bay	36
5.1.8	Leenan Beach, Dunaff Bay	38
5.1.9	Inch Pier, Lough Swilly	39
5.1.10	Quay Shore, Lough Swilly.	41
5.1.11	Gortleck Beach, Lough Swilly.	43
5.1.12	Ballgreen Beach, Lough Swilly	45
5.1.13	Cranford Pier, Mulroy Bay	47
5.1.14	Woodquarter Pier, Mulroy Bay	48
5.1.15	Marks Point, Carrick Bay Mulroy Bay	49
5.1.16	Glinks South, Mulroy Bay.	50
5.1.17	Millstone Bay, Mulroy Bay	51
5.1.18	Harry Blaney Bridge, Mulroy Bay	52
5.1.19	Tirloughan Bay, Mulroy Bay	53
5.1.20	Drongawn Lough Figart Hill, Mulroy Bay	54
5.1.21	Doe Castle, Sheephaven Bay	55
5.1.22	Rinnaraspoy Point, Sheephaven Bay	56
5.1.23	Portnablagh Pier, Sheephaven Bay	57
5.1.24	Anagaire car park, Anagaire Estuary	58
5.1.25	St. Mary's Church, Cruit Bay	59
5.1.26	South of Inisheane, Dungloe Bay	60
5.1.27	North of Derrylough, Trawenagh Bay.	61
5.1.28	Garrahill, Ardara Bay	63
5.1.29	Binnoe Slipway, Donegal Bay.	64
5.1.30	Port Pier, Donegal Bay.	66
5.1.31	Muckros, Donegal Bay	68
5.1.32	East of Rooney's Island, Donegal Bay	69
5.1.33	Kildoney Glebe Beach, Donegal Bay	70
5.2	County Sligo.	71
5.2.1	Lissadell Beach, Sligo Bay	72

5.3 County Mayo	74
5.3.1 Ross Beach, Killala Bay	75
5.3.2 Rinnashinnagh, Broadhaven Bay	77
5.3.3 Emilybeg, Blacksod Bay.	78
5.3.4 Claggan Bay Beach, Blacksod Bay	80
5.3.5 Bunafolly, Blacksod Bay	81
5.3.6 Valley Beach, Achill	82
5.3.7 Inishbiggle Ferry West, Achill.	83
5.3.8 Derrowlla Beach, Achill	84
5.3.9 Tonregee East Beach, Achill.	86
5.3.10 Gubnahardia, Achill	88
5.3.11 Inishnacross, Clew Bay	89
5.3.12 Drumfurban, Clew Bay	90
5.3.13 Raigh Pier, Clew Bay	91
5.3.14 Roslaher Beach South, Clew Bay	92
5.3.15 Cushalogurt Beach, Clew Bay.	93
5.3.16 Inishnakillew Beach, Clew Bay	94
5.3.17 Rosmoney Pier, Clew Bay.	95
5.3.18 Roman Island, Clew Bay	96
5.3.19 Carrowkeel Beach, Clew Bay	98
5.4 County Galway	99
5.4.1 St. Michael's Church, Killary Harbour	100
5.4.2 Derryinver, Ballinakill Harbour	101
5.4.3 Rosleague Beach, Barnaderg Bay	102
5.4.4 Cloonederowen Beach, Ballinakill Harbour.	103
5.4.5 Boolard Beach, Streamstown Bay.	105
5.4.6 Derreen Beach, Streamstown Bay.	106
5.4.7 Clifden Bay Beach, Clifden Bay.	107
5.4.8 Curhownagh Pier, Mannin Bay	108
5.4.9 Maum Beach, Mannin Bay	109
5.4.10 Doohulla Pier, Ballyconneely Bay.	111
5.4.11 Cashel Pier, Cashel Bay	112
5.4.12 Off Kilbricken Pier, Kilkieran Bay	113
5.4.13 Kilbricken Pier, Kilkieran Bay.	114
5.4.14 Clynagh, Cashla Bay.	115
5.4.15 Spiddal Pier, Galway Bay	116
5.4.16 Gurrane South, Galway Bay.	118
5.4.17 West of the Galway Sailing Club Pier, Galway Bay.	120
5.4.18 Galway Sailing Club Pier, Galway Bay	122
5.4.19 West of Ballinacourty Pier, Galway Bay	124
5.4.20 Ballinacourty Pier, Galway Bay	126
5.4.21 Killeernaran Pier, Galway Bay	128
5.4.22 East of Crushoa Pier, Kinvarra Bay	130
5.4.23 Crushoa Pier, Kinvarra Bay	132
5.4.24 South of Parkmore Pier, Galway Bay	134
5.4.25 Parkmore Pier, Galway Bay	136
5.5 County Clare.	138
5.5.1 West of New Quay Pier, Aughinis Bay	139
5.5.2 New Quay Pier, Aughinis Bay.	141
5.5.3 Finnavaara demesne, Poul-na-clough Bay	143
5.5.4 Scanlan's Island, Poul-na-clough Bay.	145

5.5.5	Kilcredaun Fort, Shannon Estuary	146
5.5.6	Cammoge Beach, Shannon Estuary	148
5.5.7	Poulnasherry Bay, Shannon Estuary	150
5.6	County Limerick	152
5.6.1	Mounttrenchard Beach, Shannon Estuary	153
5.6.2	Killacolla Cross Beach, Shannon Estuary	155
5.7	County Kerry	157
5.7.1	Carrig Island, Shannon Estuary	158
5.7.2	Tarbert, Shannon Estuary	160
5.7.3	Talaught West Beach, Barrow Harbour	162
5.7.4	Kilfenora Beach, Tralee Bay	164
5.7.5	Cuan Pier, Ventry Harbour	165
5.7.6	Hussey's Folly, Dingle harbour	166
5.7.7	Roscullen Island, Castlemaine Harbour	167
5.7.8	Cromane Lower East, Castlemaine Harbour	168
5.7.9	Cromane Lower West, Castlemaine Harbour	169
5.7.10	Dooks Beach, Castlemaine Harbour	170
5.7.11	Waterville, Waterville Bay	171
5.7.12	Rinneen Beach, Waterville Bay	172
5.7.13	Derrynane Beach, Bealtra Bay	173
5.7.14	Westcove Beach, Kenmare River	174
5.7.15	Templenoe , Kenmare River	175
5.7.16	Templenoe Pier, Kenmare River	177
5.7.17	Templenoe Pier; high water line, Kenmare River	179
5.7.18	North of Kenmare Bridge, Kenmare River	181
5.7.19	Kenmare Bridge, Kenmare River	183
5.7.20	West of Derreenacallaha Pier, Kenmare River	185
5.7.21	Derreenacallaha Pier, Kenmare River	187
5.7.22	Coornagillagh Pier, Kenmare River	189
5.7.23	Coornagillagh Beach, Kenmare River	191
5.7.24	Loughaunacreen Beach, Kenmare River	193
5.7.25	South of Kilmakilloge Pier, Kenmare River	195
5.7.26	West of Kilmakilloge Pier, Kenmare River	197
5.8	County Cork	199
5.8.1	Droumard, Kenmare River	200
5.8.2	Travaud Beach, Kenmare River	201
5.8.3	Ballydonegan Beach, Ballydonegan Bay	202
5.8.4	Cahermore, Bantry Bay	203
5.8.5	Dinish Island, Bantry Bay	204
5.8.6	Snave Bridge, Bantry Bay	205
5.8.7	Dunnamark, Bantry Bay	206
5.8.8	The Cove, Bantry Bay	208
5.8.9	Kilcrohane Pier, Dunmanus Bay	210
5.8.10	Rosnacaheragh Beach, Dunmanus Bay	211
5.8.11	Durrus Pier, Dunmanus Bay	212
5.8.12	NW of Crewe, Long Island	213
5.8.13	Schull harbour, Roaringwater Bay	214
5.8.14	Poulgorm Bay, Roaringwater Bay	216
5.8.15	Heir Island, Roaringwater Bay	217
5.8.16	Cunnamore Pier, Roaringwater Bay	219

5.8.17	Turkhead, Roaringwater Bay	221
5.8.18	Baltimore Pier, Baltimore Harbour	222
5.8.19	Lough Hyne Forest, Lough Hyne	224
5.8.20	Reen Pier, Castle Haven	226
5.8.21	Myross, Bunnaglanna Bay	228
5.8.22	Keelbeg Pier, Glandor Bay	229
5.8.23	Duneen Bay Beach, Duneen Bay	231
5.8.24	Blind Strand, Blindstrand Bay	232
5.8.25	Castlepark marina, Kinsale Bay	233
5.8.26	Castletown, Oysterhaven Bay	234
5.8.27	American Pier, Cork Bay	236
5.8.28	Roche's Point, Cork Bay	238
5.8.29	Youghal lighthouse, Youghal Bay	239
5.9	County Waterford	240
5.9.1	Youghal Bridge, Youghal Bay	241
5.9.2	Ballynagaul Beach, Dungarvan Bay	242
5.9.3	Ballinacourty Harbour, Dungarvan Bay	243
5.9.4	Tramore dunes and Back Beach, Tramore Bay	244
4.9.5	Woodstown Strand, Waterford Harbour	245
5.9.6	Passage East Beach, Waterford Harbour	247
5.10	County Wexford	248
5.10.1	The Wreck of the Port Lairge, Bannow Bay	249
5.10.2	Newtown, Bannow Bay	250
5.10.3	Killmore Pier, Celtic Sea	252
5.10.4	Carne Pier, Saint Margret's Bay	253
5.10.5	Saint Helens Pier, Irish Sea	254
5.10.6	Rosslare Harbour, Irish Sea	255
5.10.7	Small Boat Harbour, Irish Sea	256
5.10.8	Rosslare Strand, Irish Sea	257
5.10.9	Warren lower, Wexford Harbour	258
5.10.10	Burrow, Wexford Harbour	259
5.10.11	Wexford Bridge, Wexford Harbour	260
5.10.12	Ferrybank East, Wexford Harbour	261
5.10.13	Ballyconnigar Beach, Blackwater Harbour	262
5.10.14	Cahore Beach, Irish Sea	263
5.10.15	Cahore Pier, Irish Sea	264
5.11	County Dublin	265
5.11.1	Clontarf Outdoor pool, Dublin Bay	266
5.11.2	Clontarf Outdoor pool intertidal, Dublin Bay	267
5.11.3	Sutton dinghy club, Dublin Bay	269
5.12	County Louth	270
5.12.1	Salterstown Pier, Dundalk Bay	271
5.12.2	Gyles Quay Pier, Dundalk Bay	272
5.12.3	East of Greenore Point, Carlingford Bay	273
5.12.4	West of Greenore Point, Carlingford Bay	274
5.12.5	Carlingford Pier, Carlingford Bay	275
6.	Literature	276

1. Abstract

In 2024-2025, 171 locations along the coastline of the Republic of Ireland were searched for feral Pacific oyster (*Magallana gigas*) settlement to assess the spread of this invasive species in time and space, since the first national survey, which focused on this species, took place in 2009. Over time, feral oyster populations have grown, and spread out. The species has become well-established throughout Ireland, while being particularly abundant along the western coastline. The presence of feral oysters appears, to some extent, to be connected to the existence of oyster farming within a bay. Notably, however, their distribution appears to be more reliant on environmental factors, their natural dispersal capabilities, and key establishment habitats, both natural and artificial, than only on their proximity to oyster farms or ports. In this context, it seems, for example, that specific local habitats, like piers, harbour crucial source populations. The study furthermore revealed that feral oysters have a tendency to form clusters on preferred establishment substrates like boulders, artificial structures, and oyster shells, while, for example, they do not tend to settle on the shells of other molluscs, even where those are more abundant. The insights from this study can help to identify strategies to mitigate the impact and further spread of the Pacific oyster, both within Ireland and internationally. Further, more detailed data analyses, could yield more specific insights, considering this report focuses mainly on general findings, and survey results presented for each county and survey, separately.

2. Introduction

The cultivation of Pacific oysters (*Magallana gigas*), commenced in Ireland during the 1970s (Steele & Mulcahy, 1999) with the expectation that the existing environmental temperatures and overall conditions would not allow for the successful reproduction of this oyster in the wild. While there have been anecdotal accounts of feral Pacific oysters in the Republic of Ireland since the 1980's, no widespread recruitment was recorded until 2009 when the 1st targeted survey of feral oysters was conducted nationally (Kochmann *et al.*, 2013). Locally high levels of feral oyster recruitment was recorded, especially in Lough Swilly and Lough Foyle, and to a lesser degree in other bays around the coast (Kochmann *et al.* 2013). In a subsequent national survey in 2012 and 2013, which also included Northern Ireland, expanded recruitment was found in new bays, and within water bodies where recruitment had already been recorded. At that time, Lough Foyle appeared to be the only bay where a distinct population decline was noted in comparison to the situation in 2009 (Zwerschke *et al.*, 2017). Despite the inclusion of 70 locations in the Republic of Ireland, the surveys conducted by Kochmann *et al.* (2013) and Zwerschke *et al.* (2017) did not encompass every bay, which explains why some extended populations of feral Pacific oysters have probably remained undetected over the years. One such population was recently discovered in Kenmare Bay, where the Marine Institute could confirm in a survey in September 2023 that feral Pacific oysters had established themselves in high densities, especially in the more sheltered harbours and coves of the inner bay (Marine Institute, 2023). Considering these and other findings, the Department of Agriculture, Food and the Marine (DAFM) has increasingly requested the Marine Institute for information on the expansion of feral Pacific oysters in Ireland, while simultaneously looking for recommendations on potential mitigation measures to minimise the impact on native species communities.

GiMaRIS was commissioned by the Marine Institute (MI) to survey the spread of feral oysters in the Republic of Ireland in 2024-2025. This will facilitate the provision of advice to DAFM as it relates specifically to Natura assessments for aquaculture licensing.

The 2024-2025 surveys included all 67 sites searched in 2009, 2012 and/or 2013 by Kochmann *et al.* (2013) and Zwerschke *et al.* (2017), together with 102 additional sites, covering all sheltered bays and estuaries along the coast of the Republic of Ireland, and some sites that lay more exposed to the open sea. The focus was on sheltered bays and habitats as Kochmann *et al.* (2013), Zwerschke *et al.* (2017) and others have already convincingly shown that feral oysters are relatively rarely found in areas more exposed to the open sea.

The survey's main aim was to carry out targeted surveys to determine where the Pacific oyster has successfully recruited to intertidal habitats in the Republic of Ireland. In addition, this study also focused on recording key factors that may explain why feral oysters have established in certain areas and habitats. This includes, for example proximity to oyster culture operations, presence of artificial structures like piers, and availability of suitable habitats for oyster establishment, like boulders and shells.

The present report describes the data collected in the 172 surveys conducted in 2024 and 2025, also including basic comparisons with the known spread of feral oysters in 2009, 2012 and 2013, and the key factors that may influence feral oyster establishment. We will also present some "side-products" here, such as the extent of native flat oysters (*Ostrea edulis*), as recorded in the intertidal while searching for feral Pacific oysters.

3. Methods

3.1 Survey sites

Between 2024 and 2025, the survey encompassed a search for feral Pacific oysters and native oysters at 171 intertidal sites across the Republic of Ireland (Table 1). This included the 70 sites that had been searched in 2009, 2012 and 2013 by Kochmann *et al.* (2013) and Zwierschke *et al.* (2017) (Fig. 1). We used a survey protocol similar to theirs in 2024 and 2025. When selecting sites, Google Maps and Google Street View (maps.google.com) were used, keeping in mind that Pacific oysters require some sort of hard substrata, such as pebbles, rocks, shells, and/or artificial structures like concrete piers, to settle on. The 171 sites were chosen to include all bays in the Republic of Ireland, which, due to their geographical location, offer some degree of

natural shelter. Hereby it was assumed that the residence time of water in a sheltered bay would surpass the residence times in locations more directly facing the Atlantic Ocean or Irish Sea. Previous studies on Pacific oyster settlement (e.g., Kochmann *et al.*, 2013) already showed that Pacific oysters prefer to establish themselves on hard substrata in these more sheltered bays. As a limited test to confirm this, in some bays (e.g., in Kenmare river and in Galway Bay) the sites were selected along a gradient from being more sheltered to sites that lay more exposed to the open Atlantic Ocean.

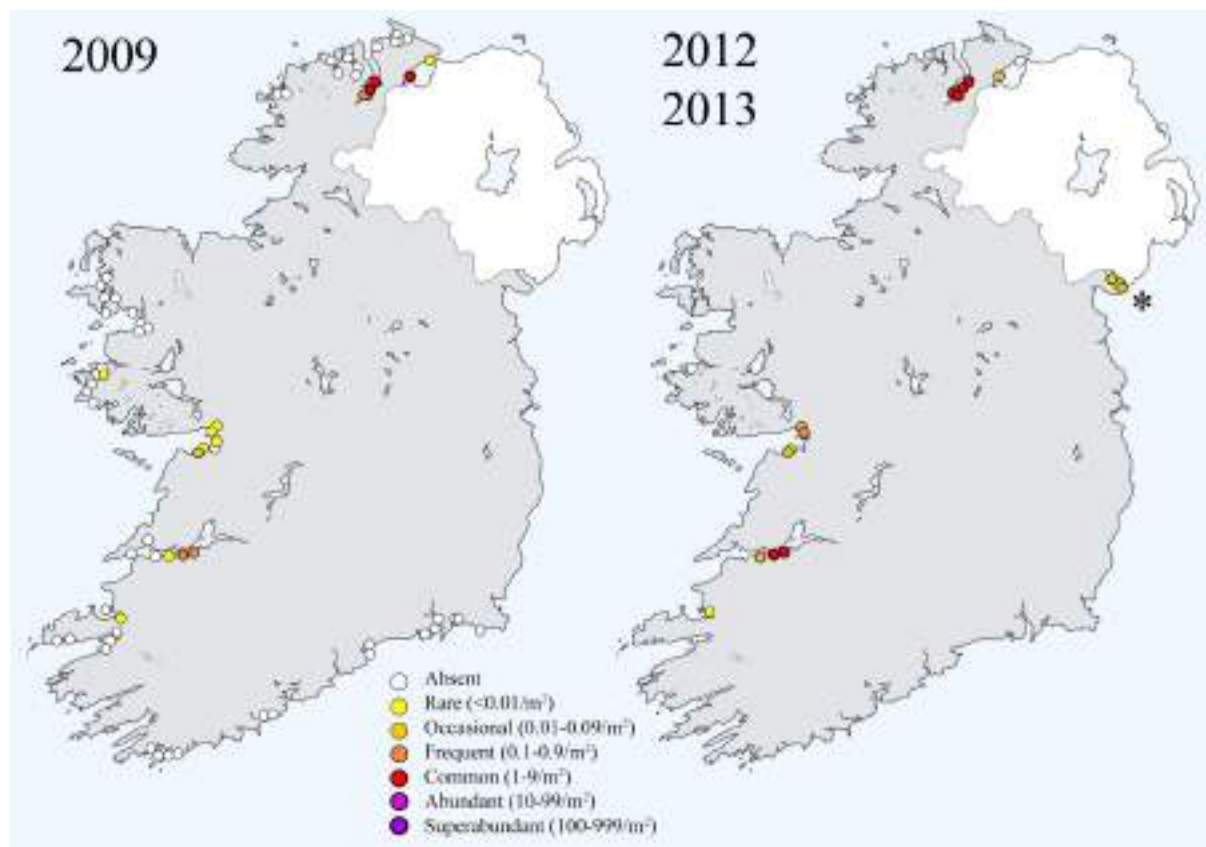


Fig. 1. Feral Pacific oyster distribution in the Republic of Ireland as recorded in the national surveys conducted in [A] 2009 (Kochmann *et al.*, 2013), and in [B] 2012-2013 (Zwierschke *et al.*, 2017). Where in the present (2024-2025) study loose oysters lying next to trestles were not counted as feral oysters, these oysters were counted in for example Zwierschke *et al.* (2013) in Carlingford Lough (* sites in the 2012-2013 figure). Zwierschke *et al.* (2013) indicate that these oysters are probably originating from bags with oysters from nearby oyster farms, and that no definite proof of feral oyster settlement was found during their survey.

Table 1. Surveys conducted in 2024-2025. Results for each survey separately, are described in Chapter 5.

* Survey locations, also searched by Kochmann *et al.* (2013) and/or Zwerschke *et al.* (2017). Descriptions of survey types are provided in the text below (Section 3.3).

Survey	Date	County	Bay name	Location name	Survey type	GPS Start
1*	15-7-2025	Donegal	Lough Foyle	Three Trees	Timed Survey	N55 06.529 W7 12.646
2*	15-7-2025	Donegal	Lough Foyle	Moville	Timed Survey	N55 11.234 W7 02.396
3*	19-7-2024	Donegal	Trawbreaga Bay	Ballymageehan	Timed Survey	N55 17.340 W7 18.875
4	19-7-2024	Donegal	Trawbreaga Bay	Ballymageehan Beach	Timed Survey	N55 17.389 W7 18.479
5*	19-7-2024	Donegal	Trawbreaga Bay	Magherard Beach	Timed Survey	N55 16.953 W7 16.482
6*	19-7-2024	Donegal	Trawbreaga Bay	Malin Beach	Timed Survey	N55 17.560 W7 15.619
7*	19-7-2024	Donegal	Trawbreaga Bay	Presbyterian Malin Church	Timed Survey	N55 18.502 W7 18.638
8	19-7-2024	Donegal	Dunaff Bay	Leenan Beach	Timed Survey	N55 15.664 W7 30.821
9*	18-7-2024	Donegal	Lough Swilly	Inch Pier	Timed Survey	N55 05.018 W7 30.801
10*	18-7-2024	Donegal	Lough Swilly	Quay shore	Timed Survey	N55 00.504 W7 33.956
11*	17-7-2024	Donegal	Lough Swilly	Gortleck Beach	Timed Survey	N55 01.292 W7 34.975
12*	17-7-2024	Donegal	Lough Swilly	Ballgreen Beach	Timed Survey	N55 02.604 W7 33.585
13*	16-7-2024	Donegal	Mulroy Bay	Cranford Pier	Timed Survey	N55 8.959 W7 41.733
14*	16-7-2025	Donegal	Mulroy Bay	Woodquarter Pier	Timed Survey	N55 07.350 W7 42.129
15*	16-7-2024	Donegal	Mulroy Bay	Marks Point, Carrick Bay	Timed Survey	N55 10.487 W7 44.690
16	15-7-2024	Donegal	Mulroy Bay	Glinsk South	Timed Survey	N55 12.249 W7 46.809
17	16-7-2024	Donegal	Mulroy Bay	Millstone Bay	Timed Survey	N55 11.426 W7 45.746
18	16-7-2024	Donegal	Mulroy Bay	Harry Blaney Bridge	Timed Survey	N55 11.426 W7 45.752
19	16-7-2024	Donegal	Mulroy Bay	Tirloughan Bay	Timed Survey	N55 11.052 W7 45.960
20*	16-7-2024	Donegal	Mulroy Bay	Drongawn Lough Figart Hill	Timed Survey	N55 10.819 W7 47.150
21*	16-7-2024	Donegal	Sheephaven Bay	Doe Castle	Timed Survey	N55 08.118 W7 51.806
22	16-7-2024	Donegal	Sheephaven Bay	Rinnaraspay Point	Timed Survey	N55 08.439 W7 52.630
23*	16-7-2024	Donegal	Sheephaven Bay	Portnablagh Pier	Timed Survey	N55 10.876 W7 55.694
24*	17-7-2025	Donegal	Anagaire Estuary	Anagaire car park	Timed Survey	N55 01.341 W8 19.101
25*	17-7-2025	Donegal	Cruit Bay	St. Mary's Church	Timed Survey	N55 01.158 W8 24.028
26	17-7-2025	Donegal	Dungloe Bay	South of Inisheane	Timed Survey	N54 56.368 W8 24.073
27	16-7-2025	Donegal	Trawenagh Bay	North of Derrylough	Timed Survey	N54 52.674 W8 19.835
28	14-7-2025	Donegal	Ardara Bay	Garrahill	Timed Survey	N54 45.906 W8 28.432
29	18-7-2025	Donegal	Donegal Bay	Binnoc Slipway	Timed Survey	N54 37.531 W8 25.850
30	18-7-2025	Donegal	Donegal Bay	Port Pier	Timed Survey	N54 38.173 W8 18.661
31	20-7-2024	Donegal	Donegal Bay	Muckros	Timed Survey	N54 37.941 W8 08.168
32	20-7-2024	Donegal	Donegal Bay	East of Rooney's Island	Timed Survey	N54 37.396 W8 07.985
33	20-7-2024	Donegal	Donegal Bay	Kildoney glebe Beach	Timed Survey	N54 31.125 W8 15.724
34	14-7-2025	Sligo	Sligo Bay	Lissadell Beach	Timed Survey	N54 20.498 W8 33.660
35	21-7-2025	Mayo	Killala Bay	Ross Beach	Timed Survey	N54 12.660 W9 12.130
36	24-7-2025	Mayo	Broadhaven Bay	Rinnashinnagh	Timed Survey	N54 13.180 W9 52.514
37	21-7-2025	Mayo	Blacksod Bay	Emilybeg	Timed Survey	N54 12.662 W10 1.328
38	22-7-2025	Mayo	Blacksod Bay	Claggan Bay Beach	Timed Survey	N54 10.420 W9 57.111
39*	22-7-2025	Mayo	Blacksod Bay	Bunafolly	Timed Survey	N54 03.637 W9 56.007
40*	25-7-2024	Mayo	Achill	Valley Beach	Timed Survey	N54 01.056 W9 57.199
41	25-7-2024	Mayo	Achill	Inishbiggle Ferry West	Timed Survey	N53 59.831 W9 55.756
42*	25-7-2024	Mayo	Achill	Derrowlla Beach	Timed Survey	N53 57.925 W9 56.436
43*	25-7-2024	Mayo	Achill	Tonreege East Beach	Timed Survey	N53 57.469 W9 51.320
44*	25-7-2024	Mayo	Achill	Gubnahardia	Timed Survey	N53 52.569 W9 56.167
45*	22-7-2024	Mayo	Clew Bay	Inishnacross	Timed Survey	N53 53.111 W9 41.186
46	22-7-2024	Mayo	Clew Bay	Drumfurban	Timed Survey	N53 54.007 W9 40.919
47	22-7-2024	Mayo	Clew Bay	Raigh Pier	Timed Survey	N53 53.661 W9 38.313
48	22-7-2024	Mayo	Clew Bay	Roslaher Beach south	Timed Survey	N53 51.438 W9 33.758
49	22-7-2024	Mayo	Clew Bay	Cushalogurt Beach	Timed Survey	N53 50.856 W9 33.824
50	21-7-2024	Mayo	Clew Bay	Inishnakillew Beach	Timed Survey	N53 50.970 W9 37.073
51*	21-7-2024	Mayo	Clew Bay	Rosmoney Pier	Timed Survey	N53 49.330 W9 36.900
52*	21-7-2024	Mayo	Clew Bay	Roman Island	Timed Survey	N53 48.048 W9 33.069
53*	21-7-2024	Mayo	Clew Bay	Carrowkeel Beach	Timed Survey	N53 47.295 W9 38.110
54	21-7-2024	Galway	Killary Harbour	St. Michael's Church	Timed Survey	N53 36.007 W9 41.588
55*	23-7-2024	Galway	Ballinakill Harbour	Derryinver	Timed Survey	N53 34.258 W9 58.482
56*	23-7-2024	Galway	Ballinakill Harbour	Rosleague Beach	Timed Survey	N53 33.278 W9 58.502

Survey	Date	County	Bay name	Location name	Survey type	GPS Start
57*	23-7-2024	Galway	Ballinakill Harbour	Cloonederowen Beach	Timed Survey	N53 33.017 W10 0.497
58*	23-7-2024	Galway	Streamstown Bay	Boolard Beach	Timed Survey	N53 30.755 W10 4.182
59*	23-7-2024	Galway	Streamstown Bay	Derreen Beach	Timed Survey	N53 30.194 W10 3.663
60	23-7-2024	Galway	Clifden Bay	Clifden Bay Beach	Timed Survey	N53 29.167 W10 3.142
61*	23-7-2024	Galway	Mannin Bay	Curhownagh Pier	Timed Survey	N53 28.018 W10 5.062
62*	23-7-2024	Galway	Mannin Bay	Maum Beach	Timed Survey	N53 27.853 W10 2.861
63*	23-7-2024	Galway	Ballyconneely Bay	Doohulla Pier	Timed Survey	N53 24.715 W10 2.709
64	27-7-2025	Galway	Cashel Bay	Cashel Pier	Timed Survey	N53 25.026 W9 47.980
65	27-7-2025	Galway	Kilkieran Bay	Off Kilbricken Pier	Timed Survey	N53 21.668 W9 37.725
66	27-7-2025	Galway	Kilkieran Bay	Kilbricken Pier	Distinct Habitat Survey	N53 21.619 W9 37.856
67	27-7-2025	Galway	Cashla Bay	Clynagh	Timed Survey	N53 17.260 W9 33.565
68	27-7-2025	Galway	Galway Bay	Spiddal Pier	Timed Survey	N53 14.469 W9 18.555
69*	26-7-2025	Galway	Galway Bay	Gurrane South	Timed Survey	N53 16.281 W8 56.670
70	25-7-2025	Galway	Galway Bay	West Galway Sailing Club Pier	Timed Survey	N53 14.631 W8 57.702
71	25-7-2025	Galway	Galway Bay	Galway Sailing Club Pier	Distinct Habitat Survey	N53 14.636 W8 58.020
72*	25-7-2025	Galway	Galway Bay	West of Ballinacourty Pier	Timed Survey	N53 12.605 W8 57.479
73	25-7-2025	Galway	Galway Bay	Ballinacourty Pier	Distinct Habitat Survey	N53 12.588 W8 57.493
74*	25-7-2025	Galway	Galway Bay	Killeenaran Pier	Distinct Habitat Survey	N53 11.811 W8 56.641
75*	26-7-2025	Galway	Kinvarra Bay	East of Crushoa Pier	Timed Survey	N53 09.239 W8 57.189
76	26-7-2025	Galway	Kinvarra Bay	Crushoa Pier	Distinct Habitat Survey	N53 09.242 W8 57.171
77	26-7-2025	Galway	Galway Bay	South of Parkmore Pier	Timed Survey	N53 10.281 W8 58.071
78	26-7-2025	Galway	Galway Bay	Parkmore Pier	Distinct Habitat Survey	N53 10.291 W8 58.089
79*	26-7-2025	Clare	Aughinis Bay	West of New Quay Pier	Timed Survey	N53 09.373 W9 04.550
80	26-7-2025	Clare	Aughinis Bay	New Quay Pier	Distinct Habitat Survey	N53 09.371 W9 04.549
81	26-7-2025	Clare	Poul-na-clough Bay	Finnavara demesne	Timed Survey	N53 08.818 W9 05.638
82*	26-7-2025	Clare	Poul-na-clough Bay	Scanlan's Island	Timed Survey	N53 08.903 W9 06.536
83*	26-7-2024	Clare	Shannon Estuary	Kilcredaun Fort	Timed Survey	N52 35.296 W9 42.275
84*	26-7-2024	Clare	Shannon Estuary	Cammoge Beach	Timed Survey	N52 38.268 W9 33.009
85	26-7-2024	Clare	Shannon Estuary	Poulnasherry Bay	Timed Survey	N52 39.890 W9 33.537
86*	27-7-2024	Limerick	Shannon Estuary	Mounttrenchard Beach	Timed Survey	N52 36.404 W9 09.033
87*	27-7-2024	Limerick	Shannon Estuary	Killacolla Cross Beach	Timed Survey	N52 35.249 W9 14.999
88*	27-7-2024	Kerry	Shannon Estuary	Carrig Island	Timed Survey	N52 34.515 W9 29.464
89*	27-7-2024	Kerry	Shannon Estuary	Tarbert Beach	Timed Survey	N52 34.744 W9 21.913
90*	31-7-2024	Kerry	Barrow Harbour	Talaught West Beach	Timed Survey	N52 17.089 W9 51.643
91*	31-7-2024	Kerry	Tralee Bay	Kilfenora Beach	Timed Survey	N52 16.551 W9 49.422
92*	8-8-2024	Kerry	Ventry Harbour	Cuan Pier	Timed Survey	N52 06.901 W10 21.911
93*	8-8-2024	Kerry	Dingle harbour	Hussey's Folly	Timed Survey	N52 07.717 W10 15.653
94*	8-8-2024	Kerry	Castlemaine Harbour	Roscullen Island	Timed Survey	N52 09.493 W9 49.995
95*	7-8-2024	Kerry	Castlemaine Harbour	Cromane Lower East	Timed Survey	N52 07.426 W9 53.547
96	7-8-2024	Kerry	Castlemaine Harbour	Cromane Lower West	Timed Survey	N52 06.766 W9 54.196
97*	7-8-2024	Kerry	Castlemaine Harbour	Dooks Beach	Timed Survey	N52 04.834 W9 55.770
98	1-8-2024	Kerry	Waterville Bay	Waterville	Timed Survey	N51 49.527 W10 10.362
99	1-8-2024	Kerry	Waterville Bay	Rinneen Beach	Timed Survey	N51 47.260 W10 10.896
100	1-8-2024	Kerry	Bealtra Bay	Derrynane Beach	Timed Survey	N51 45.666 W10 08.646
101	1-8-2024	Kerry	Kenmare River	Westcove Beach	Timed Survey	N51 45.861 W10 03.263
102	28-7-2025	Kerry	Kenmare River	Templenoe	Timed Survey	N51 51.941 W9 40.155
103	1-8-2024	Kerry	Kenmare River	Templenoe Pier	Timed Survey	N51 52.108 W9 39.652
104	1-8-2024	Kerry	Kenmare River	Templenoe Pier, high water line	Timed Survey	N51 52.161 W9 39.517
105	5-8-2024	Kerry	Kenmare River	North of Kenmare Bridge	Timed Survey	N51 52.336 W9 35.022
106	5-8-2024	Kerry	Kenmare River	Kenmare Bridge	Distinct Habitat Survey	N51 52.288 W9 34.942
107	6-8-2024	Kerry	Kenmare River	West of Derreenacallaha Pier	Timed Survey	N51 50.715 W9 39.147
108	6-8-2024	Kerry	Kenmare River	Derreenacallaha Pier	Distinct Habitat Survey	N51 50.729 W9 39.031
109	4-8-2024	Kerry	Kenmare River	Coornagillagh Pier	Timed Survey	N51 49.470 W9 44.412
110	4-8-2024	Kerry	Kenmare River	Coornagillagh Beach	Distinct Habitat Survey	N51 49.511 W9 44.466
111	4-8-2024	Kerry	Kenmare River	Loughaunacreen Beach	Timed Survey	N51 47.092 W9 49.459
112	28-7-2024	Kerry	Kenmare River	South of Kilmakilloge Pier	Timed Survey	N51 46.847 W9 48.316
113	28-7-2024	Kerry	Kenmare River	West of Kilmakilloge Pier	Timed Survey	N51 46.795 W9 48.440
114	3-8-2024	Cork	Kenmare River	Droumard	Timed Survey	N51 44.846 W9 52.446
115	3-8-2024	Cork	Kenmare River	Travaud Beach	Timed Survey	N51 40.361 W10 0.935

Survey	Date	County	Bay name	Location name	Survey type	GPS Start
116	3-8-2024	Cork	Ballydonegan Bay	Ballydonegan Beach	Timed Survey	N51 37.851 W10 3.548
117	3-8-2024	Cork	Bantry Bay	Cahermore	Timed Survey	N51 36.164 W10 2.612
118	3-8-2024	Cork	Bantry Bay	Dinish Island	Timed Survey	N51 38.849 W9 53.905
119	2-8-2024	Cork	Bantry Bay	Snave Bridge	Timed Survey	N51 43.933 W9 27.130
120	2-8-2024	Cork	Bantry Bay	Dunnamark	Timed Survey	N51 41.676 W9 26.581
121	2-8-2024	Cork	Bantry Bay	The Cove	Timed Survey	N51 41.204 W9 27.339
122	2-8-2024	Cork	Dunmanus Bay	Kilcrohane Pier	Timed Survey	N51 34.533 W9 41.736
123	2-8-2024	Cork	Dunmanus Bay	Rosnacaheragh Beach	Timed Survey	N51 36.313 W9 36.284
124	2-8-2024	Cork	Dunmanus Bay	Durrus Pier	Timed Survey	N51 37.053 W9 32.429
125	29-7-2025	Cork	Long Island	NW of Crewe	Timed Survey	N51 30.634 W9 35.071
126	29-7-2025	Cork	Roaringwater Bay	Schull harbour	Timed Survey	N51 31.782 W9 32.101
127*	29-7-2025	Cork	Roaringwater Bay	Pouलगorm Bay	Timed Survey	N51 32.931 W9 25.54
128	1-8-2025	Cork	Roaringwater Bay	Heir Island	Timed Survey	N51 29.983 W9 26.126
129*	30-7-2025	Cork	Roaringwater Bay	Cunnamore Pier	Timed Survey	N51 30.270 W9 25.458
130*	30-7-2025	Cork	Roaringwater Bay	Turkhead	Timed Survey	N51 30.408 W9 23.579
131*	31-7-2025	Cork	Roaringwater Bay	Baltimore Pier	Timed Survey	N51 29.296 W9 22.245
132	31-7-2025	Cork	Lough Hyne	Lough Hyne Forest	Timed Survey	N51 30.387 W9 18.397
133	7-8-2025	Cork	Castle Haven	Reen Pier	Timed Survey	N51 31.912 W9 9.967
134	7-8-2025	Cork	Bunnaglanna Bay	Myross	Timed Survey	N51 31.694 W9 9.061
135	7-8-2025	Cork	Glandor Bay	Keelbeg Pier	Timed Survey	N51 33.532 W9 8.386
136	30-7-2025	Cork	Duneen Bay	Duneen Bay Beach	Timed Survey	N51 34.738 W8 52.335
137	30-7-2025	Cork	BlindStrand Bay	Blind Strand	Timed Survey	N51 36.600 W8 41.315
138*	30-7-2025	Cork	Kinsale Bay	Castlepark marina	Timed Survey	N51 41.940 W8 30.880
139*	30-7-2025	Cork	Oysterhaven Bay	Castletown	Timed Survey	N51 42.553 W8 26.534
140	6-8-2025	Cork	Cork Bay	American Pier	Timed Survey	N51 50.717 W8 18.699
141	6-8-2025	Cork	Cork Bay	Roche's Point	Timed Survey	N51 47.679 W8 15.163
142	29-7-2025	Cork	Youghal Bay	Youghal lighthouse	Timed Survey	N51 56.770 W7 50.570
143	29-7-2025	Waterford	Youghal Bay	Youghal Bridge	Timed Survey	N51 58.698 W7 50.957
144*	9-8-2024	Waterford	Dungarvan Bay	Ballynagaul Beach	Timed Survey	N52 03.050 W7 33.966
145*	9-8-2024	Waterford	Dungarvan Bay	Ballinacourty Harbour	Timed Survey	N52 05.362 W7 34.303
146*	11-8-2025	Waterford	Tramore Bay	Tramore dunes and Back Beach	Timed Survey	N52 09.176 W7 04.994
147*	11-8-2025	Waterford	Waterford Harbour	Woodstown Strand	Timed Survey	N52 11.342 W6 58.965
148*	11-8-2025	Waterford	Waterford Harbour	Passage East Beach	Timed Survey	N52 14.246 W6 58.294
149*	9-8-2025	Wexford	Bannow Bay	The Wreck of the Port Lairge	Timed Survey	N52 14.229 W6 48.113
150*	9-8-2025	Wexford	Bannow Bay	Newtown	Timed Survey	N 52 14.233 W6 46.459
151	23-8-2025	Wexford	Celtic Sea	Killmore Pier	Timed Survey	N52 10.359 W6 35.210
152	23-8-2025	Wexford	Saint Margret's Bay	Carne Pier	Timed Survey	N52 11.887 W6 20.886
153	22-8-2025	Wexford	Irish Sea	Saint Helens Pier	Timed Survey	N52 13.721 W6 19.442
154	22-8-2025	Wexford	Irish Sea	Rosslare Harbour	Timed Survey	N52 15.079 W6 19.911
155	22-8-2025	Wexford	Irish Sea	Small Boat Harbour	Timed Survey	N52 15.179 W6 21.018
156	23-8-2025	Wexford	Irish Sea	Rosslare Strand	Timed Survey	N52 16.399 W6 23.107
157	10-8-2025	Wexford	Wexford Harbour	Warren lower	Timed Survey	N52 18.202 W6 23.828
158	10-8-2025	Wexford	Wexford Harbour	Burrow	Timed Survey	N52 18.194 W6 23.876
159	12-8-2024	Wexford	Wexford Harbour	Wexford Bridge	Timed Survey	N52 20.580 W6 27.392
160	12-8-2024	Wexford	Wexford Harbour	Ferrybank East	Timed Survey	N52 20.671 W6 27.167
161	23-8-2025	Wexford	Blackwater Harbour	Ballyconnigar Beach	Timed Survey	N52 25.724 W6 19.761
162	10-8-2024	Wexford	Irish Sea	Cahore Beach	Timed Survey	N52 33.717 W6 11.688
163	23-8-2025	Wexford	Irish Sea	Cahore Pier	Timed Survey	N52 34.159 W6 12.172
164	13-7-2025	Dublin	Dublin Bay	Clontarf Outdoor pool	Timed Survey	N53 21.605 W6 12.700
165	13-7-2025	Dublin	Dublin Bay	Clontarf Outdoor pool intertidal	Timed Survey	N53 21.541 W6 12.165
166	13-7-2025	Dublin	Dublin Bay	Sutton dinghy club	Timed Survey	N53 22.557 W6 06.175
167	13-7-2025	Louth	Dundalk Bay	Salterstown Pier	Timed Survey	N53 52.744 W6 18.237
168	14-7-2025	Louth	Dundalk Bay	Gyles Quay Pier	Timed Survey	N53 59.209 W6 14.373
169*	14-7-2025	Louth	Carlingford Bay	East of Greenore Point	Timed Survey	N54 01.579 W6 07.692
170*	14-7-2025	Louth	Carlingford Bay	West of Greenore Point	Timed Survey	N54 01.985 W6 09.411
171*	14-7-2025	Louth	Carlingford Bay	Carlingford Pier	Timed Survey	N54 02.534 W6 10.788

3.2 Feral oyster identification and species verification

Although the surveys focussed on detecting feral Pacific oyster (*Magallana gigas*) settlement, native flat oysters (*Ostrea edulis*) were also recorded. Feral Pacific oysters can look quite similar to native oysters in their conchological characteristics (Figs. 2-3), which is particularly true when considering recently settled specimens that are found on hard surfaces with irregular surfaces. Moreover, observations have shown that in areas where water currents are relatively strong, Pacific oysters tend to have a somewhat flattened form. In most cases, however, the specimens of the two species can be distinguished

reliably based on their external morphology, i.e. with Pacific oysters generally having an elongated form (longer than broad), strongly wavy edge and ribs, and brownish stripes (Fig. 2A), while flat oysters are generally more or less rounded, with a flat form and some minor ribs, no clear patterns with brownish stripes, and at the underside growth lines, forming a thin calcareous scales (Fig. 3A).

Acknowledging that species identification can sometimes be challenging, in every bay with feral Pacific oysters, muscle tissue from up to ten oysters was preserved in ethanol. This was done to enable verification of the oyster identification by subsequent DNA-analyses. DNA was isolated



Fig. 2. Two feral Pacific oysters (*Magallana gigas*), verified by DNA-analyses. [A] Typical elongated form with wavy edge and brownish stripes, on a boulder in Maum bay, Co. Galway; [B] Somewhat atypical form, more rounded, flattened, a slightly wavy edge, and no clear brown pattern.

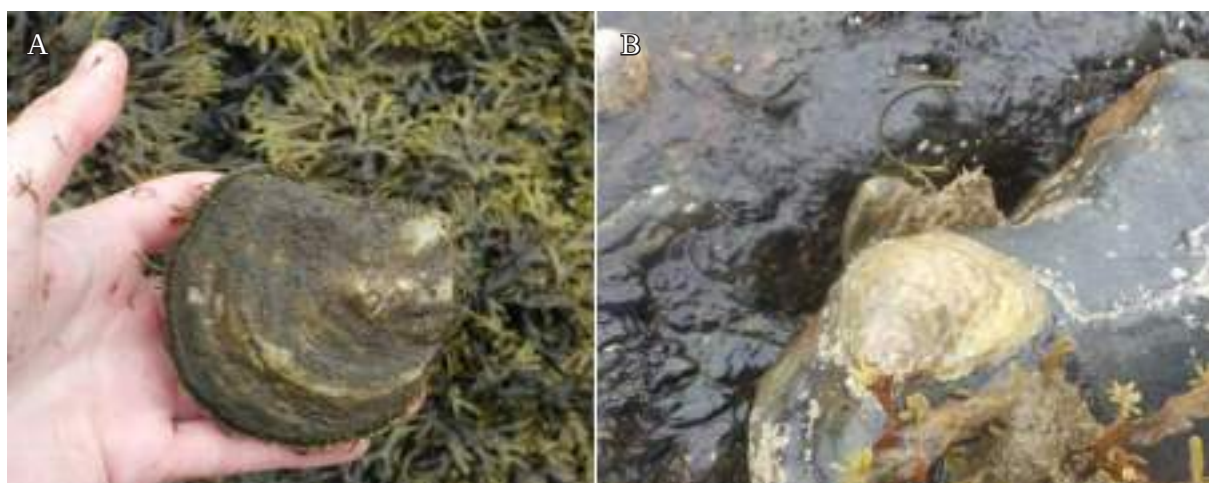


Fig. 3. Two native Flat oysters (*Ostrea edulis*), verified by DNA-analyses. A, Typical flat and rounded form with no discernible pattern, lying loose on the shoreline of Dunmanus Bay, Co. Cork; B, Somewhat atypical form, slightly elongated and relatively thick, attached to a boulder in the intertidal of Clew Bay, Co. Mayo.

and targeted within a Polymerase Chain Reaction (PCR) using a special 3-day CTAB protocol for molluscs, and a PCR program as described by van Haaren et al. (2021), with the difference that in the present study the marker 16S was targeted with primers of Palumbi *et al.* (2002), and a PCR annealing temperature of 48 °Celsius.

For every bay in which feral oysters were detected the 16S DNA marker was sequenced of at least one individual. Sequencing of the PCR products was done by Macrogen Europe. The DNA-barcodes were deposited in the open access database GenBank (<https://www.ncbi.nlm.nih.gov/genbank/>), making them available for other studies to compare with. This concerns GenBank numbers PX149974-PX150009, PX462770-PX462784, and PX582985-PX583023. The paragraphs in Chapter 5, detailing the findings from each survey separately, also incorporate the GenBank numbers associated with the oysters within each specific survey.

Besides the DNA-sequencing, High Resolution Melt (HRM) analyses following a PCR, were done for up to 10 oysters per bay. Within these analyses, the RotorGene Q apparatus from Qiagen was used to assess at what temperature the double stranded “16S” DNA sequence of an oyster starts melting, i.e., becomes single stranded. Depending on the DNA-sequence this happens at a unique temperature. This melting temperature could therefore effectively be used to distinguish the 16S DNA sequences of Pacific oysters from those of Flat oysters (Fig. 4). For these HRM analyses the method was used as described by Gittenberger & Gittenberger (2021) for studying polytypic mussels, i.e. *Mytilus edulis*.

A separate “id” issue concerned differentiating between Pacific oysters that had established themselves from their pelagic larvae and oysters that had been lost or discarded from an oyster farm. To make this distinction, if an oyster farm was nearby (within 500 meters), feral Pacific oyster settlement was only concluded if Pacific oysters were found settled on hard substrata like shells, rocks and/or pebbles. Photographs were taken to document this, depicting the

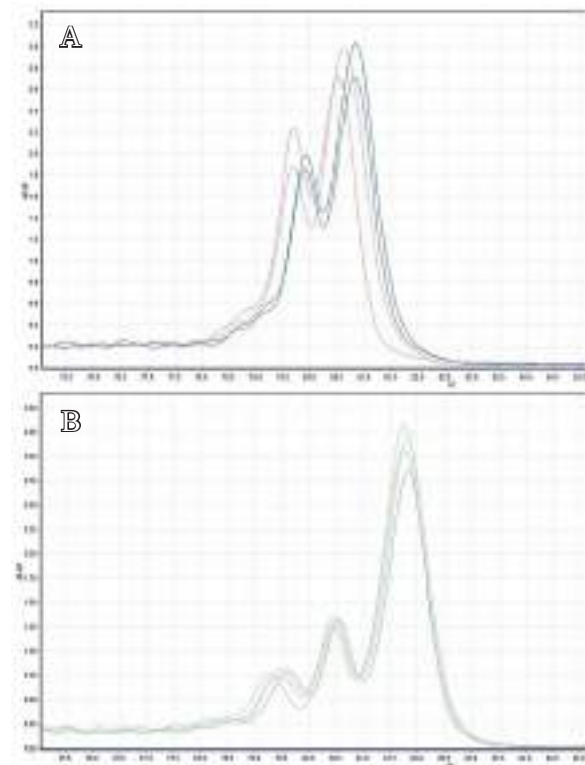


Fig. 4. High Resolution Melting (HRM) curves of the 16S barcode of [A] four feral Pacific oysters (*Magallana gigas*), and [B] four Flat oysters (*Ostrea edulis*), collected during the surveys in 2024-2025..

oyster and the surface to which it was attached. Within the paragraphs that present the results of each individual survey (Chapter 5), at least one such photograph was included, for surveys during which feral oyster settlement was found. Pacific oysters that were observed in proximity to an oyster farm, and which were not attached to any hard substrata, were presumed to have originated from that farm and not considered to be feral oysters in the present study. In close proximity to practically every oyster farm, we noticed (but did not score) at least some loose oysters of which it seemed highly probable that they had come out of the oyster bags, also considering they were very regularly formed. In the Pacific oyster surveys in 2009, 2012 and 2013 (Kochmann *et al.*, 2013; Zworsche *et al.*, 2017), such oysters were apparently scored, as Zworsche *et al.* (2017) indicates that the oysters they found in the “wild” in Carlingford Lough, were probably lost from oyster bags and not the result of feral oyster settlement. In our comparisons with these studies from 2009, 2012 and 2013, we will take this into account.

3.3 Timed surveys and Distinct habitat surveys

A total of approximately 95 hours were dedicated to searching 171 locations along 125 kilometers of the Irish coastline, specifically looking for feral Pacific oysters. The surveys were all conducted within a two-hour window surrounding the low tide, with an average time of 33 minutes before or after. Surveys were not conducted near or during dead tides, and any surveys exceeding one hour before or after low tide, were only carried out close to or during spring tides. We used the tidal data provided by the United Kingdom Hydrographic Office (UKHO), for locations that were the closest to the sites where the surveys were conducted. This data was accessed via an UKHO subscription in the Tides Planner application (Version 5.18).

Most surveys concerned timed surveys, which were done following an approach similar to that of Kochmann *et al.* (2012) and Zwerksche *et al.* (2017) during their surveys in 2009, 2012 and 2013. Within such a survey, the coastline was searched for at least 30 minutes, most of the time slowly (on average 1.3 km/hour) walking along the waterline. Part of the surveys were also conducted further up the shore, in locations that were lacking hard substratum at the waterline, as well as in areas with pools in the bedrock in various tidal zones. It was determined on-site, whether habitats appropriate for feral Pacific oyster settlement seemed to exist in multiple tidal zones. If so, they were also included as part of the track walked.

The number of timed surveys conducted in a bay, generally ranging from one to six, depended on the size and complexity of each individual bay. The focus remained on more sheltered inland locations as previous studies have already shown that feral oyster densities tend to be higher there (Kochmann *et al.*, 2013). The following information was documented for each of survey to provide an understanding of the feral oysters found, as well as the substrates they had established themselves on, in addition to the environment, the habitats present, and the track walked. Where applicable, the categories and classifications that were used were replicated from Kochmann *et al.* (2013):

- Survey number & field code
- Local location name
- Bay residence time (days), if known from other sources
- Presence of oyster culture in the categories absent, close by (visible on-site) and far away, i.e. known to be present in the embayment, but generally >500 m from the study site. Acknowledging the Classified Bivalve Mollusc Production Areas as used by the Sea Fisheries Protection Authority (SFPA).
- Presence of artificial structures like piers, etc., visible on-site.
- Date, and time start and end + total time searched.
- GPS start and end location, together with the exact track walked as visualised on a map.
- Total distance of the coastline searched.
- Width of the intertidal zone estimate, based on which it was categorized in 0-50 m, 51-100 m, 101-150 m and >150 m. Where appropriate, an electronic telescope infrared rangefinder was used.

Table 2. SACFOR Abundance scale, used for specifying *Magallana gigas* densities in the present study.

SACFOR; size of individuals/colonies (3-15 cm)		Density (per m ²)	Guide
S	superabundant	100 - 999	>100 /m ²
A	abundant	10 - 99	10 - 99 /m ²
C	common	1 - 9	1 - 9 /m ²
F	frequent	0.1 - 0.9	1 / 10m ² - <1 /m ²
O	occasional	0.01 - 0.09	1 / 100m ² - <1 /10m ²
R	rare	0.001 - 0.009	1 / km ² - <1 /100m ²
None	absent	0	0

Table 3. Visual categorisation of habitat types.

Category	Measure
Bedrock	Solid rock
Boulders	25.6 cm – 1.024 m
Cobbles and pebbles	25.6cm – 1.6 cm
Gravel	1.6 cm – 0.4 cm
Sand	0.063mm – 4 mm
Mud	<0.063 mm
Mixed sediment	(describe)
Biogenic reef (mussel beds, <i>Sabellaria</i> reefs)	(describe)
Macroalgae-dominated substratum	(describe)

- Estimate of the average % hard substrate, % macro-algae and % soft substrate present along the track walked. Table 3 was used to specify the most abundantly hard and soft substrates. Dominating macro-algae were described using their scientific species names.
- Average abundance of feral Pacific oysters within a survey using the SACFOR scale (Table 2). This was preferably based on calculations based on the exact number of oysters counted and/or recorded with separate GPS coordinates. At abundances of more than frequent (Table 2), where recording GPS coordinates of all oysters separately was not deemed workable, the abundance was estimated.
- Up to 100 feral oysters per survey were photographed. This was done in a manner (e.g., with Vernier callipers in photo) that allowed for recording for each individual oyster: the size, local habitat, and the establishment substrate, together with its GPS-coordinates. This was done for a total of 2248 oysters during the surveys in 2024 and 2025.
- For each oyster the primary substrate (Table 3) was noted on which it had settled. If attached, it was scored as fixed; if not, it was scored as loose. Where oysters were fixed to their primary substrate, the secondary substrate was also scored. This relates to the substrate the primary substrate was fixed to or rested upon. Finally, it was determined if the whole connected structure was fixed or loose. Loose means that it could reasonably

be assumed that the oyster and its substrates could be moved around by currents. For instance, this can occur when an oyster is connected to a small pebble, but it would not be possible if the oyster were connected to a boulder. In addition to the overall structure being “loose”, the presence of any seaweed species attached to it was documented if it was at least 5 centimeters in size. This was done, following observations at several locations where sizable populations of live, feral oysters were found near the high water mark, apparently transported there by the “floating” seaweeds that were attached to them. We hereby assumed subjectively that a seaweed of at least 5 cm was required to distinctly affect an oyster’s floating.

A methodology akin to that of Kochmann *et al.* (2013) was used to search two 30-meter transects in regions with relatively high densities of feral oysters. At locations where oyster populations were found to be frequent to common (Table 2), these two transects were only done, where the separate photographing and recording of the GPS coordinates of each individual oyster was determined impractical. Where it was decided to search two 30-meter transects, this was done after conducting the timed search at locations where the highest densities of oysters appeared to be present. In order to mark the transects, metric tape measures of at least 30 meters long were used, in addition to two PVC poles, each a meter in length, that were joined in a T-shape configuration. These poles served as size references on the photos that were taken of each of the 30 meters separately. These photographs were taken of every square meter in overview, and with detail photographs of all oysters present.

4. General results and discussion

Kochmann *et al.* (2013) and Zwerksche *et al.* (2017) were used as baselines for comparing the distribution of feral Pacific oysters across the Republic of Ireland in time and space. They describe the first nation-wide surveys that focused on detecting feral Pacific oyster settlement throughout the Republic of Ireland in 2009 and 2012-2013. The feral oyster abundances found in these studies at 70 different sites, are shown in Figure 1. The location positions in Figure 1 are based on the GPS coordinates from Kochman *et al.* (2013) and Zwerksche *et al.* (2017), along

with the in-field conditions encountered during the surveys in 2024-2025. Figure 1's maps are not a perfect match with the distribution maps in Kochman *et al.* (2013) and Zwerksche *et al.* (2017) as some dots in those papers seem misplaced (e.g., on land), and some GPS coordinates point to research sites while others appear to mark spots where the car was parked. The dots in Figure 4 mark the survey start locations from 2024/2025 (Fig. 5), at or nearby the 70 sites searched in 2009 and 2012-2013.

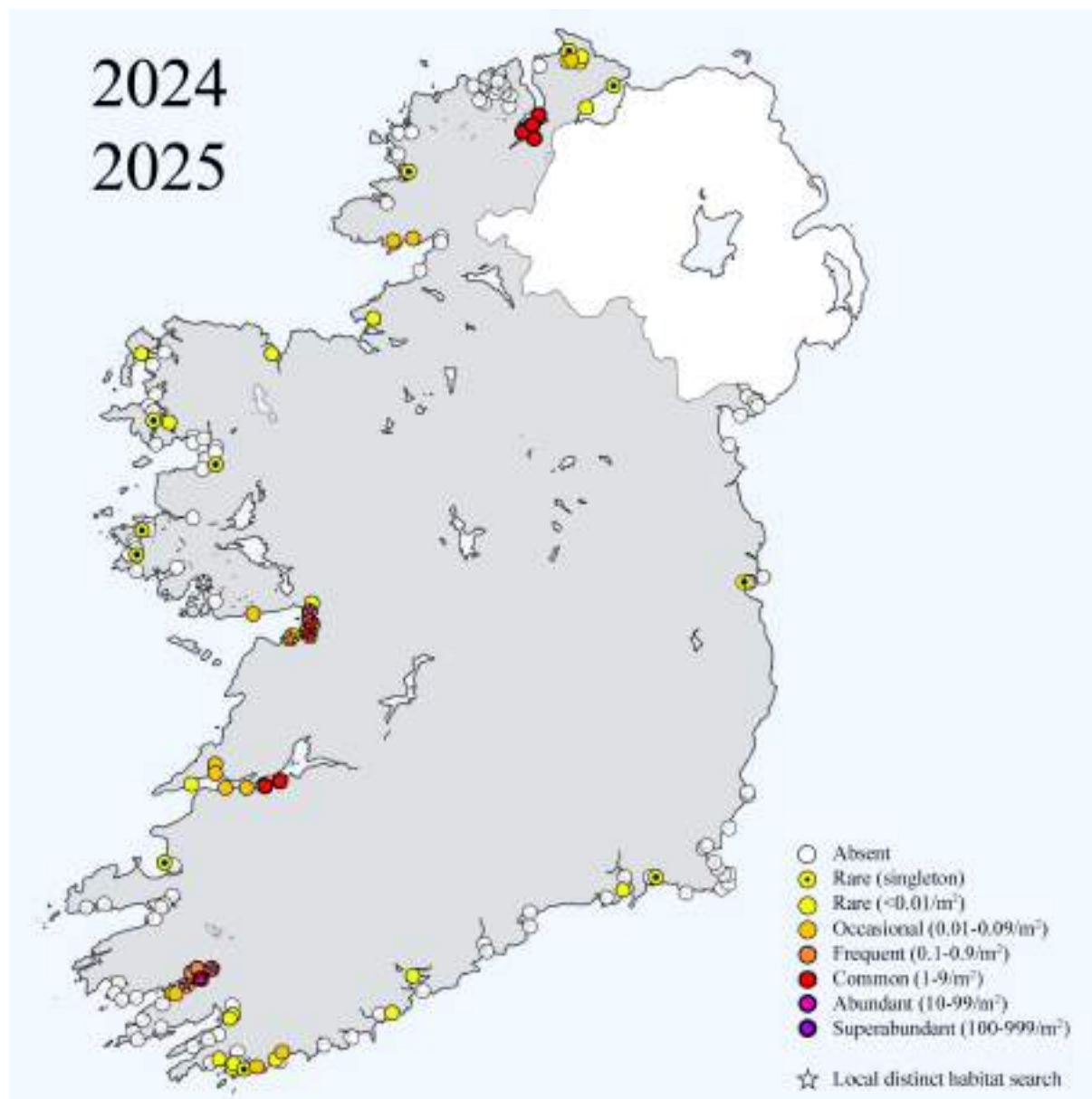


Fig. 5. Feral Pacific oyster (*Magallana gigas*) occurrences, recorded in 2024-2025.

By examining the distribution of feral oysters along the coast in the years 2009, 2012-2013, and 2024-2025 as illustrated in Figures 1 and 5, several spatial and temporal trends in their distribution become evident. To begin with, it is apparent that as time passes at locations where feral oysters were found, abundances tend to increase until the oysters become common (1-9 oysters/m²). This population expansion is, for example, ongoing in the inner Galway bay (central west Ireland) where the abundances of feral oysters increased from mostly rare (<0.01 oysters/m²) in 2009, to mostly occasional (0.01-0.09 oysters/m²) in 2012-13 and mostly frequent in 2024-2025 (0.1-0.9 oysters/m²) (Figs. 1, 5). We expect they will become common (1-9 oysters/m²) at most locations in the coming years, mirroring what has already happened in Lough Swilly, Shannon Estuary and Kenmare Bay.

A population in Lough Foyle, Donegal, seems to be the one distinct exception to this trend of expanding populations, given that it is decreasing rather than increasing. There, at the most inland site near Derry, the abundance of feral oysters was scored as common (1-9 oysters/m²) in 2009, as occasional (0.01-0.09 oysters/m²) in 2012-2013, and as rare (<0.01 oysters/m²) in 2024-2025 (Figs 1, 5).

In addition to abundances at most sites increasing over time, the surveys in 2024-2025 show that the feral oyster settlements have become much more widespread all around the Republic of Ireland. This can partly be explained by the fact that only 70 locations were searched in 2009, 2012 and 2013, while 171 locations were searched in 2024-2025, but not completely. For example, various sites along the south coast were searched in 2009 and 2012-2013, but no feral oysters were

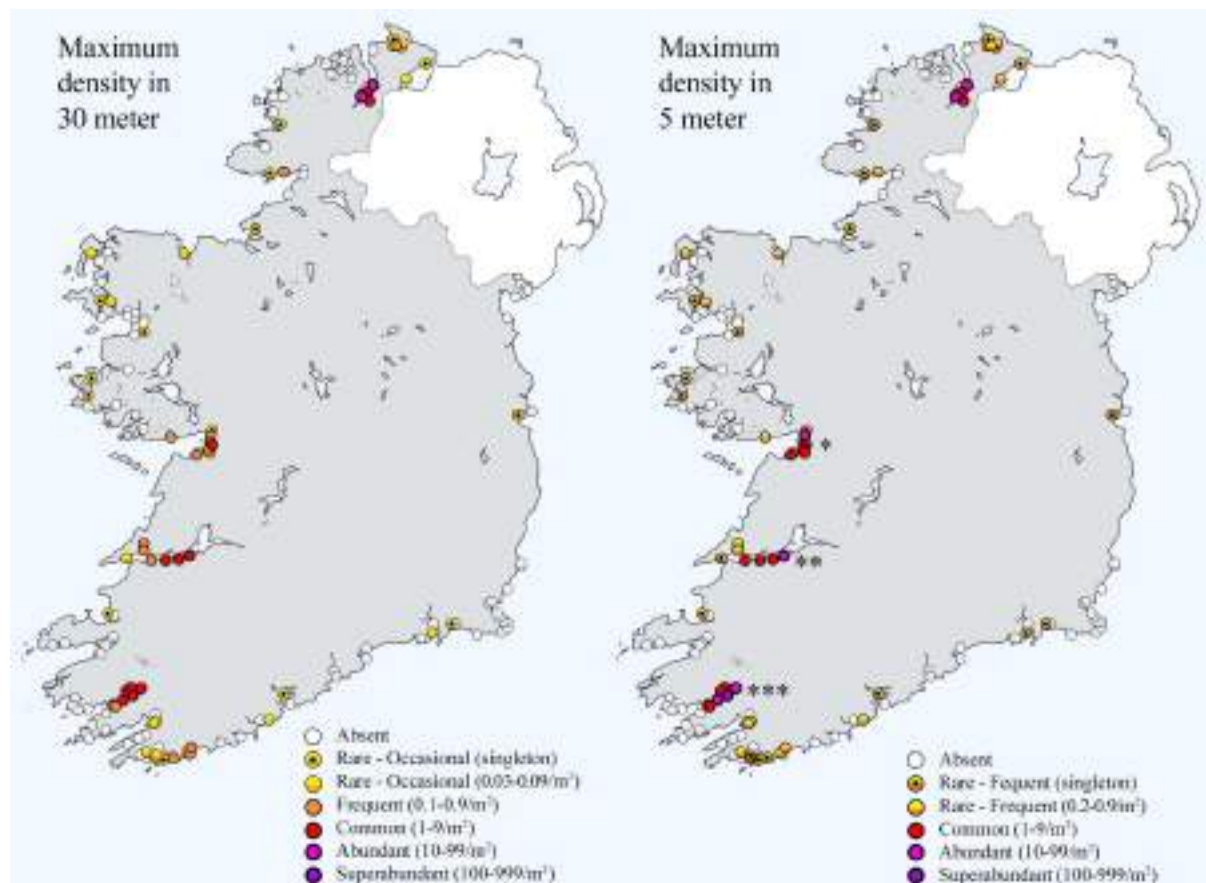


Fig. 6. Maximum feral Pacific oyster (*Magallana gigas*) abundances in 30 and in 5 continuous meters, within the surveys conducted in 2024-2025. Notice that the highest densities (abundant and/or superabundant) within 5 continuous meters, are recorded more inshore in Galway Bay (*), Shannon Estuary (**) and Kenmare River (***).

found. At many of these sites in 2024-2025, feral oysters were found, whereby the size classes of the individuals found indicated that several generations of oysters were present (see Chapter 5). Additionally it is clear that feral oysters have been establish themselves in 2024-2025 in and around Achill, where no such settlements were recorded in 2009. It appears improbable that widespread settlement was already occurring along the entire coastline in 2009, although this is still uncertain because there were no surveys conducted along the east coast in 2009, and the 2024-2025 surveys incorporated an additional 101 locations.

In examining the establishment of feral Pacific oysters in 2024 to 2025, Figure 5 depicts the abundances along the entire transects that were walked, while Figure 6 shows the highest densities recorded within 30 and 5 continuous meters. Figures 5 and 6 show that at many sites the maximum abundances increase when they are calculated based on a complete track, 30 continuous meters, and finally 5 continuous meters. This demonstrates that feral oysters do not tend to settle evenly distributed across a given area. Instead, they tend to settle in clusters close to each other. These clusters may play a significant role, especially when they are localized and may function as key source populations for settlements in nearby environments and on vectors, like boats, which may promote their further dispersal. Such local hotspots often concern piers, as is described in more detail in Chapter 5, especially for the bays of Co. Galway (Section 5.4).

Habitat preferences are likely to explain for the most part, why feral oysters cluster together. For example, of the 2248 feral oysters of which the establishment habitat was assessed in the surveys in 2024 and 2025, 56% (1259 oysters) were settled on boulders. This indicates that feral oysters exhibit a strong preference to settle on boulders, and as a consequence, in areas where boulders are not abundant, the oysters tend to settle close to each other on the limited number of boulders available. Furthermore, with respect to feral oysters that have not established themselves on a boulder, artificial structure or other fixed surface, Pacific oysters seem to demonstrate a strong preference for settling on the shells of other Pacific oysters rather than on shells from other mollusks or on pebbles (Table 4). According to Table 4, the number of feral oysters discovered on pebbles was only slightly less than the number discovered on oyster shells; however, these data fail to acknowledge that pebbles are considerably more abundant than oyster shells on the shorelines.

It seems that seaweeds may facilitate the dispersal of feral oysters by enabling them to drift along with the currents. This was apparent at various locations where these live oysters with seaweeds on them, had washed up on the shoreline. This was, for instance, clear near Templehoe Pier in Kenmare River (see Paragraph 5.7.17). There, feral oysters with seaweeds, were found to be locally common (1-9 oysters/m²), just underneath the high water line.

Table 4. Establishment substrates of feral Pacific oysters (n=2248).

Primary substrate	Whole structure	N		
Pacific oyster shells	fixed	179 (10%)		
Other shells	fixed	1 (<1%)		
Bedrock	fixed	57 (3%)		
Boulders	fixed	1258 (71%)		
Artificial structure	fixed	285 (16%)		
Total	fixed	1780		

Primary substrate	Whole structure	N	With seaweeds	Without seaweeds
Pacific oyster shells	loose	145 (31%)	62 (43%)	83 (57%)
Other shells	loose	13 (3%)	5 (38%)	8 (62%)
Pebbles	loose	201 (43%)	62 (31%)	139 (69%)
Not attached	loose	109 (23%)	18 (17%)	91 (83%)
Total	loose	468	147 (31%)	321 (69%)

Where the impact of oyster farms and/or artificial structures such as piers is concerned, Table 5 outlines the presence and absence of feral oysters as observed during the 162 timed surveys that were conducted, while taking into account whether or not artificial structures were present, and whether oyster farms were located nearby (close), far away, or not at all in the bay. When surveying locations that either had or lacked artificial structures, the exact same percentage, 38%, of all the locations surveyed were found to have feral oysters present. This table therefore appears to indicate that the presence of artificial structures nearby, does not seem to be directly related to the presence of feral oysters.

Where the presence of an oyster farm is concerned, there is a clear correlation. Where no oyster farms were present in a bay (n=54), feral oysters were found 20% of the surveys. Where an oyster farm was present, feral oysters were found during 47% of the surveys, regardless of whether that farm was close (n=36) or far away (n=72).

Table. 5. Feral Pacific oyster presence in relation to the presence of artificial structures and oyster farms close to, far away or absent in a bay. N.B. The percentage of surveys where feral oysters were recorded, which is 38%, happens to be exactly the same regardless of whether or not artificial structures are present.

	Oyster farm	N	feral <i>M. gigas</i> present	feral <i>M. gigas</i> absent
Artificial structure present	close	11	6 (55%)	5 (45%)
	far	42	20 (48%)	22 (52%)
	absent	36	8 (22%)	28 (78%)
	Total	89	34 (38%)	55 (62%)
Artificial structure absent	close	25	11 (44%)	14 (56%)
	far	30	14 (47%)	16 (53%)
	absent	18	3 (17%)	15 (83%)
	Total	73	28 (38%)	45 (62%)
Regardless of presence of artificial structures	close	36	17 (47%)	19 (53%)
	far	72	34 (47%)	38 (53%)
	absent	54	11 (20%)	43 (80%)
	Total	162	62 (38%)	100 (62%)

Concluding, the presence of a farm in a bay, in the present study, appears to increase the chances that feral oysters are found from about 20% to 47%. Still, this means that in 53% of the surveys where oyster farms were present nearby or far away, no feral oysters were found.

Even though the data (Table 5) offers some perspective on how artificial structures and oyster farms might affect the occurrence of feral oysters, more comprehensive research is needed. It should be acknowledged that the survey locations were not randomly selected, and that artificial structures are present in nearly every bay. In addition, Table 5 does not distinguish between different kinds of artificial structures, and classifies oyster trestles in a separate “presence of oyster farm” category, while in fact they are artificial structures as well.

The effects of some artificial constructions on the settling of feral oysters may be very local, which could explain why they are not immediately obvious in the outcomes of the timed surveys. As is described for the distinct habitat surveys in Chapter 5, feral oysters were often seen to settle on artificial structures like piers in much higher abundances than in the environment around a pier. As timed surveys were done for the most part in the environments next to these piers, the role of the piers themselves as settlement hotspots does not become evident in the results of these surveys (Table 5).

While searching for feral Pacific oysters, native flat oysters (*Ostrea edulis*) were also recorded in the intertidal during 30 of the 171 surveys (Fig. 7). Since this species is known to favor subtidal habitats, Figure 7 does not fully represent its range in the Republic of Ireland. It does show that the native oyster is widely distributed, and can be found in various bays, particularly those located along the western and northern coasts of Ireland.

In the subsequent chapter, sections and paragraphs, a detailed account of all observations and results is presented, focusing on specific locations and counties, with a breakdown by county and within each county for each of the timed surveys and distinct habitat surveys, separately.

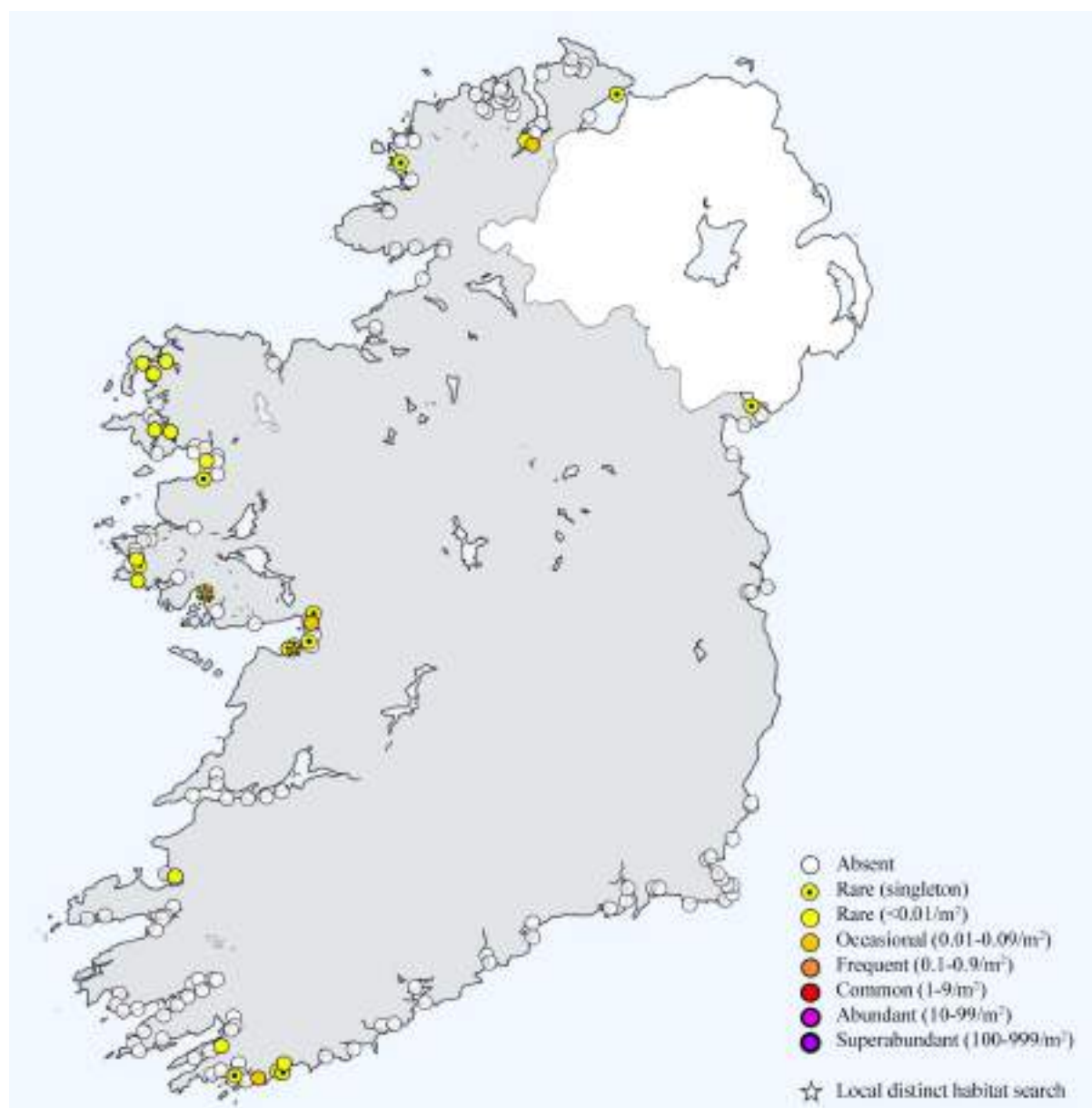


Fig. 7. Flat oyster (*Ostrea edulis*) occurrences, recorded in 2024-2025.

5. County specific results

In this chapter and the following sections and paragraphs, descriptions of all observations and results are presented with a breakdown by county and within each county by survey. An overview of all counties and sites that were searched, is

provided in Figure 8 (see also Table 1). Surveys were done in all counties with a marine coastline, with the exception of Co. Leitrim, Co. Meath and Co. Wicklow, as no sheltered bays, suitable for feral oyster settlement, appear to be present there.

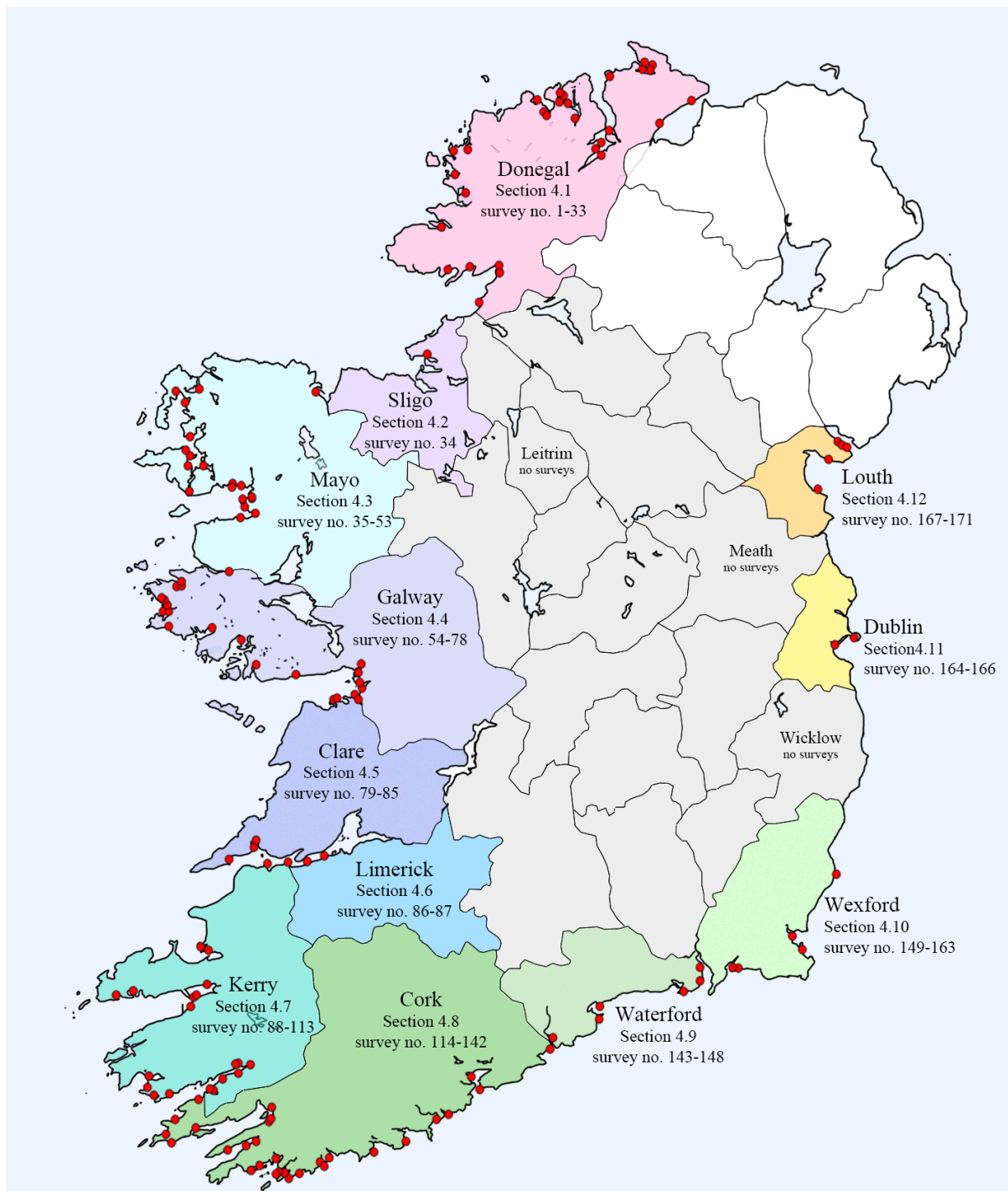


Fig. 8 Counties with a marine coastline. Red dots indicate the locations of the surveys (Table 1).

5.1 County Donegal

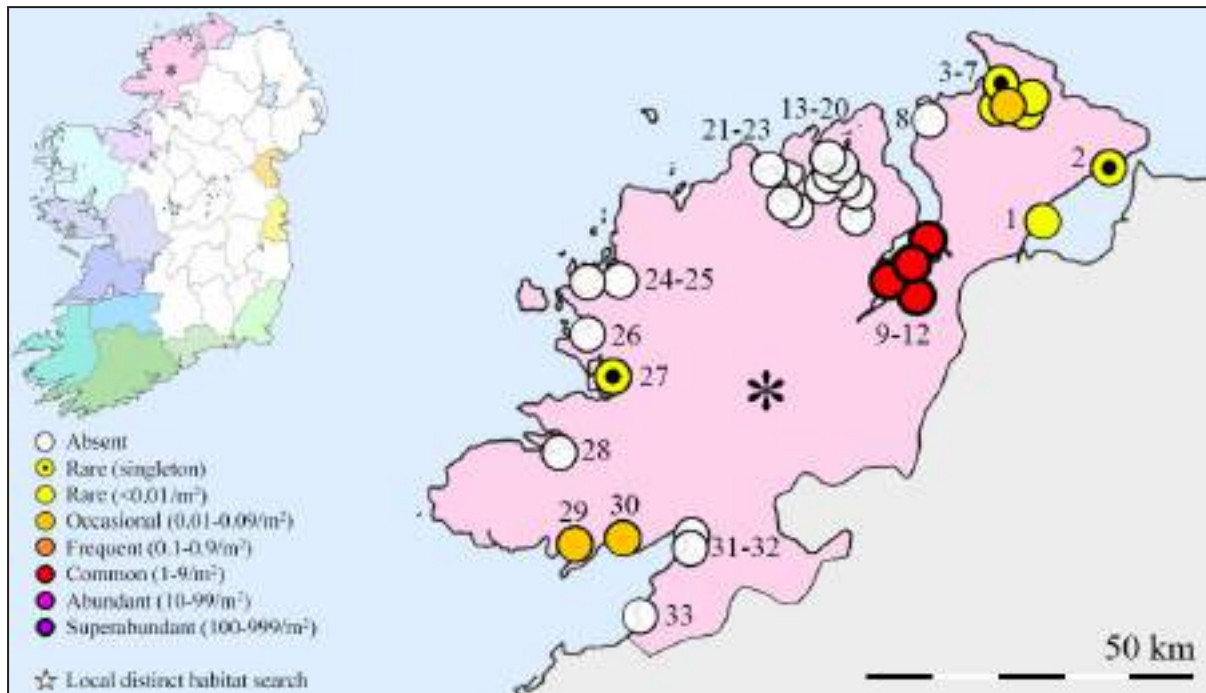


Fig. 9. Surveys in County Donegal

Between 2024 and 2025, 33 surveys were carried out in Co. Donegal, searching 22 km of the shoreline (Fig. 9). The presence of feral oysters was recorded during 14 of these surveys. The highest abundance, Common (1-9 oysters/m²) on the SACFOR scale (Table 2) was recorded in survey 9 (Inch Pier, Lough Swilly). This suggests that the abundance of feral oysters in the Swilly has stayed consistent and comparable since 2009, aligning with Kochmann *et al.* (2013)(Fig. 1). This was not the case at all locations, however. Kochmann *et al.* (2013) found that feral oysters were common (1-9 oysters/m²) in Lough Foyle in 2009 (Fig. 1), while they were found to be rare (<0.009 oysters/m²) at the same locations (surveys 1 and 2 in fig. 9) in 2025. Zwerksche *et al.* (2017) already recorded a population decline in Lough Foyle to frequent (0.1-0.9 oysters/m²) in 2012 and 2013.

A further notable result concerned the presence of feral oysters recorded at locations 27, 29 and 30 (Fig. 9) in the southwest of Donegal. It remains uncertain when feral Pacific oysters have established there because no surveys were carried out in nearby bays during the 2009, 2012, and

2013 surveys (Kochmann *et al.*, 2013; Zwerksche *et al.*, 2017). It is evident that the existing feral oysters have been reproducing as oysters in various size classes were found. For example, during survey 30 in Port Pier, Donegal Bay, the shell size of the 14 oysters found varied from 4 to 11 cm (Fig. 98). This proves that the oysters were of different ages, reflecting multiple spawning occurrences.

5.1.1 Three Trees, Lough Foyle

Co. Donegal

Survey no. 1	Field code: MIO106 Timed Survey
Location	Three Trees
Bay name	Lough Foyle
Bay residence time (days)	37.41 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	100-150 m
Hard substrate (30%)	Boulders
Dominant seaweeds (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (30%)	Sand
Presence oyster culture	Closeby (20 m)
Presence artificial structures	Yes (trestles)
Date and time survey	15-7-2025 16:56
Time searched	00:32
Minutes to low tide	0 min. (during low tide)
GPS start	N55 06.529 W7 12.646
GPS end	N55 06.676 W7 12.534
Distance searched	453 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 10. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand and boulders overgrown by seaweeds.



Fig. 11. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 12. Feral Pacific oyster, settled on a boulder.

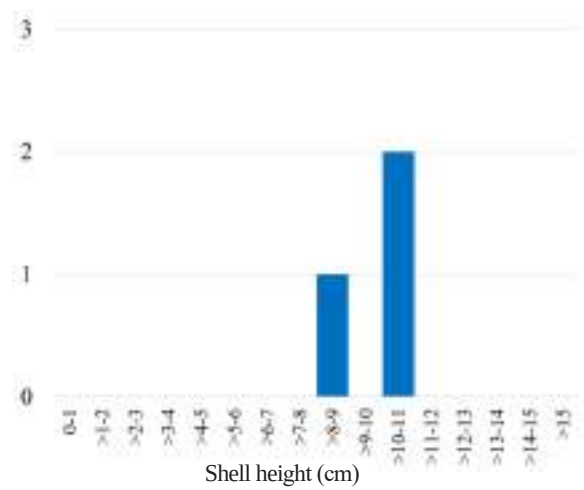


Fig. 13. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	16S sequence: AG_10231 (GenBank nr: PX582988); HRM typing: AG_10229 / AG_10230		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	83 mm - 110 mm		
Density in complete track (453 m)	0.007 /m ² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	3
Total number of oysters:					3
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.2 Moville, Lough Foyle

Co. Donegal

Survey no. 2	Field code: MIO105 Timed Survey
Location	Moville
Bay name	Lough Foyle
Bay residence time (days)	37.41 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (80%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand with gravel
Presence oyster culture	Far (7.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	15-7-2025 18:00
Time searched	00:32
Minutes to low tide	10 min. (after low tide)
GPS start	N55 11.234 W7 02.396
GPS end	N55 11.225 W7 02.617
Distance searched	393 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	One flat oyster was found fixed on a boulder. The DNA was sequenced (AG_10233).



Fig. 14. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and pebbles and those consisting predominantly of sand and gravel.

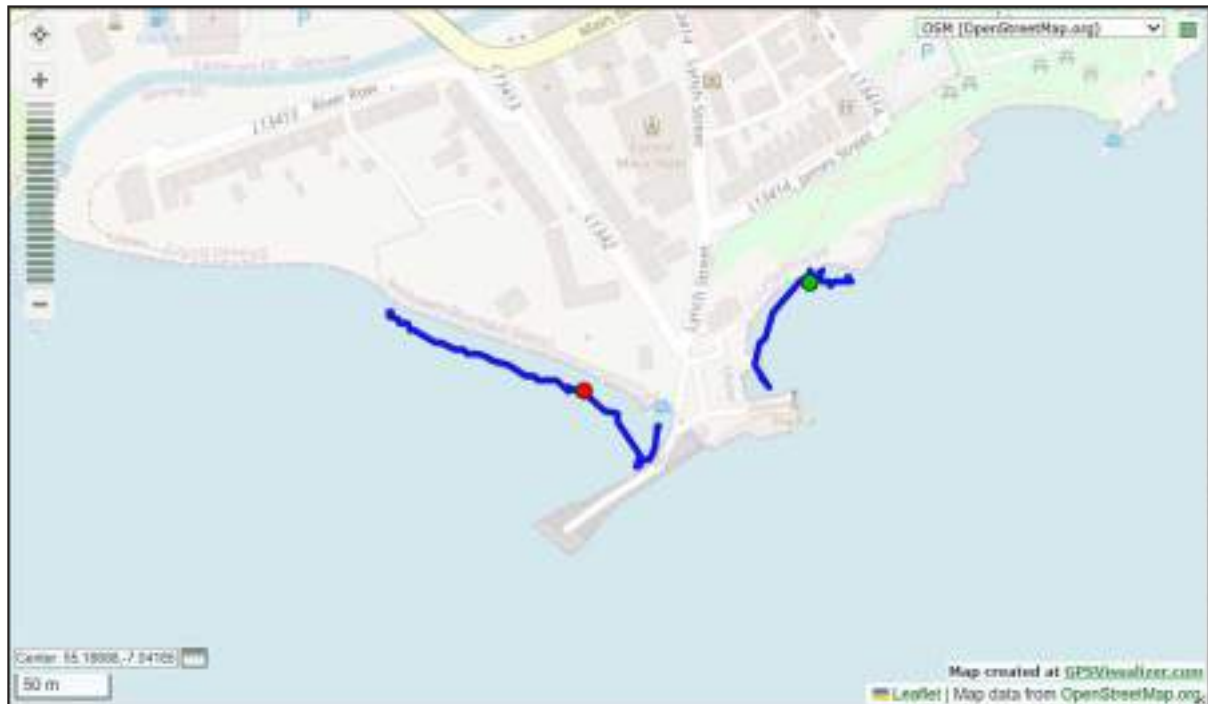


Fig. 15. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 16. Feral Pacific oyster, settled on a boulder.



Fig. 17. Flat oyster, settled on a boulder.

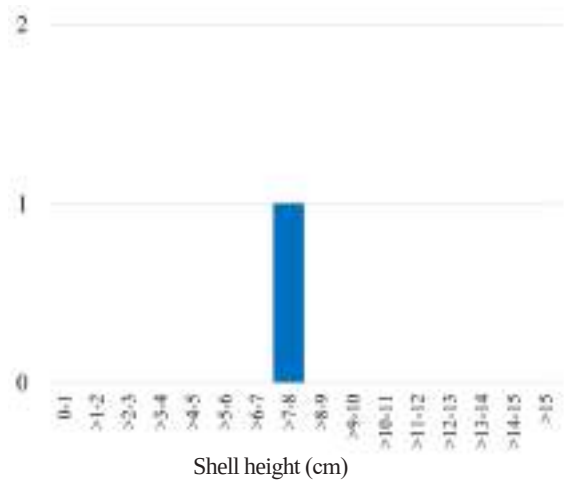


Fig. 18. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_10232 (GenBank nr: PX582989);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	71 mm		
Density in complete track (393 m)	0.003 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.1.3 Ballymageehan, Trawbreaga Bay

Co. Donegal

Survey no. 3	Field code: MIO020 Timed Survey
Location	Ballymageehan
Bay name	Trawbreaga Bay
Bay residence time (days)	10.50 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (50 m)
Presence artificial structures	Yes (trestles)
Date and time survey	19-7-2024 12:30
Time searched	00:30
Minutes to low tide	50 min. (after low tide)
GPS start	N55 17.340 W7 18.875
GPS end	N55 17.480 W7 18.261
Distance searched	769 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 19. The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown by seaweeds.



Fig. 20. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 21. Two feral Pacific oysters, settled on top of each other. Large seaweeds (*Fucus vesiculosus*) were attached to them.

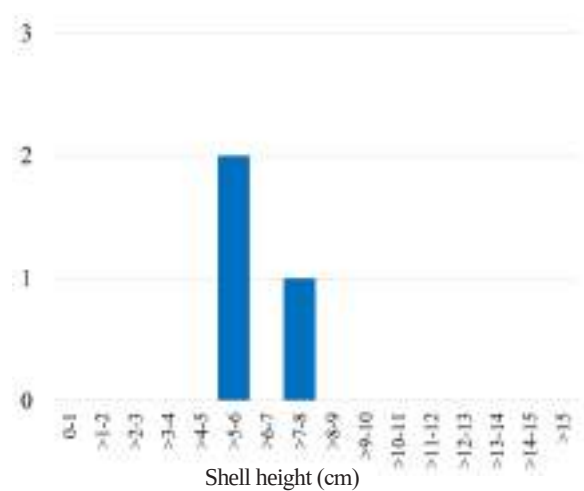


Fig. 22. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	Sequences available from bordering survey no. 4.		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	55 mm - 77 mm		
Density in complete track (769 m)	0.004 /m ² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Pacific oyster	fixed	sand	loose	yes (<i>F. vesiculosus</i>)	2
Total number of oysters:					3
Total number of “whole structure loose” oysters:					2
Total number of “loose” oysters with seaweed (>5cm)					2

5.1.4 Ballymageehan Beach, Trawbreaga Bay

Co. Donegal

Survey no. 4	Field code: MIO019 Timed Survey
Location	Ballymageehan Beach
Bay name	Trawbreaga Bay
Bay residence time (days)	10.50 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders
Macro algae (5%)	<i>Fucus vesiculosus</i>
Soft substrate (85%)	Sand with shells
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (trestles)
Date and time survey	19-7-2024 11:55
Time searched	00:32
Minutes to low tide	15 min. (after low tide)
GPS start	N55 17.389 W7 18.479
GPS end	N55 17.339 W7 18.875
Distance searched	589 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 23. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand and shells.



Fig. 24. Survey track (blue line). Eight feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 25. Two feral Pacific oysters, settled on a boulder.

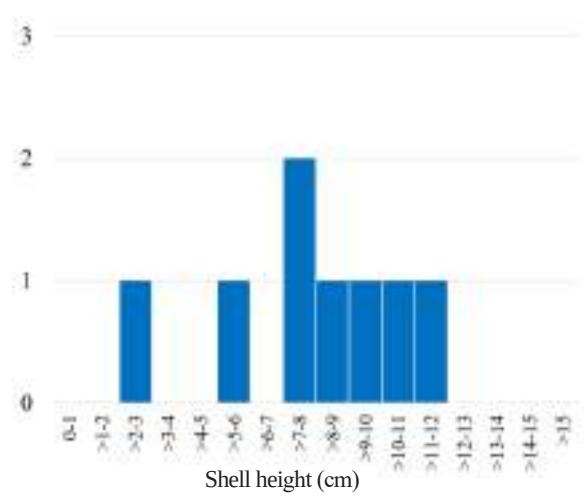


Fig. 26. Size-frequencies of Pacific oysters in 1 cm size intervals (n=8).

Molecular analyses	16S sequence: AG_9091 (GenBank nr: PX149987); HRM typing: AG_9089 / AG_9090		
<i>M. gigas</i> oysters measured	8		
Minimum / maximum size (mm)	29 mm - 112 mm		
Density in complete track (589 m)	0.014 /m ² (n=8)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	8
Total number of oysters:					8
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.5 Magherard Beach, Trawbreaga Bay

Co. Donegal

Survey no. 5	Field code: MIO018 Timed Survey
Location	Magherard Beach
Bay name	Trawbreaga Bay
Bay residence time (days)	10.50 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (70%)	Sand
Presence oyster culture	Far (700 m)
Presence artificial structures	No
Date and time survey	19-7-2024 12:05
Time searched	00:30
Minutes to low tide	25 min. (after low tide)
GPS start	N55 16.953 W7 16.482
GPS end	N55 17.099 W7 16.022
Distance searched	1112 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 27. The habitat was consistent throughout the survey, primarily characterized by sand with some boulders overgrown by seaweeds.



Fig. 28. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 29. Feral Pacific oyster, settled on a boulder.

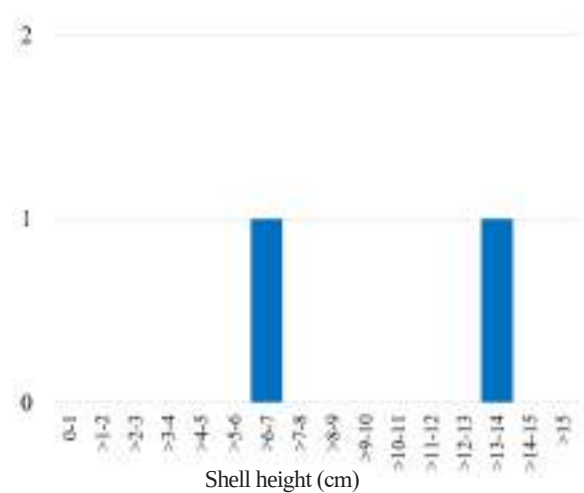


Fig. 30. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9087 (GenBank nr: PX149985); HRM typing: AG_9086		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	62 mm - 135 mm		
Density in complete track (1112 m)	0.002 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.6 Malin Beach, Trawbreaga Bay

Co. Donegal

Survey no. 6	Field code: MIO017 Timed Survey
Location	Malin Beach
Bay name	Trawbreaga Bay
Bay residence time (days)	10.50 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (60%)	Sand
Presence oyster culture	Far (1.8 km)
Presence artificial structures	Yes (stone bridge)
Date and time survey	19-7-2024 10:48
Time searched	00:42
Minutes to low tide	10 min. (before low tide)
GPS start	N55 17.560 W7 15.619
GPS end	N55 17.479 W7 15.963
Distance searched	1220 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 31. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand with some boulders overgrown by seaweeds.



Fig. 32. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 33. Feral Pacific oyster, settled on a boulder.

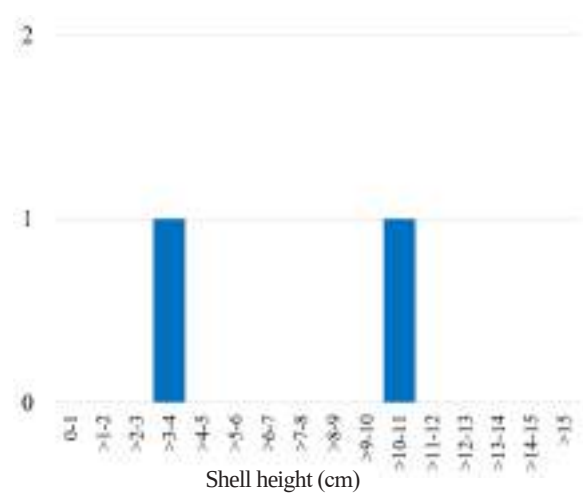


Fig. 34. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9084 (GenBank nr: PX149983); AG_9085 (GenBank nr: PX149984)		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	36 mm - 108 mm		
Density in complete track (1220 m)	0.002 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.7 Presbyterian Malin Church, Trawbreaga Bay

Co. Donegal

Survey no. 7	Field code: MIO016 Timed Survey
Location	Presbyterian Malin Church
Bay name	Trawbreaga Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (40%)	Pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (400 m)
Presence artificial structures	Yes (pier)
Date and time survey	19-7-2024 09:58
Time searched	00:34
Minutes to low tide	68 min. (before low tide)
GPS start	N55 18.502 W7 18.638
GPS end	N55 18.562 W7 18.902
Distance searched	395 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	Marks of oysters were found on boulders, as an indication of more settlement in the past.



Fig. 35. [A] General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles. [B] On a boulder the marks of oysters were found.



Fig. 36. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 37. Feral Pacific oyster, settled on a boulder.

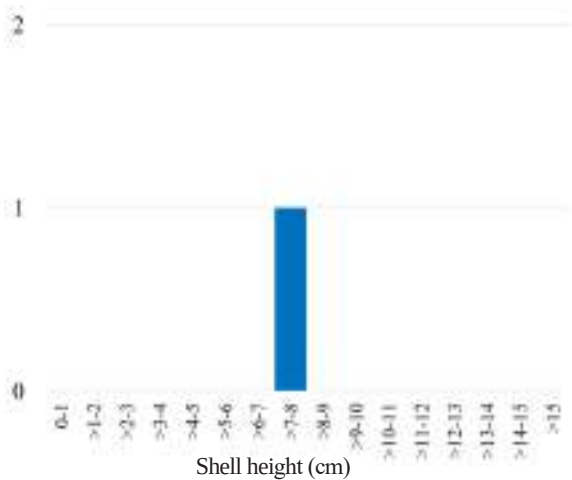


Fig. 38. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_9083 (GenBank nr: PX149982);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	75 mm		
Density in complete track (395 m)	0.003 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.1.8 Leenan Beach, Dunaff Bay

Co. Donegal

Survey no. 8	Field code: MIO021 Timed Survey
Location	Leenan Beach
Bay name	Dunaff Bay
Bay residence time (days)	33.82 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (100%)	Bedrock and pebbles
Macro algae (0%)	n.a.
Soft substrate (0%)	n.a.
Presence oyster culture	Far
Presence artificial structures	No
Date and time survey	19-7-2024 12:40
Time searched	00:30
Minutes to low tide	60 min. (after low tide)
GPS start	N55 15.664 W7 30.821
GPS end	N55 15.525 W7 30.874
Distance searched	345 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 39. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 40. Survey track (blue line). No feral Pacific oysters were found.

5.1.9 Inch Pier, Lough Swilly

Co. Donegal

Survey no. 9	Field code: MIO014/15 Timed Survey and Transects
Location	Inch Pier
Bay name	Lough Swilly
Bay residence time (days)	33.82 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (60%)	Bedrock and boulders
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (30%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	18-7-2024 11:36
Time searched	00:30
Minutes to low tide	36 min. (after low tide)
GPS start	N55 05.018 W7 30.801
GPS end	N55 05.064 W7 30.247
Distance searched	588 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 41. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.

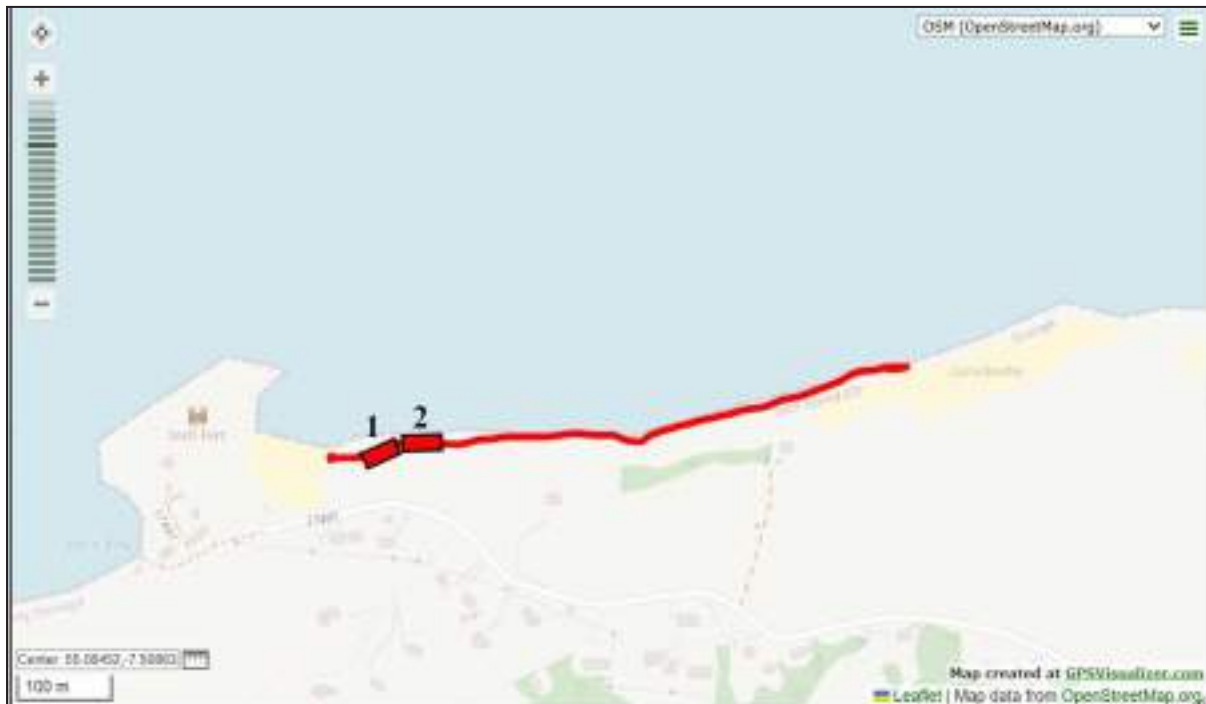


Fig. 42. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects.



Fig. 43. Feral Pacific oysters, settled on a boulder.

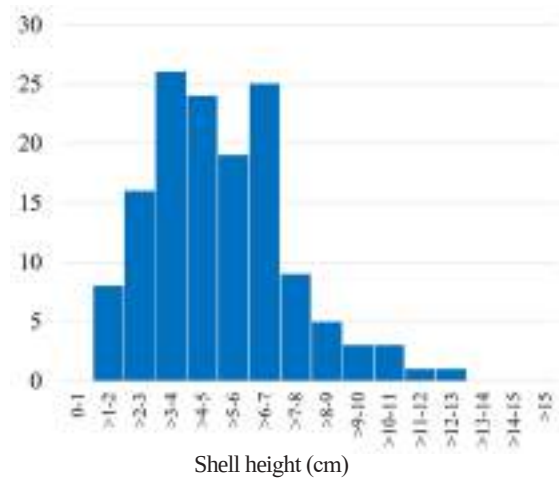


Fig. 44. Size-frequencies of Pacific oysters in 1 cm size intervals (n=140).

Molecular analyses	16S sequence: AG_9076 (GenBank nr: PX149979); AG_9080 (GenBank nr: PX149980); AG_9081 (GenBank nr: PX149981); HRM typing: AG_9073-9075 / AG_9077-9079 / AG_9082		
<i>M. gigas</i> oysters measured	140		
Minimum / maximum size (mm)	11 mm - 125 mm		
Density in complete track (588 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	36.60 /m ² (n=1098)	Abundant	In 30 m transect
Highest density in 5 continuous meters	61.20 /m ² (n=306)	Abundant	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	20
Boulder	fixed	n.a.	fixed	n.a.	95
Pacific oyster	fixed	boulder	fixed	n.a.	25
Total number of oysters:					140
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.10 Quay Shore, Lough Swilly

Co. Donegal

Survey no. 10	Field code: MIO013 Timed Survey and Transects
Location	Quay Shore
Bay name	Lough Swilly
Bay residence time (days)	33.82 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (50%)	Boulders and pebbles
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (30%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	18-7-2024 10:15
Time searched	00:34
Minutes to low tide	11 min. (before low tide)
GPS start	N55 00.504 W7 33.956
GPS end	N55 00.122 W7 34.543
Distance searched	429 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Five flat oysters were found



Fig. 45. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 46. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects. Five flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 47. Feral Pacific oysters, settled on a stone pier.

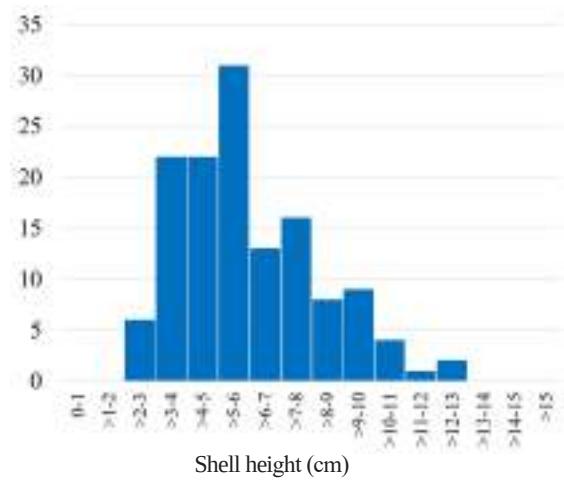


Fig. 48. Size-frequencies of Pacific oysters in 1 cm size intervals (n=134).

Molecular analyses	16S sequence: AG_9065 (GenBank nr: PX149977); AG_9068 (GenBank nr: PX149978); HRM typing: AG_9063-9064 / AG_9066-9067 / AG_9069-9072		
<i>M. gigas</i> oysters measured	134		
Minimum / maximum size (mm)	22 mm - 124 mm		
Density in complete track (429 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	3.067 /m ² (n=92)	Common	In 30 m transect
Highest density in 5 continuous meters	8.200 /m ² (n=41)	Common	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	80
Pacific oyster	fixed	boulder	fixed	n.a.	49
Pebble	fixed	pebbles	loose	no	2
Sand	loose	n.a.	loose	no	2
				yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					134
Total number of “whole structure loose” oysters:					5
Total number of “loose” oysters with seaweed (>5cm)					1

5.1.11 Gortleck Beach, Lough Swilly

Co. Donegal

Survey no. 11	Field code: MIO011 Timed Survey and Transects
Location	Gortleck Beach
Bay name	Lough Swilly
Bay residence time (days)	33.82 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (40%)	Boulders and pebbles
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (40%)	Sand with shells
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	17-7-2024 09:07
Time searched	00:33
Minutes to low tide	20 min. (before low tide)
GPS start	N55 01.292 W7 34.975
GPS end	N55 00.910 W7 35.539
Distance searched	1090 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Two flat oysters were found

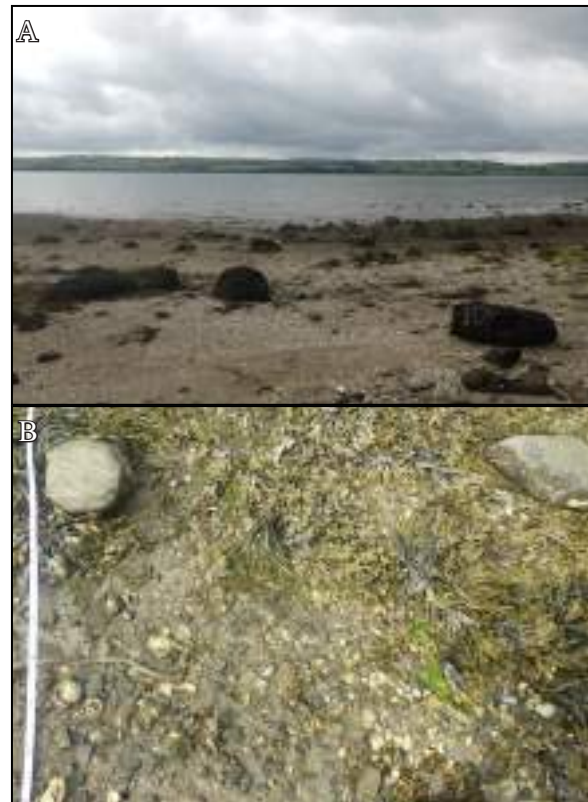


Fig. 49. The habitat was consistent throughout the survey, primarily characterized by sand with pebbles and boulders.



Fig. 50. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects. Two flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 51. Feral Pacific oyster, settled on a boulder.

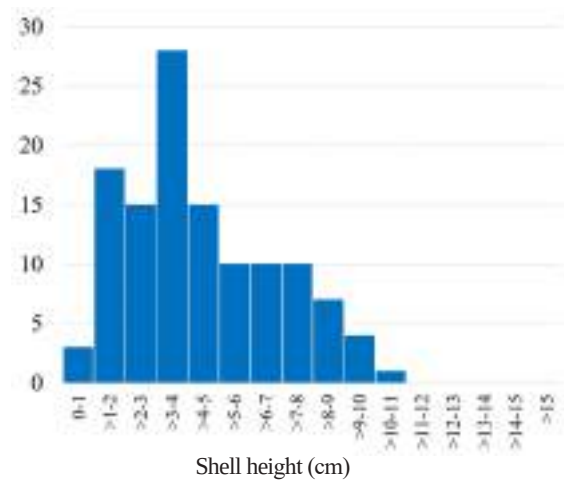


Fig. 52. Size-frequencies of Pacific oysters in 1 cm size intervals (n=121).

Molecular analyses	16S sequence: AG_9044 (GenBank nr: PX149974); AG_9051 (GenBank nr: PX149975); HRM typing: AG_9043/ AG_9045-9050 / AG_9052		
<i>M. gigas</i> oysters measured	121		
Minimum / maximum size (mm)	9 mm - 103 mm		
Density in complete track (1090 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	16.53 /m ² (n=496)	Abundant	In 30 m transect
Highest density in 5 continuous meters	25.40 /m ² (n=127)	Abundant	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	80
Pacific oyster	fixed	boulder	fixed	n.a.	8
Pebble	fixed	pebbles	loose	no	4
Pacific oyster	fixed	pebbles	loose	no	9
Pebbles	loose	n.a.	loose	no	15
				yes (<i>F. vesiculosus</i>)	2
Sand	loose	n.a.	loose	no	2
				yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					121
Total number of “whole structure loose” oysters:					27
Total number of “loose” oysters with seaweed (>5cm)					3

5.1.12 Ballgreen Beach, Lough Swilly

Co. Donegal

Survey no. 12	Field code: MIO012 Timed Survey and Transects
Location	Ballgreen Beach
Bay name	Lough Swilly
Bay residence time (days)	33.82 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	100-150 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (40%)	Sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	17-7-2024 10:33
Time searched	00:32
Minutes to low tide	33 min. (after low tide)
GPS start	N55 02.604 W7 33.585
GPS end	N55 02.938 W7 33.855
Distance searched	771 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 53. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand with pebbles and boulders.



Fig. 54. Survey track (red line). Feral Pacific oysters were estimated to be common. These Pacific oysters were counted within the two marked 30-meter transects.



Fig. 55. Two feral Pacific oysters, settled on top of each other.

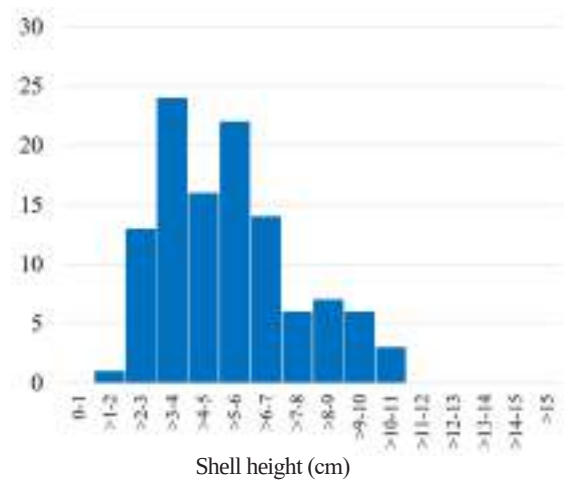


Fig. 56. Size-frequencies of Pacific oysters in 1 cm size intervals (n=112).

Molecular analyses	16S sequence: AG_9062 (GenBank nr: PX149976); HRM typing: AG_9053-9061		
<i>M. gigas</i> oysters measured	112		
Minimum / maximum size (mm)	20 mm - 107 mm		
Density in complete track (771 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	4.43 /m ² (n=133)	Common	In 30 m transect
Highest density in 5 continuous meters	9.00 /m ² (n=45)	Common	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	17
Pacific oyster	fixed	boulder	fixed	n.a.	9
Pebble	fixed	pebbles	loose	no	2
		sand		yes (<i>F. vesiculosus</i>)	1
Pacific oyster	fixed	pebbles	loose	yes (<i>F. vesiculosus</i>)	3
		sand		no	35
				yes (<i>F. vesiculosus</i>)	26
Sand	loose	n.a.	loose	no	18
				yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					112
Total number of “whole structure loose” oysters:					86
Total number of “loose” oysters with seaweed (>5cm)					31

5.1.13 Cranford Pier, Mulroy Bay

Co. Donegal

Survey no. 13	Field code: MIO004 Timed Survey
Location	Cranford Pier
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (80%)	Pebbles
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Far (5.5 km)
Presence artificial structures	Yes (Pier)
Date and time survey	16-7-2024 07:24
Time searched	00:33
Minutes to low tide	53 min. (before low tide)
GPS start	N55 08.959 W7 41.733
GPS end	N55 08.752 W7 41.670
Distance searched	469 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

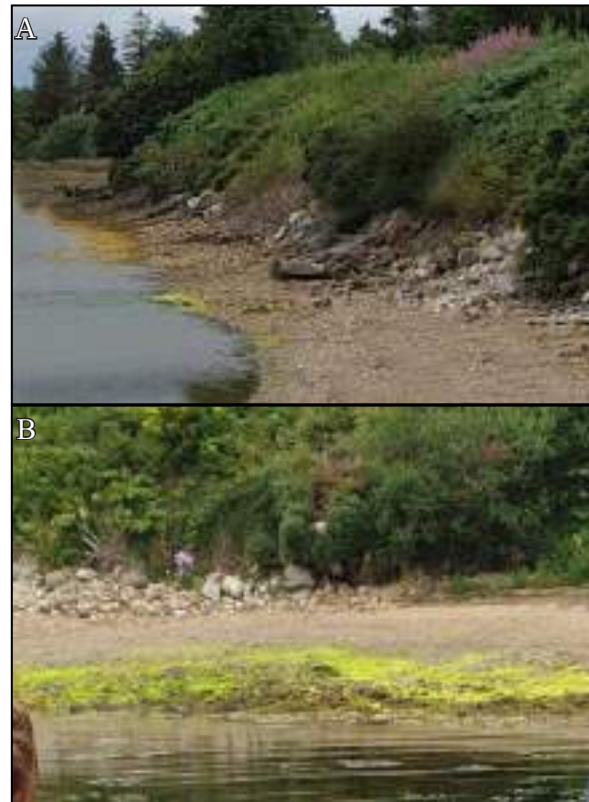


Fig. 57. General habitat: Photos of the location taken in 2019, as good overview photos from 2024 were unavailable. The habitat was consistent throughout the survey, primarily characterized by pebbles.

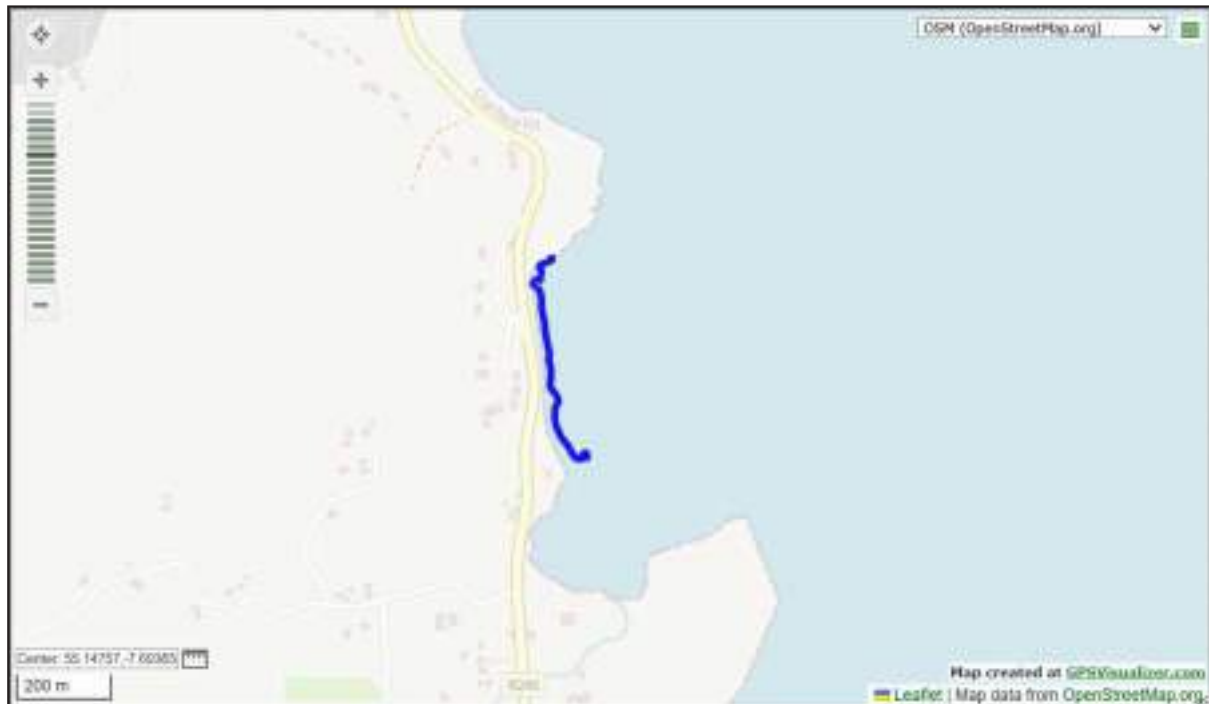


Fig. 58. Survey track (blue line). No feral Pacific oysters were found.

5.1.14 Woodquarter Pier, Mulroy Bay

Co. Donegal

Survey no. 14	Field code: MIO107 Timed Survey
Location	Woodquarter Pier
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (30%)	Bedrock and pebbles
Macro algae (70%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	0
Presence oyster culture	Far (8.5 km)
Presence artificial structures	Yes (Pier)
Date and time survey	16-7-2025 15:52
Time searched	00:30
Minutes to low tide	38 min. (before low tide)
GPS start	N55 07.350 W7 42.129
GPS end	N55 07.184 W7 42.205
Distance searched	434 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

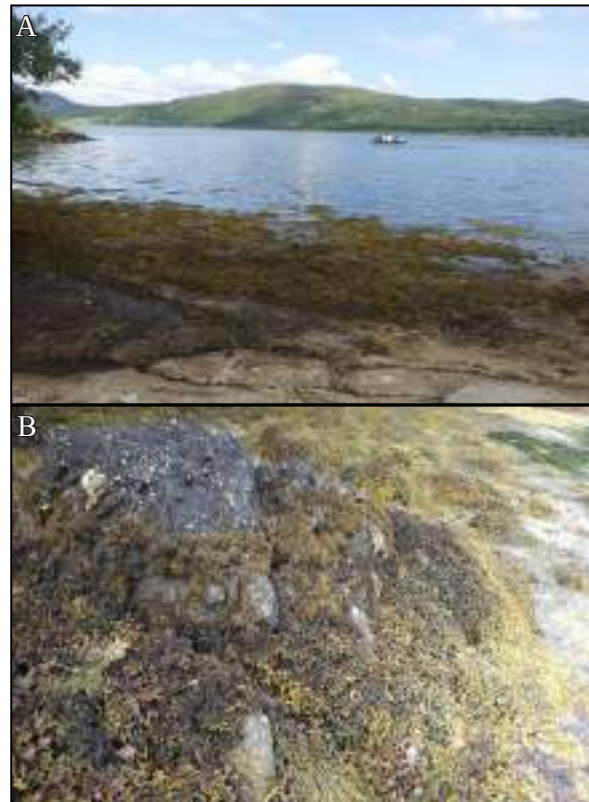


Fig. 59. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.



Fig. 60. Survey track (blue line). No feral Pacific oysters were found.

5.1.15 Marks Point, Carrick Bay Mulroy Bay

Co. Donegal

Survey no. 15	Field code: MIO003 Timed Survey
Location	Marks Point, Carrick Bay
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (10%)	Boulders, pebbles and gravel
Macro algae (80%)	<i>Ascophyllum nodosum</i>
Soft substrate (10%)	Shells
Presence oyster culture	Closeby (10 m)
Presence artificial structures	Yes (Trestles)
Date and time survey	16-7-2024 07:22
Time searched	00:30
Minutes to low tide	59 min. (before low tide)
GPS start	N55 10.487 W7 44.690
GPS end	N55 10.512 W7 44.727
Distance searched	662 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 61. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders, pebbles and gravel overgrown by seaweeds.



Fig. 62. Survey track (blue line). No feral Pacific oysters were found.

5.1.16 Glinsk South, Mulroy Bay

Co. Donegal

Survey no. 16	Field code: MIO001 Timed Survey
Location	Glinsk South
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles and boulders
Macro algae (80%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2100 m)
Presence artificial structures	Yes (floating dock)
Date and time survey	15-7-2024 07:47
Time searched	00:40
Minutes to low tide	7 min. (after low tide)
GPS start	N55 12.249 W7 46.809
GPS end	N55 12.227 W7 47.287
Distance searched	861 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 63. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and some boulder overgrown by seaweeds.



Fig. 64. Survey track (blue line). No feral Pacific oysters were found.

5.1.17 Millstone Bay, Mulroy Bay

Co. Donegal

Survey no. 17	Field code: MIO008 Timed Survey
Location	Millstone Bay
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (70%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (1500 m)
Presence artificial structures	Yes (bridge)
Date and time survey	16-7-2024 20:13
Time searched	00:32
Minutes to low tide	71 min. (before low tide)
GPS start	N55 11.426 W7 45.746
GPS end	N55 11.586 W7 45.500
Distance searched	381 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 65. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown by seaweeds.



Fig. 66. Survey track (blue line). No feral Pacific oysters were found.

5.1.18 Harry Blaney Bridge, Mulroy Bay

Co. Donegal

Survey no. 18	Field code: MIO009 Timed Survey
Location	Harry Blaney Bridge
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (40%)	Boulders and pebbles
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (1200 m)
Presence artificial structures	Yes (bridge)
Date and time survey	16-7-2024 20:10
Time searched	01:10
Minutes to low tide	55 min. (before low tide)
GPS start	N55 11.426 W7 45.752
GPS end	N55 11.426 W7 46.078
Distance searched	602 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 67. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders.



Fig. 68. Survey track (blue line). No feral Pacific oysters were found.

5.1.19 Tirloughan Bay, Mulroy Bay

Co. Donegal

Survey no. 19	Field code: MIO010 Timed Survey
Location	Tirloughan Bay
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (20%)	Pebbles and gravel
Macro algae (80%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (1200 m)
Presence artificial structures	No
Date and time survey	16-7-2024 20:10
Time searched	00:30
Minutes to low tide	60 min. (before low tide)
GPS start	N55 11.052 W7 45.960
GPS end	N55 11.003 W7 46.195
Distance searched	597 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	One loose oyster shell was found



Fig. 69. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and gravel overgrown by seaweeds.



Fig. 70. Survey track (blue line). No feral Pacific oysters were found.

5.1.20 Drongawn Lough Figart Hill, Mulroy Bay

Co. Donegal

Survey no. 20	Field code: MIO002 Timed Survey
Location	Drongawn Lough Figart Hill
Bay name	Mulroy Bay
Bay residence time (days)	36.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles
Macro algae (80%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (400 m)
Presence artificial structures	Yes (ramp)
Date and time survey	16-7-2024 07:01
Time searched	00:34
Minutes to low tide	75 min. (before low tide)
GPS start	N55 10.819 W7 47.150
GPS end	N55 11.075 W7 47.663
Distance searched	919 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

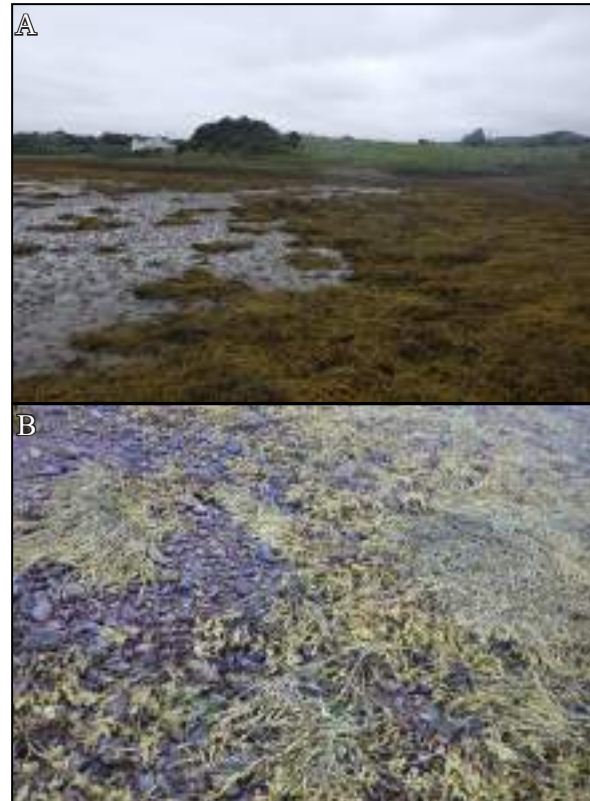


Fig. 71. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown by seaweeds.

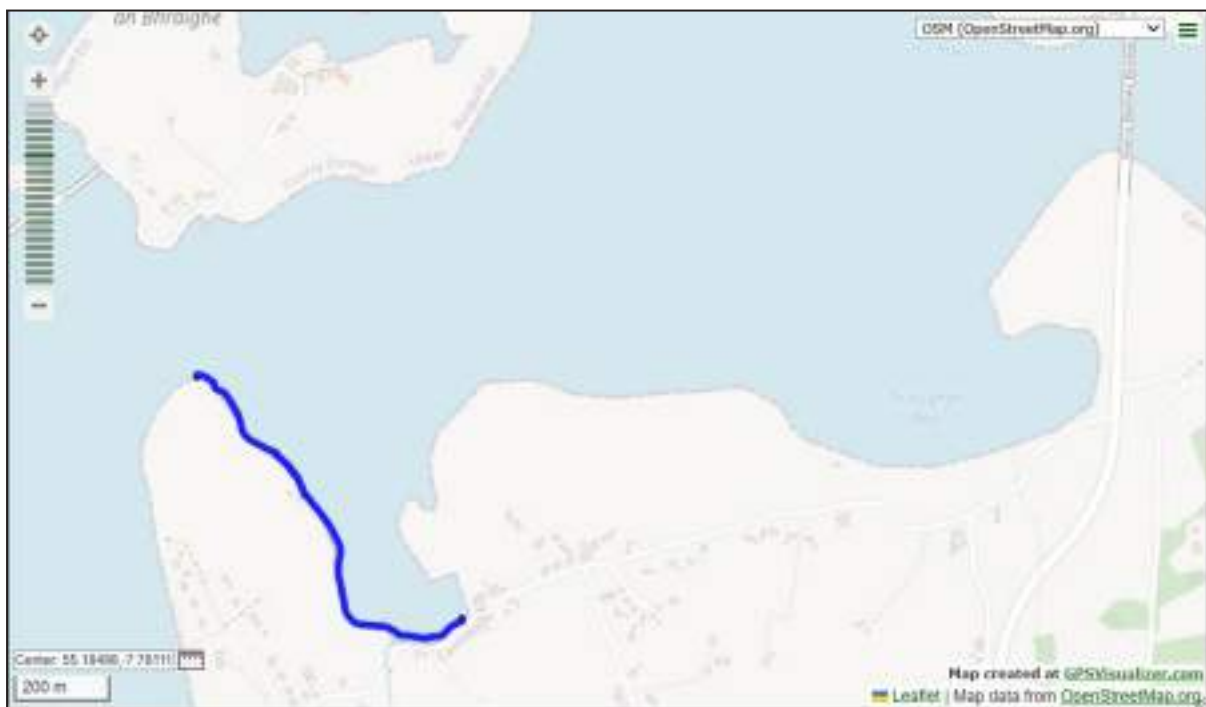


Fig. 72. Survey track (blue line). No feral Pacific oysters were found.

5.1.21 Doe Castle, Sheephaven Bay

Co. Donegal

Survey no. 21	Field code: MIO005 Timed Survey
Location	Doe Castle
Bay name	Sheephaven Bay
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	> 150 m
Hard substrate (50%)	Bedrock
Macro algae (50%)	<i>Ascophyllum nodosum</i>
Soft substrate (20%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	16-7-2024 08:44
Time searched	00:33
Minutes to low tide	0 min. (during low tide)
GPS start	N55 08.118 W7 51.806
GPS end	N55 08.294 W7 51.825
Distance searched	749 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 73. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.



Fig. 74. Survey track (blue line). No feral Pacific oysters were found.

5.1.22 Rinnaraspy Point, Sheephaven Bay

Co. Donegal

Survey no. 22	Field code: MIO006 Timed Survey
Location	Rinnaraspy Point
Bay name	Sheephaven Bay
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	> 150 m
Hard substrate (30%)	Bedrock
Macro algae (10%)	<i>Ascophyllum nodosum</i>
Soft substrate (60%)	Sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	16-7-2024 08:43
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N55 08.439 W7 52.630
GPS end	N55 08.274 W7 52.949
Distance searched	641 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: One empty Pacific oyster shell was found.	



Fig. 75. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and those consisting predominantly of sand.



Fig. 76. Survey track (blue line). No feral Pacific oysters were found. Yellow circle indicates the location where an old Pacific oyster shell was found.

5.1.23 Portnablagh Pier, Sheephaven Bay

Co. Donegal

Survey no. 23	Field code: MIO007 Timed Survey
Location	Portnablagh Pier
Bay name	Sheephaven Bay
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50
Hard substrate (90%)	Bedrock and pier
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	No
Presence artificial structures	Yes (pier)
Date and time survey	16-7-2024 08:55
Time searched	00:35
Minutes to low tide	5 min. (after low tide)
GPS start	N55 10.876 W7 55.694
GPS end	N55 10.864 W7 55.762
Distance searched	700 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 77. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 78. Survey track (blue line). No feral Pacific oysters were found.

5.1.24 Anagaire car park, Anagaire Estuary

Co. Donegal

Survey no. 24	Field code: MIO110 Timed Survey
Location	Anagaire car park
Bay name	Anagaire Estuary
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (80%)	Sand with shells and pebbles
Presence oyster culture	Far (1500 m)
Presence artificial structures	Yes (pier)
Date and time survey	17-7-2025 16:50
Time searched	00:30
Minutes to low tide	10 min. (before low tide)
GPS start	N55 01.341 W8 19.101
GPS end	N55 01.320 W8 19.392
Distance searched	654 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	Two empty pacific oyster shells were found



Fig. 79. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and those consisting predominantly of sand with shells and pebbles.



Fig. 80. Survey track (blue line). No feral Pacific oysters were found.

5.1.25 St. Mary's Church, Cruit Bay

Co. Donegal

Survey no. 25	Field code: MIO111 Timed Survey
Location	St. Mary's Church
Bay name	Cruit Bay
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (40%)	Bedrock and boulders
Macro algae (30%)	<i>Fucus</i> spp.
Soft substrate (30%)	sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	17-7-2025 17:54
Time searched	00:30
Minutes to low tide	24 min. (after low tide)
GPS start	N55 01.158 W8 24.028
GPS end	N55 01.277 W8 24.380
Distance searched	691 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 81. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock overgrown by seaweeds and those consisting predominantly of sand.



Fig. 82. Survey track (blue line). No feral Pacific oysters were found.

5.1.26 South of Inisheane, Dungloe Bay

Co. Donegal

Survey no. 26	Field code: MIO109 Timed Survey
Location	South of Inisheane
Bay name	Dungloe Bay
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	> 150 m
Hard substrate (50%)	Boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (30%)	sand with shells
Presence oyster culture	Closeby (50 m)
Presence artificial structures	Yes (trestles)
Date and time survey	17-7-2025 16:31
Time searched	00:43
Minutes to low tide	18 min. (before low tide)
GPS start	N54 56.368 W8 24.073
GPS end	N54 56.501 W8 23.691
Distance searched	956 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster (<i>Ostrea edulis</i>) was found loose on the sand. The DNA was sequenced (AG_10237, GenBank nr: PX462777).	

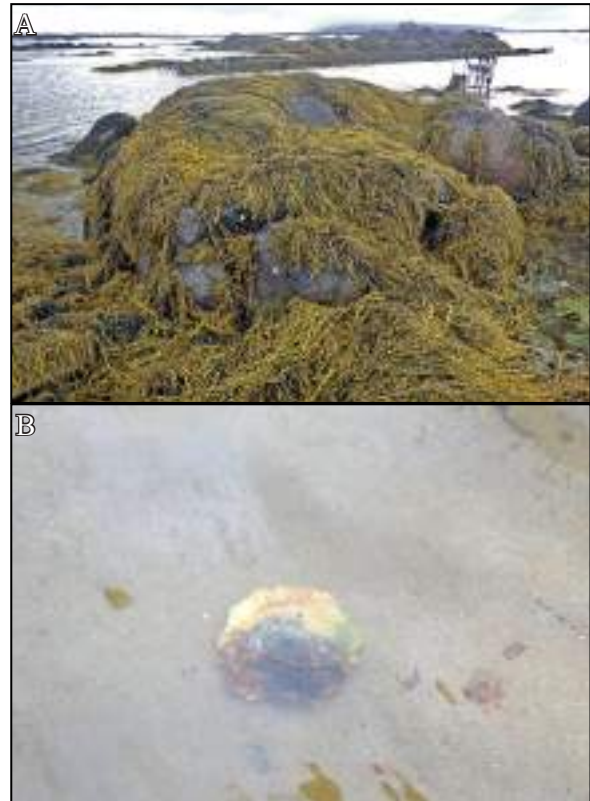


Fig. 83. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders covered by seaweeds and those consisting predominantly of sand.



Fig. 84. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

5.1.27 North of Derrylough, Trawenagh Bay

Co. Donegal

Survey no. 27	Field code: MIO108 Timed Survey
Location	North of Derrylough
Bay name	Trawenagh Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (60%)	Bedrock and boulders
Macro algae (10%)	<i>Ascophyllum nodosum</i>
Soft substrate (30%)	Sand with shells and pebbles
Presence oyster culture	Closeby (50 m)
Presence artificial structures	Yes (trestles)
Date and time survey	16-7-2025 14:50
Time searched	00:40
Minutes to low tide	70 min. (before low tide)
GPS start	N54 52.674 W8 19.835
GPS end	N54 52.917 W8 20.693
Distance searched	1196 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Marks of oysters were found on boulders, as an indication of more settlement in the past.	



Fig. 85. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders covered by seaweeds and those consisting predominantly of sand and shells.



Fig. 86. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 87. Feral Pacific oyster, settled on a boulder.

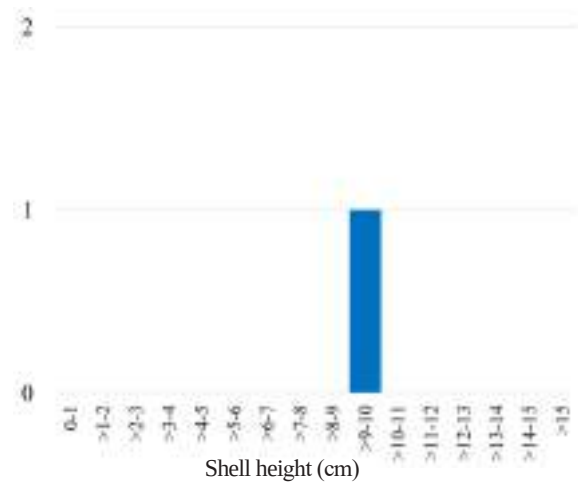


Fig. 88. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_10234 (GenBank nr: PX582990).		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	92 mm		
Density in complete track (1196 m)	0.001 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.1.28 Garrahill, Ardara Bay

Co. Donegal

Survey no. 28	Field code: MIO104 Timed Survey
Location	Garrahill
Bay name	Ardara Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (70%)	Bedrock and boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	sand
Presence oyster culture	Closeby (100 m)
Presence artificial structures	Yes (trestles)
Date and time survey	14-7-2025 16:32
Time searched	00:30
Minutes to low tide	72 min. (after low tide)
GPS start	N54 45.906 W8 28.432
GPS end	N54 45.726 W8 28.122
Distance searched	957 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 89. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock and boulders.



Fig. 90. Survey track (blue line). No feral Pacific oysters were found.

5.1.29 Binnoe Slipway, Donegal Bay

Co. Donegal

Survey no. 29	Field code: MIO112 Timed Survey
Location	Binnoe Slipway
Bay name	Donegal Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (80%)	Bedrock, boulders and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (26 km)
Presence artificial structures	Yes (ramp)
Date and time survey	18-7-2025 17:42
Time searched	00:32
Minutes to low tide	0 min. (during low tide)
GPS start	N54 37.531 W8 25.850
GPS end	N54 37.467 W8 26.070
Distance searched	354 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 91. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly of boulders overgrown by seaweeds.



Fig. 92. Survey track (blue line). Four feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 93. Feral Pacific oyster, settled on a boulder.

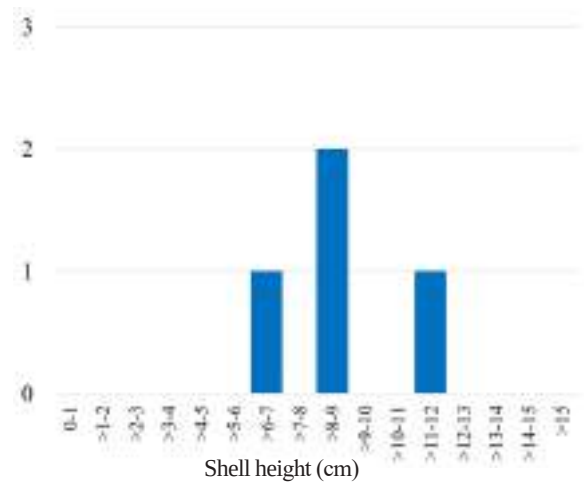


Fig. 94. Size-frequencies of Pacific oysters in 1 cm size intervals (n=4).

Molecular analyses	16S sequence: AG_10240 (GenBank nr: PX58991); HRM typing: AG_10238 / AG_10239 / AG_10241		
<i>M. gigas</i> oysters measured	4		
Minimum / maximum size (mm)	71 mm - 112 mm		
Density in complete track (354 m)	0.011 /m ² (n=4)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.033/m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	4
Total number of oysters:					4
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.30 Port Pier, Donegal Bay

Co. Donegal

Survey no. 30	Field code: MIO113 Timed Survey
Location	Port Pier
Bay name	Donegal Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (90%)	Boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (12.3 km)
Presence artificial structures	Yes (pier)
Date and time survey	18-7-2025 18:42
Time searched	00:35
Minutes to low tide	32 min. (after low tide)
GPS start	N54 38.173 W8 18.661
GPS end	N54 38.100 W8 18.851
Distance searched	497 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 95. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 96. Survey track (blue line). Fourteen feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 97. Feral Pacific oyster, settled on a boulder.

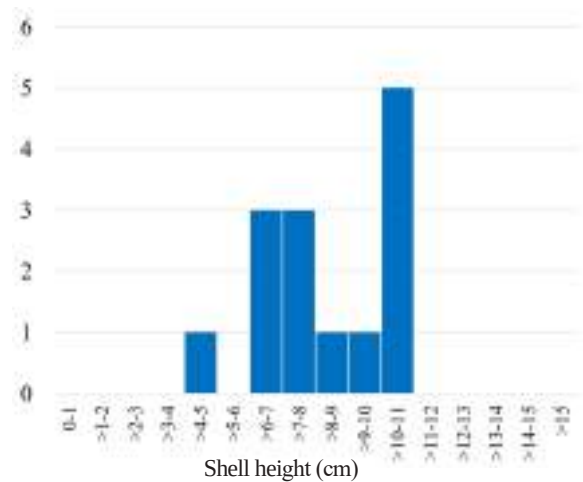


Fig. 98. Size-frequencies of Pacific oysters in 1 cm size intervals (n=14).

Molecular analyses	16S sequence: AG_10242 (GenBank nr: PX58992); HRM typing: AG_10243 / AG_10244 / AG_10245		
<i>M. gigas</i> oysters measured	14		
Minimum / maximum size (mm)	46 mm - 110 mm		
Density in complete track (497 m)	0.026 /m ² (n=14)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.267 /m ² (n=8)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	14
Total number of oysters:					14
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.1.31 Muckros, Donegal Bay

Co. Donegal

Survey no. 31	Field code: MIO023 Timed Survey
Location	Muckros
Bay name	Donegal Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (10%)	Boulders
Macro algae (50%)	<i>Ascophyllum nodosum</i>
Soft substrate (40%)	Mud
Presence oyster culture	Closeby (250 m)
Presence artificial structures	No
Date and time survey	20-7-2024 10:50
Time searched	00:31
Minutes to low tide	5 min. (after low tide)
GPS start	N54 37.941 W8 08.168
GPS end	N54 38.080 W8 07.892
Distance searched	571 m
Feral <i>M. gigas</i> settlement	Indication of past settlement
<i>Ostrea edulis</i> presence	No
Remarks: One dead oyster with both valves still attached, was found fixed on a boulder.	



Fig. 99. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud and seaweeds. One dead oyster was found fixed on a boulder.



Fig. 100. Survey track (blue line). No feral Pacific oysters were found. Yellow circle indicates the location where a dead oyster with both valves still attached, was found. Its form indicated that it concerned a Pacific oyster.

5.1.32 East of Rooney's Island, Donegal Bay

Co. Donegal

Survey no. 32	Field code: MIO024 Timed survey
Location	East of Rooney's Island
Bay name	Donegal Bay
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i>
Soft substrate (50%)	Mud
Presence oyster culture	Closeby (270 m)
Presence artificial structures	Yes (poles)
Date and time survey	20-7-2024 11:05
Time searched	40 minutes
Minutes to low tide	20 min. (after low tide)
GPS start	N54 37.396 W8 07.985
GPS end	N54 37.297 W8 07.338
Distance searched	1100 m
Feral <i>M. gigas</i> settlement	Indication of past settlement
<i>Ostrea edulis</i> presence	No
Remarks: One dead oyster with both valves still attached, was found fixed on a boulder.	



Fig. 101. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud. One dead oyster shell was found, fixed on a boulder.



Fig. 102. Survey track (blue line). No feral Pacific oysters were found. Yellow circle indicates the location where a dead oyster with both valves still attached, was found. Its form indicated that it concerned a Pacific oyster.

5.1.33 Kildoney Glebe Beach, Donegal Bay

Co. Donegal

Survey no. 33	Field code: MIO022 Timed Survey
Location	Kildoney Glebe Beach
Bay name	Donegal Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (70%)	Boulders
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (14 km)
Presence artificial structures	No
Date and time survey	20-7-2024 09:40
Time searched	00:30
Minutes to low tide	35 min. (before low tide)
GPS start	N54 31.125 W8 15.724
GPS end	N54 31.052 W8 15.671
Distance searched	480 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 103. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.



Fig. 104. Survey track (blue line). No feral Pacific oysters were found.

5.2 County Sligo



Fig. 105. Surveys in County Sligo

In 2025, one survey was carried in Co. Sligo, i.e. walking about a kilometre along Lissadell Beach in Sligo Bay (Fig. 105). Two feral oysters were recorded, one was attached to a boulder, and the other was found on top of a Pacific oyster, which was unattached and possibly came from one of the bags of oysters that were stored on the nearby oyster trestles. Considering that the surveys undertaken in 2009, 2012, and 2013 (Kochmann *et al.*, 2013; Zwerksche *et al.*, 2017) did not include any bays within Co. Sligo, it is unclear how long ago feral oysters first settled in this county. The two feral oysters discovered could be coming from a single spawning event, considering their similar size of 12 to 14 cm.

5.2.1 Lissadell Beach, Sligo Bay

Co. Sligo

Survey no. 34	Field code: MIO103 Timed Survey
Location	Lissadell Beach
Bay name	Sligo Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (80%)	Boulders
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand with shells
Presence oyster culture	Closeby (150 m)
Presence artificial structures	Yes (trestles)
Date and time survey	14-7-2025 14:11
Time searched	00:31
Minutes to low tide	8 min. (before low tide)
GPS start	N54 20.498 W8 33.660
GPS end	N54 20.509 W8 34.289
Distance searched	871 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 106. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.



Fig. 107. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 108. Two feral Pacific oysters, settled on top of each other. Large seaweeds were attached to them.

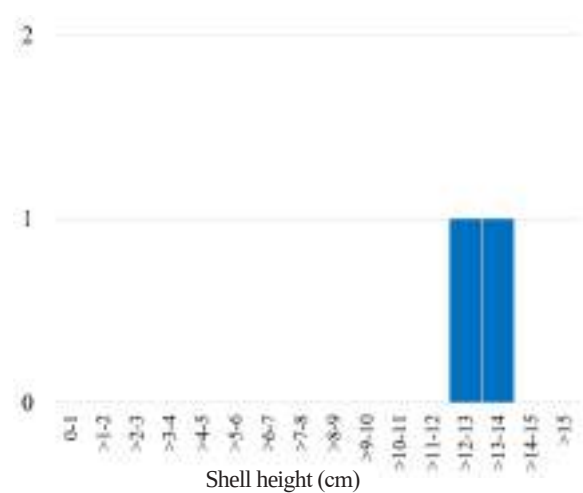


Fig. 109. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_10222 (GenBank nr: PX582986); HRM typing: AG_10223		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	124 mm - 134 mm		
Density in complete track (871 m)	0.002 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Pacific oyster	fixed	sand	loose	yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					2
Total number of "whole structure loose" oysters:					1
Total number of "loose" oysters with seaweed (>5cm)					1

5.3 County Mayo

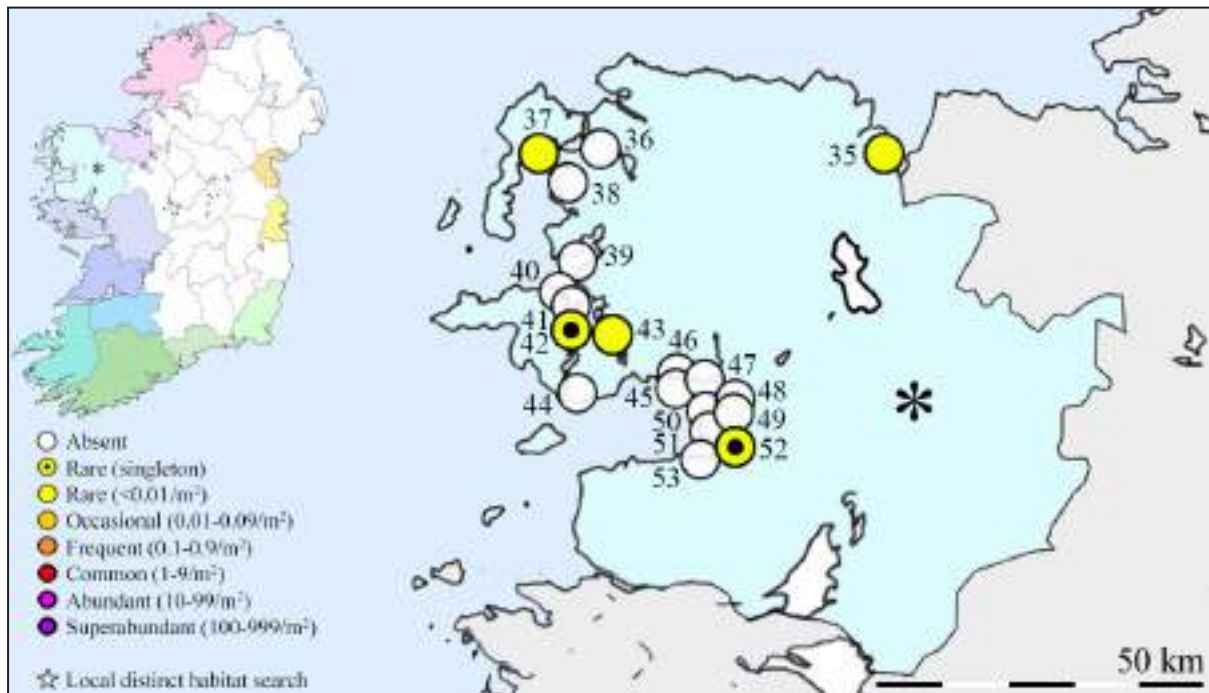


Fig. 110. Surveys in County Mayo

Between 2024 and 2025, 19 surveys were carried out in Co. Mayo, during which a total of 15 km of the shoreline was searched (Fig. 110). During five surveys, feral oysters were detected, but at all of these locations, the oysters were rare, with a mere one or a few specimens. Kochmann *et al.* (2013) searched for feral oysters at nine of the same locations, including three sites where feral oysters were discovered in either 2024 or 2025, yet, they did not record any feral oysters there. It is evident that the now established feral oysters are reproducing, at least locally. This can, for example, be concluded based on survey 43 along Tonregee East Beach, Achill, where a 7-8 cm large feral oyster and an 11-12 cm large feral oyster were found (Fig. 137). The size difference shows that they came from at least two different spawning events.

5.3.1 Ross Beach, Killala Bay

Co. Mayo

Survey no. 35	Field code: MIO114 Timed Survey
Location	Ross Beach
Bay name	Killala Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (30%)	Boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (50%)	Sand
Presence oyster culture	Closeby (40 m)
Presence artificial structures	Yes (Trestles)
Date and time survey	21-7-2025 09:20
Time searched	00:39
Minutes to low tide	0 min. (during low tide)
GPS start	N54 12.660 W9 12.130
GPS end	N54 12.487 W9 11.334
Distance searched	1223 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: On boulders a couple of oyster marks were found.	



Fig. 111. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand with some boulders.

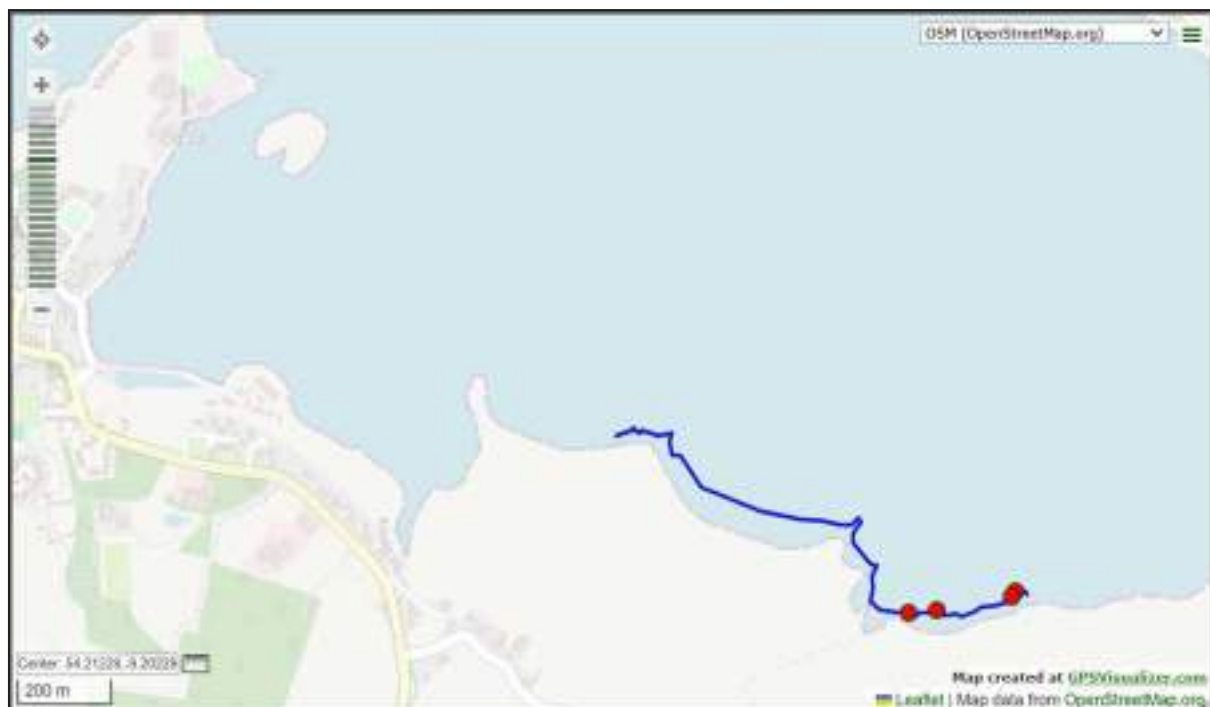


Fig. 112. Survey track (blue line). Four feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 113. Feral Pacific oyster, settled on a boulder.

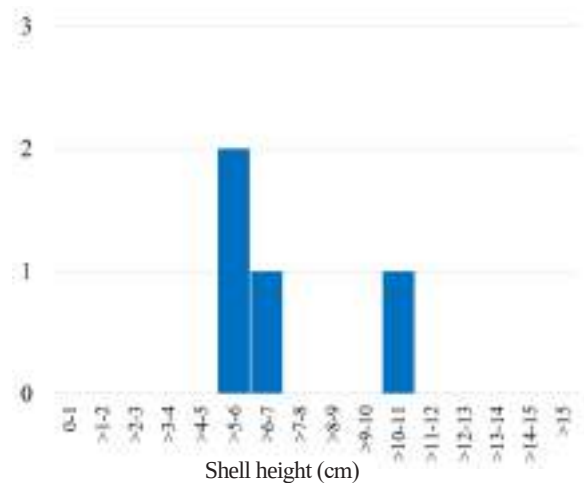


Fig. 114. Size-frequencies of Pacific oysters in 1 cm size intervals (n=4).

Molecular analyses	16S sequence: AG_10250 (GenBank nr: PX462779) AG_10252 (GenBank nr: PX582994); HRM typing: AG_10249 / AG_10251		
<i>M. gigas</i> oysters measured	4		
Minimum / maximum size (mm)	51 mm - 102 mm		
Density in complete track (1223 m)	0.003 /m ² (n=4)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	3
Pacific oyster	fixed	boulder	fixed	n.a.	1
Total number of oysters:					4
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.3.2 Rinnashinnagh, Broadhaven Bay

Co. Mayo

Survey no. 36	Field code: MIO118 Timed Survey
Location	Rinnashinnagh
Bay name	Broadhaven Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (60%)	Pebbles and boulders
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	24-7-2025 10:22
Time searched	00:30
Minutes to low tide	68 min. (before low tide)
GPS start	N54 13.180 W9 52.514
GPS end	N54 13.037 W9 53.071
Distance searched	821 m
Feral <i>M. gigas</i> settlement	Indication of past settlement
<i>Ostrea edulis</i> presence	Yes
Remarks: Four flat oysters were found. Two were fixed on boulders and two were found loose on the sand. The DNA of two specimen was sequenced (AG_10257 / AG_10258).	



Fig. 115. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and some boulders. An old Pacific oyster shell was found on a boulder, an indication of past settlement.



Fig. 116. Survey track (blue line). No living feral Pacific oysters were found. Four flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.3.3 Emilybeg, Blacksod Bay

Co. Mayo

Survey no. 37	Field code: MIO115 Timed Survey
Location	Emilybeg
Bay name	Blacksod Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (30%)	Boulders
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (50%)	Sand with gravel
Presence oyster culture	Far (5 km)
Presence artificial structures	No
Date and time survey	21-7-2025 09:45
Time searched	00:39
Minutes to low tide	0 min. (during low tide)
GPS start	N54 12.662 W10 01.328
GPS end	N54 12.459 W10 00.954
Distance searched	738 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks: Four flat oysters (<i>Ostrea edulis</i>) were found loose on the sand. The DNA of one specimen was sequenced (AG_10248, GenBank nr: PX462778).	



Fig. 117. General habitat: The habitat varied across the survey, specifically between areas of primarily sand and those consisting predominantly of boulders overgrown by seaweeds.



Fig. 118. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Four flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 119. Feral Pacific oyster, settled on a boulder.

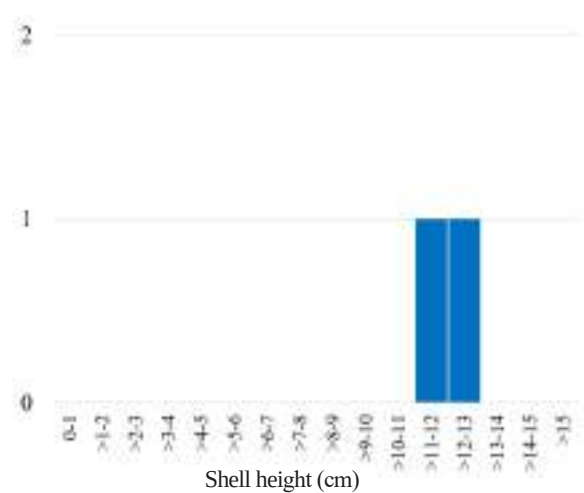


Fig. 120. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_10247 (GenBank nr: PX582993)		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	130 mm - 117 mm		
Density in complete track (738 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.3.4 Claggan Bay Beach, Blacksod Bay

Co. Mayo

Survey no. 38	Field code: MIO116 Timed Survey
Location	Claggan Bay Beach
Bay name	Blacksod Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (20%)	Boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i> and <i>Chorda filum</i>
Soft substrate (70%)	Sand with shells and pebbles
Presence oyster culture	Closeby (400 m)
Presence artificial structures	No
Date and time survey	22-7-2025 10:00
Time searched	00:32
Minutes to low tide	0 min. (during low tide)
GPS start	N54 10.420 W9 57.111
GPS end	N54 10.565 W9 56.618
Distance searched	1200 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks:	Six flat oysters (<i>Ostrea edulis</i>) were found loose on the sand. The DNA of one specimen was sequenced (AG_10253).



Fig. 121. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles on sand. On the sand, six individuals of *O. edulis* were found, all with macro algae (*Chorda filum*) attached.



Fig. 122. Survey track (blue line). No feral Pacific oysters were found. Six flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.3.5 Bunafolly, Blacksod Bay

Co. Mayo

Survey no. 39	Field code: MIO117 Timed Survey
Location	Bunafolly
Bay name	Blacksod Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (90%)	Bedrock and boulders
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (18.5 km)
Presence artificial structures	No
Date and time survey	22-7-2025 11:12
Time searched	00:30
Minutes to low tide	22 min. (after low tide)
GPS start	N54 03.637 W9 56.007
GPS end	N54 03.720 W9 56.250
Distance searched	377 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

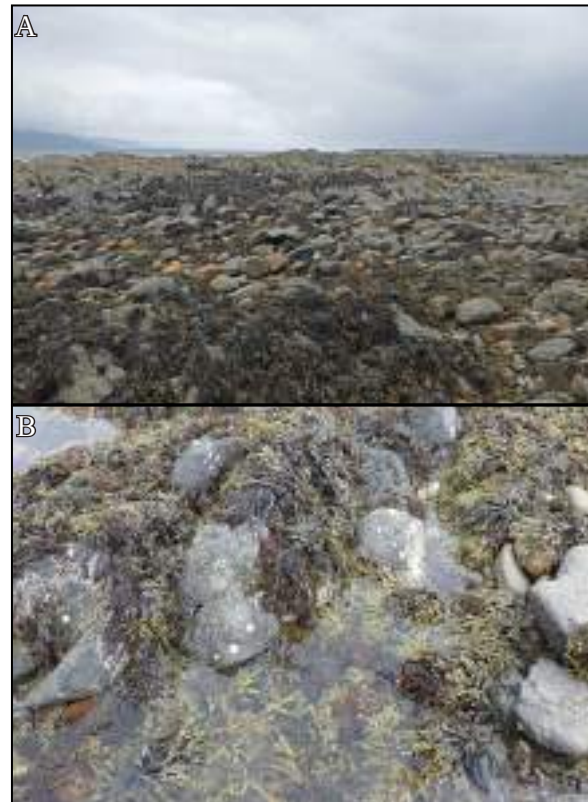


Fig. 123. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock and boulders.



Fig. 124. Survey track (blue line). No feral Pacific oysters were found.

5.3.6 Valley Beach, Achill

Co. Mayo

Survey no. 40	Field code: MIO048 Timed Survey
Location	Valley Beach
Bay name	Achill
Bay residence time (days)	10.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (70%)	Boulders
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (4 km)
Presence artificial structures	No
Date and time survey	25-7-2024 16:38
Time searched	00:33
Minutes to low tide	38 min. (after low tide)
GPS start	N54 01.056 W9 57.199
GPS end	N54 00.989 W9 57.148
Distance searched	752 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 125. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.

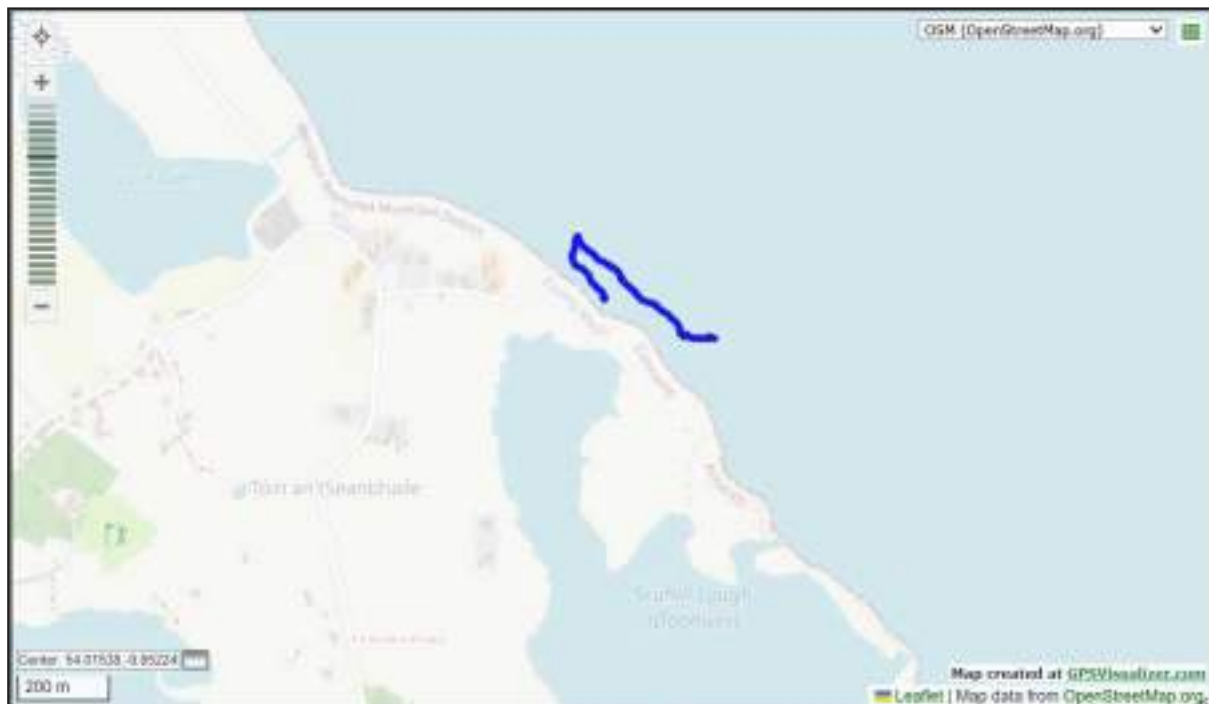


Fig. 126. Survey track (blue line). No feral Pacific oysters were found.

5.3.7 Inishbiggle Ferry West, Achill

Co. Mayo

Survey no. 41	Field code: MIO047 Timed Survey
Location	Inishbiggle Ferry West
Bay name	Achill
Bay residence time (days)	10.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (70%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp. and <i>Sargassum muticum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2 km)
Presence artificial structures	Yes (ramp)
Date and time survey	25-7-2024 15:49
Time searched	00:31
Minutes to low tide	0 min. (during low tide)
GPS start	N53 59.831 W9 55.756
GPS end	N53 59.875 W9 55.780
Distance searched	589 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 127. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 128. Survey track (blue line). No feral Pacific oysters were found.

5.3.8 Derrowlla Beach, Achill

Co. Mayo

Survey no. 42	Field code: MIO046 Timed Survey
Location	Derrowlla Beach
Bay name	Achill
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (50%)	Boulders and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Far (850 m)
Presence artificial structures	No
Date and time survey	25-7-2024 14:50
Time searched	00:30
Minutes to low tide	40 min. (before low tide)
GPS start	N53 57.925 W9 56.436
GPS end	N53 57.859 W9 56.321
Distance searched	811 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Three flat oysters were found. The DNA was sequenced (AG_9102 GenBank nr: PX462772; AG_9104, GenBank nr: PX462773; AG_9105.



Fig. 129. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown by seaweeds.



Fig. 130. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found. Three flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 131. Feral Pacific oyster, settled on a boulder.

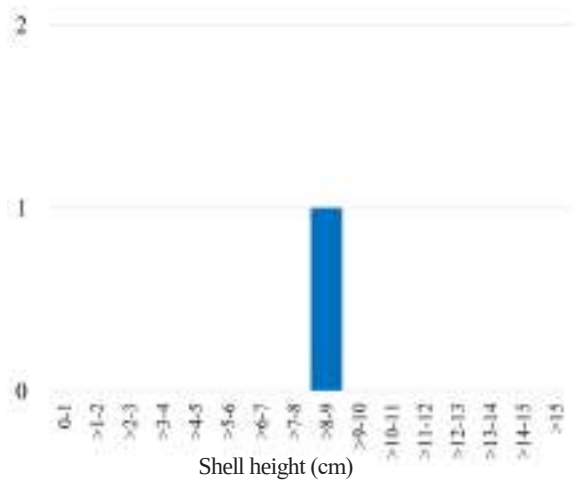


Fig. 133. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).



Fig. 132. Flat oyster, loose on the sediment.

Molecular analyses	16S sequence: AG_9103 (GenBank nr: PX149992);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	83 mm		
Density in complete track (811 m)	0.001 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.3.9 Tonregree East Beach, Achill

Co. Mayo

Survey no. 43	Field code: MIO045 Timed Survey
Location	Tonregree East Beach
Bay name	Achill
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (80%)	Pebbles and boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (6.5 km)
Presence artificial structures	No
Date and time survey	25-7-2024 14:00
Time searched	00:31
Minutes to low tide	89 min. (before low tide)
GPS start	N53 57.469 W9 51.320
GPS end	N53 57.502 W9 51.165
Distance searched	740 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks: Two flat oysters (<i>Ostrea edulis</i>) were found loose on the sand.	



Fig. 134. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles with some boulders overgrown by seaweeds.



Fig. 135. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Two flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 136. Feral Pacific oyster, settled on a boulder.

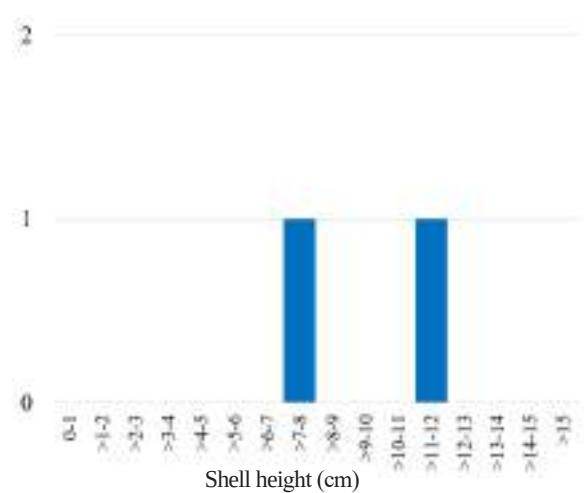


Fig. 137. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9100 (GenBank nr: PX149991); HRM typing: AG_9101		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	74 mm - 113 mm		
Density in complete track (740 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.3.10 Gubnahardia, Achill

Co. Mayo

Survey no. 44	Field code: MIO044 Timed Survey
Location	Gubnahardia
Bay name	Achill
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (70%)	Pebbles and boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (Trestles)
Date and time survey	25-7-2024 13:10
Time searched	00:30
Minutes to low tide	90 min. (before low tide)
GPS start	N53 52.569 W9 56.167
GPS end	N53 52.572 W9 56.046
Distance searched	974 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 138. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown by seaweeds.

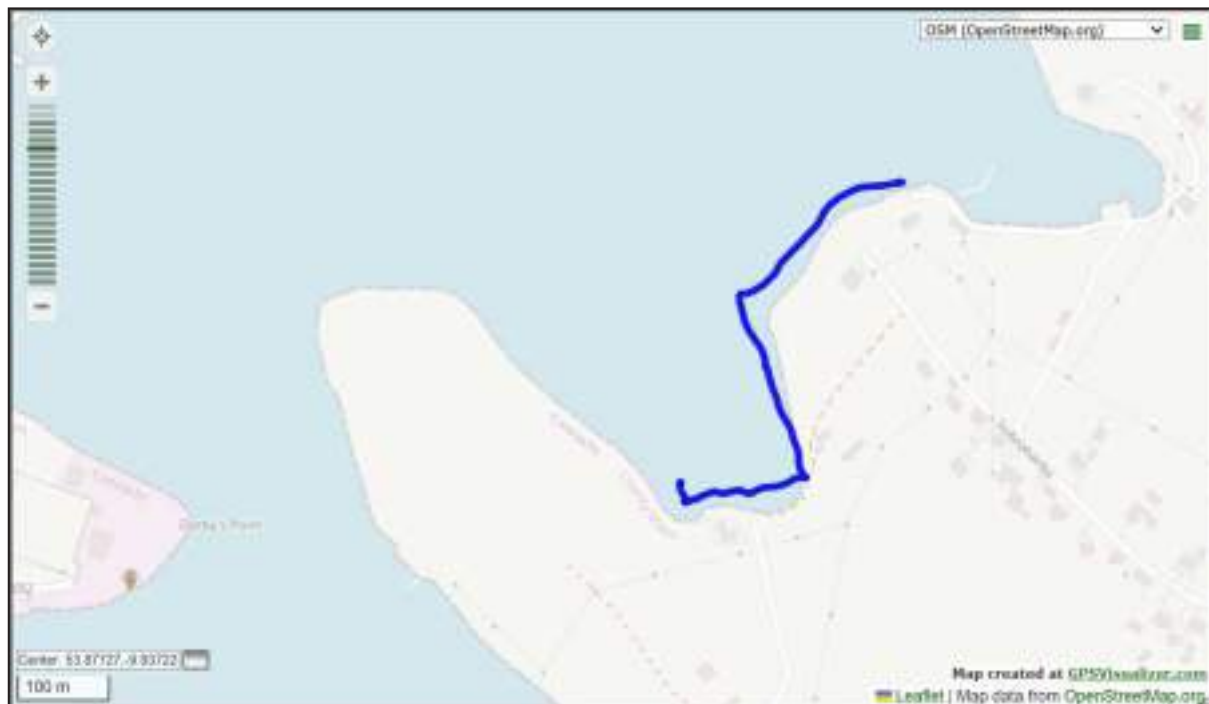


Fig. 139. Survey track (blue line). No feral Pacific oysters were found.

5.3.11 Inishnacross, Clew Bay

Co. Mayo

Survey no. 45	Field code: MIO033 Timed Survey
Location	Inishnacross
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (40%)	Boulders and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (Trestles)
Date and time survey	22-7-2024 13:42
Time searched	00:30
Minutes to low tide	2 min. (after low tide)
GPS start	N53 53.111 W9 41.186
GPS end	N53 53.137 W9 41.536
Distance searched	511 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

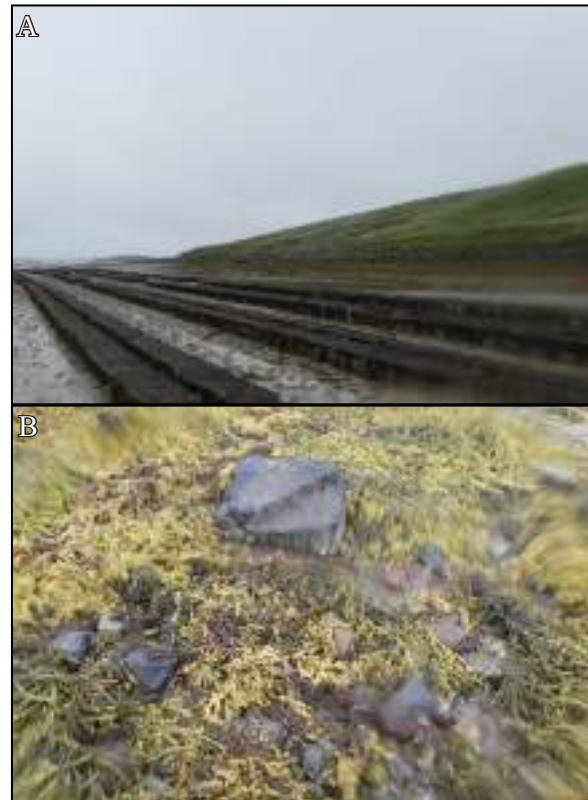


Fig. 140. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders.

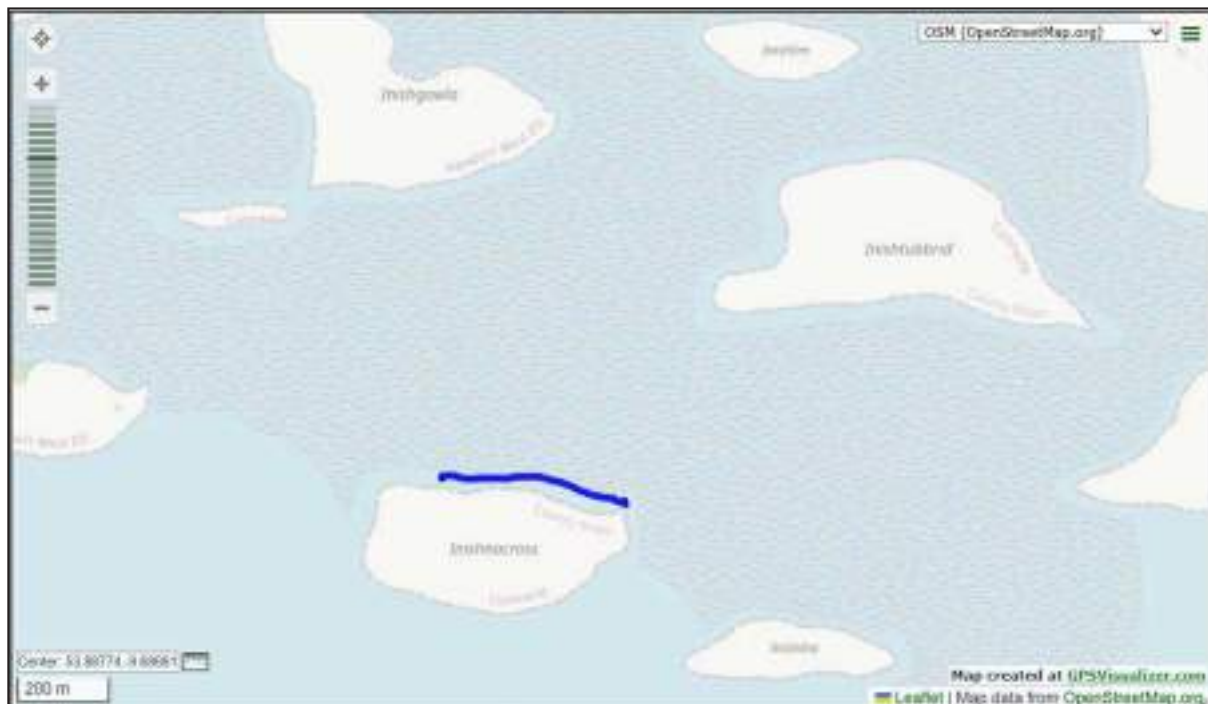


Fig. 141. Survey track (blue line). No feral Pacific oysters were found.

5.3.12 Drumfurban, Clew Bay

Co. Mayo

Survey no. 46	Field code: MIO034 Timed Survey
Location	Drumfurban
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (60%)	Mud
Presence oyster culture	Far (900 m)
Presence artificial structures	No
Date and time survey	22-7-2024 14:36
Time searched	00:30
Minutes to low tide	56 min. (after low tide)
GPS start	N53 54.007 W9 40.919
GPS end	N53 53.907 W9 40.974
Distance searched	625 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 142. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud and seaweeds.

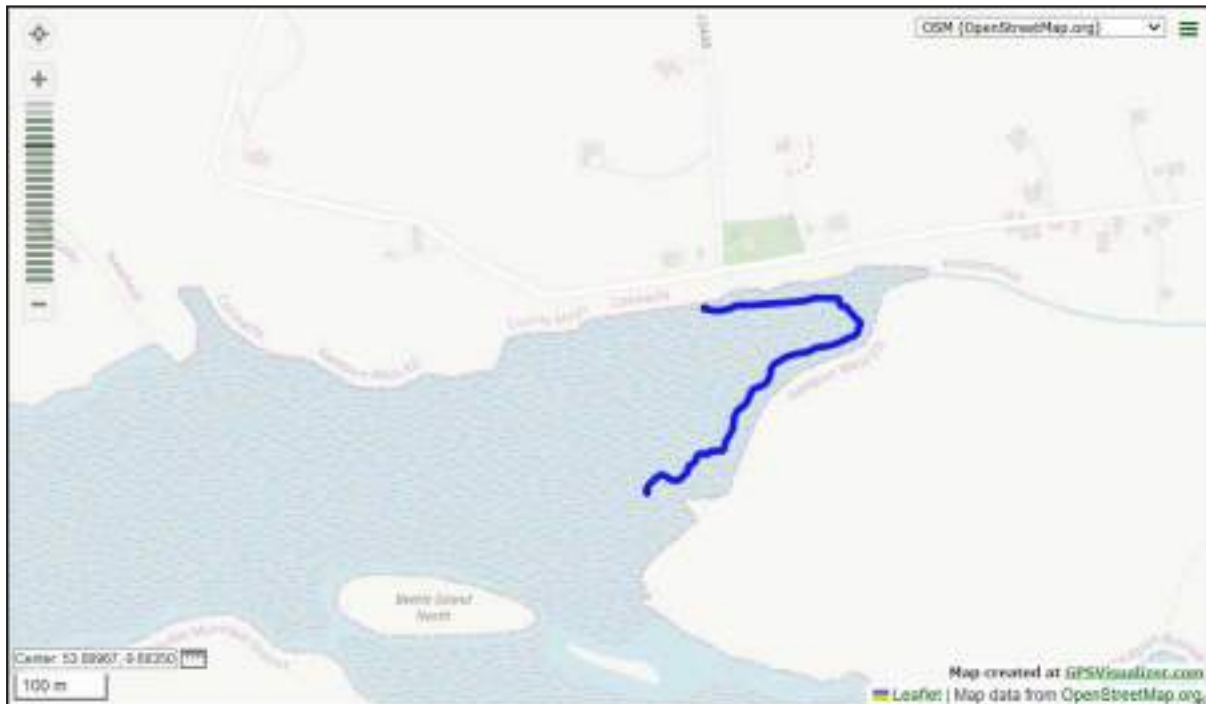


Fig. 143. Survey track (blue line). No feral Pacific oysters were found.

5.3.13 Raigh Pier, Clew Bay

Co. Mayo

Survey no. 47	Field code: MIO030 Timed Survey
Location	Raigh Pier
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (80%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (2.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	22-7-2024 11:52
Time searched	00:32
Minutes to low tide	36 min. (before low tide)
GPS start	N53 53.661 W9 38.313
GPS end	N53 53.572 W9 38.520
Distance searched	390 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 144. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown with seaweeds.



Fig. 145. Survey track (blue line). No feral Pacific oysters were found.

5.3.14 Roslaher Beach South, Clew Bay

Co. Mayo

Survey no. 48	Field code: MIO032 Timed Survey
Location	Roslaher Beach South
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (20%)	Pebbles and boulders
Macro algae (60%)	<i>Ascophyllum nodosum</i>
Soft substrate (20%)	Mud
Presence oyster culture	Far (7,5 km)
Presence artificial structures	No
Date and time survey	22-7-2024 14:00
Time searched	00:57
Minutes to low tide	20 min. (after low tide)
GPS start	N53 51.438 W9 33.758
GPS end	N53 51.482 W9 34.735
Distance searched	1300 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

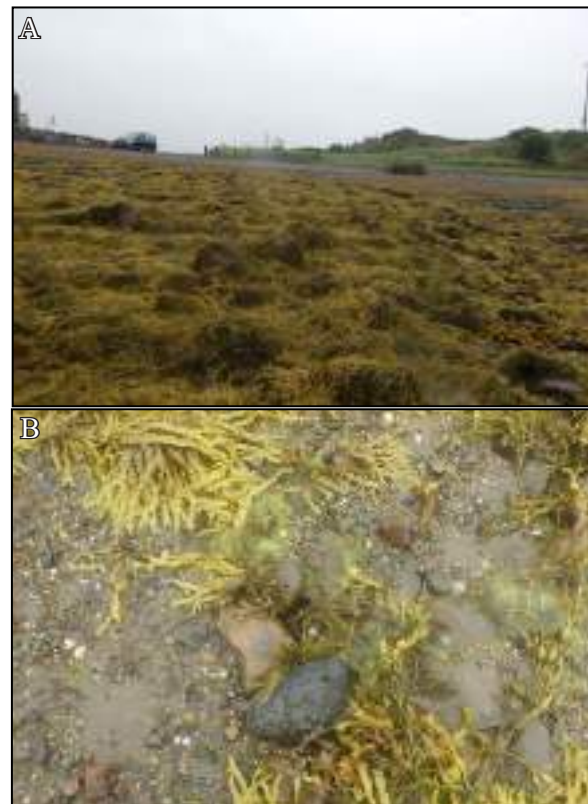


Fig. 146. General habitat: The habitat was consistent throughout the survey, primarily characterized by seaweeds on mud.

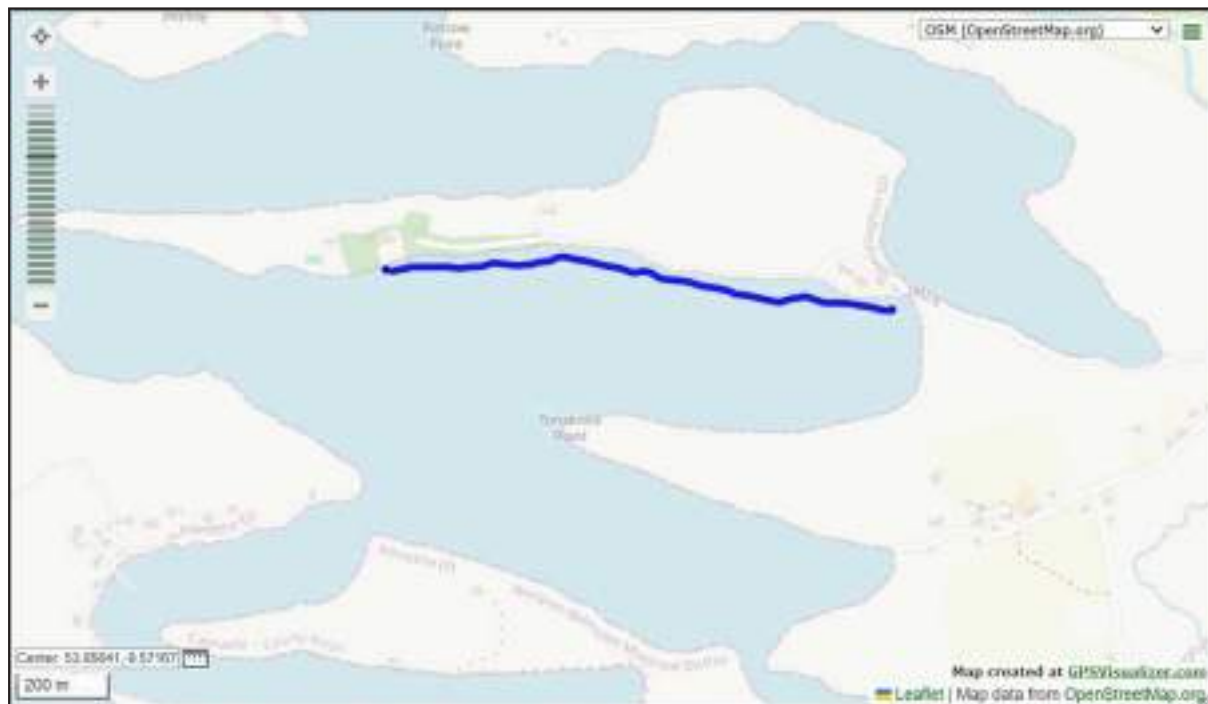


Fig. 147. Survey track (blue line). No feral Pacific oysters were found.

5.3.15 Cushalogurt Beach, Clew Bay

Co. Mayo

Survey no. 49	Field code: MIO031 Timed Survey
Location	Cushalogurt Beach
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (10%)	Pebbles and gravel
Macro algae (40%)	<i>Ascophyllum nodosum</i>
Soft substrate (50%)	Mud
Presence oyster culture	Far (9 km)
Presence artificial structures	No
Date and time survey	22-7-2024 13:00
Time searched	00:32
Minutes to low tide	8 min. (before low tide)
GPS start	N53 50.856 W9 33.824
GPS end	N53 50.851 W9 34.249
Distance searched	677 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: One valve of a pacific oyster was found.	



Fig. 148. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud with pebbles and gravel.

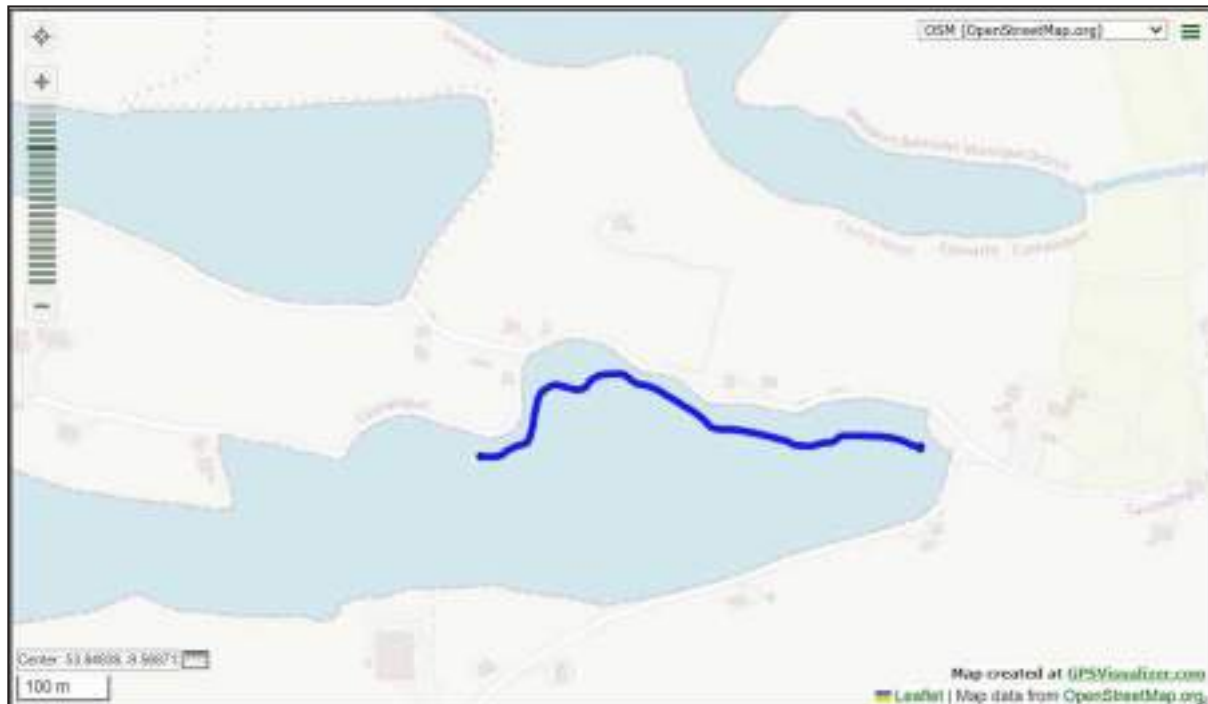


Fig. 149. Survey track (blue line). No feral Pacific oysters were found.

5.3.16 Inishnakillew Beach, Clew Bay

Co. Mayo

Survey no. 50	Field code: MIO027 Timed Survey
Location	Inishnakillew Beach
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (60%)	Mud
Presence oyster culture	Far (5 km)
Presence artificial structures	Yes (stone bridge)
Date and time survey	21-7-2024 13:24
Time searched	00:32
Minutes to low tide	24 min. (after low tide)
GPS start	N53 50.970 W9 37.073
GPS end	N53 50.904 W9 37.183
Distance searched	444 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: Two flat oysters were found	



Fig. 150. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud with seaweeds.



Fig. 151. Survey track (blue line). No feral Pacific oysters were found. Two flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.3.17 Rosmoney Pier, Clew Bay

Co. Mayo

Survey no. 51	Field code: MIO029 Timed Survey
Location	Rosmoney Pier
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (30%)	Mud
Presence oyster culture	Far (4.4 km)
Presence artificial structures	Yes (Pier/ ramp / stone wall)
Date and time survey	21-7-2024 14:00
Time searched	00:30
Minutes to low tide	60 min. (after low tide)
GPS start	N53 49.330 W9 36.900
GPS end	N53 49.521 W9 37.176
Distance searched	715 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	Multiple loose pacific oyster shells were found



Fig. 152. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud with seaweeds. A couple of empty oyster shells were found.



Fig. 153. Survey track (blue line). No feral Pacific oysters were found.

5.3.18 Roman Island, Clew Bay

Co. Mayo

Survey no. 52	Field code: MIO026 Timed Survey
Location	Roman Island
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (30%)	Pebbles and gravel
Macro algae (40%)	<i>Fucus vesiculosus</i>
Soft substrate (30%)	Mud
Presence oyster culture	Far (5.1 km)
Presence artificial structures	Yes (pier)
Date and time survey	21-7-2024 12:45
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N53 48.048 W9 33.069
GPS end	N53 48.156 W9 33.692
Distance searched	1171 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 154. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and gravel overgrown by seaweeds on mud.

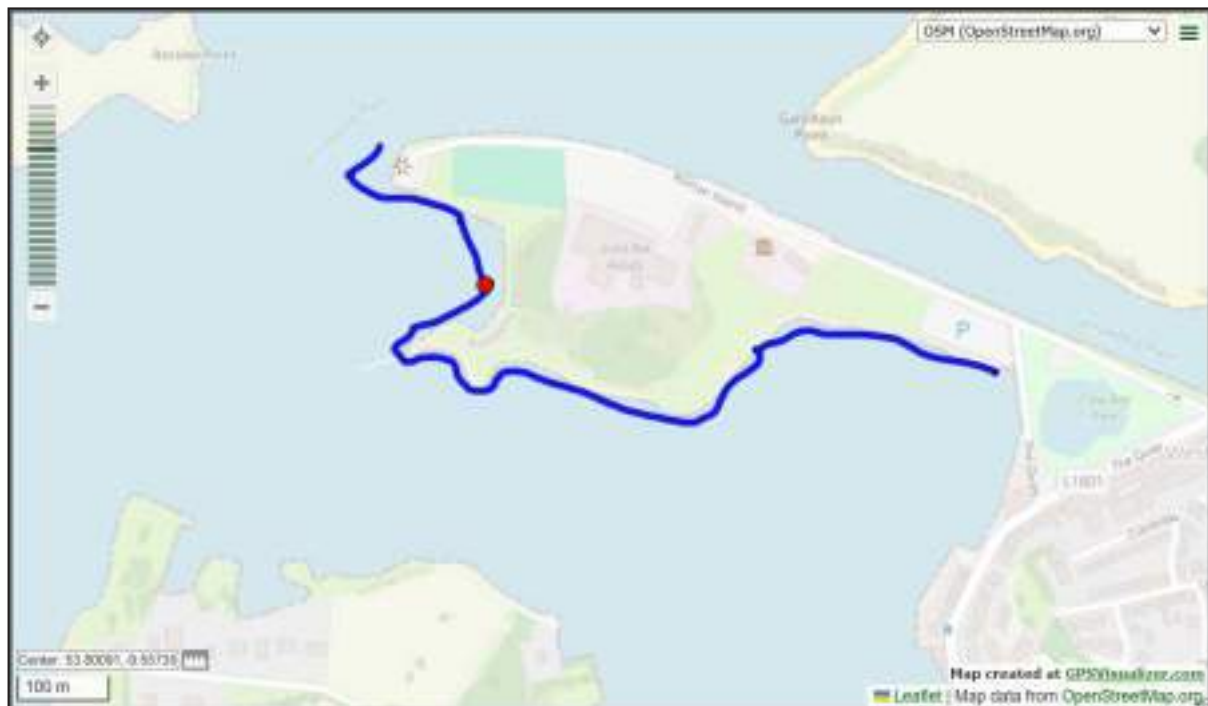


Fig. 155. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.

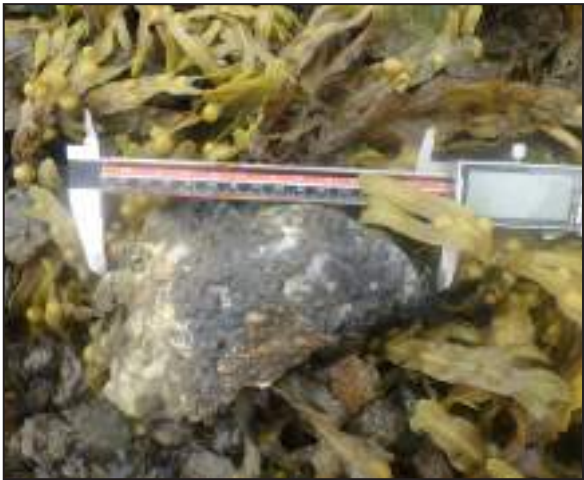


Fig. 156. A feral Pacific oyster, found loose on the substrate.

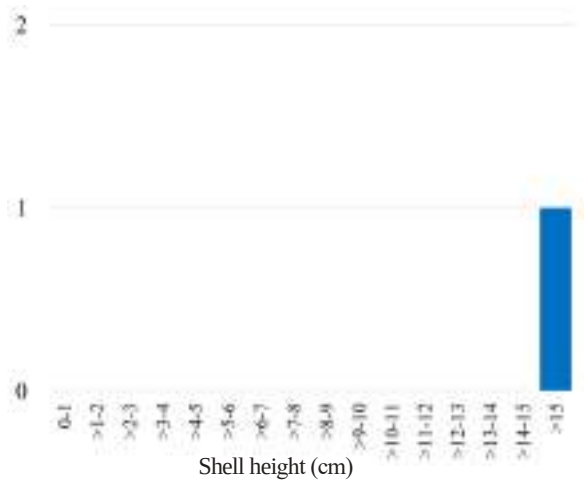


Fig. 157. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_9094 (GenBank nr: PX149988);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	155 mm		
Density in complete track (1171 m)	0.001 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Sand	loose	n.a.	loose	yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					1
Total number of “loose” oysters with seaweed (>5cm)					1

5.3.19 Carrowkeel Beach, Clew Bay

Co. Mayo

Survey no. 53	Field code: MIO025 Timed Survey
Location	Carrowkeel Beach
Bay name	Clew Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (60%)	Pebbles and boulders
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (trestles)
Date and time survey	21-7-2024 12:03
Time searched	00:45
Minutes to low tide	12 min. (before low tide)
GPS start	N53 47.295 W9 38.110
GPS end	N53 47.256 W9 37.726
Distance searched	580 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster was found on a boulder. The DNA was sequenced (AG_9093 / GenBank nr: PX462770).	



Fig. 158. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown by seaweeds.

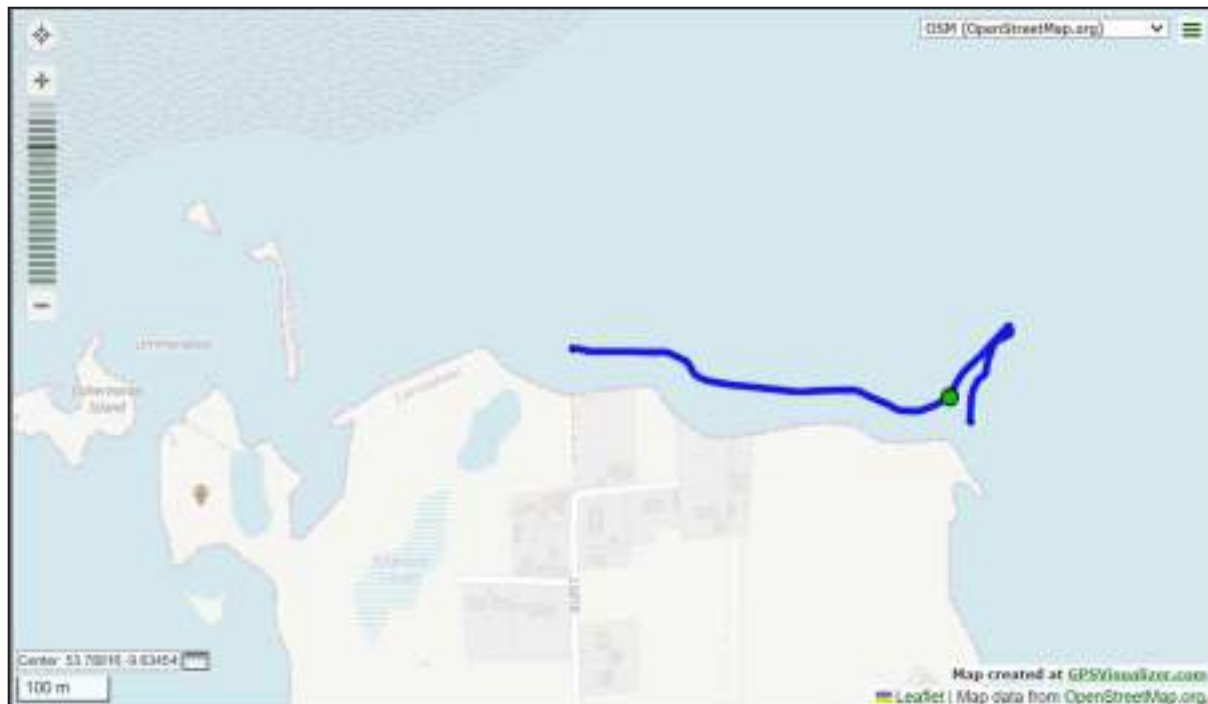


Fig. 159. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

5.4 County Galway

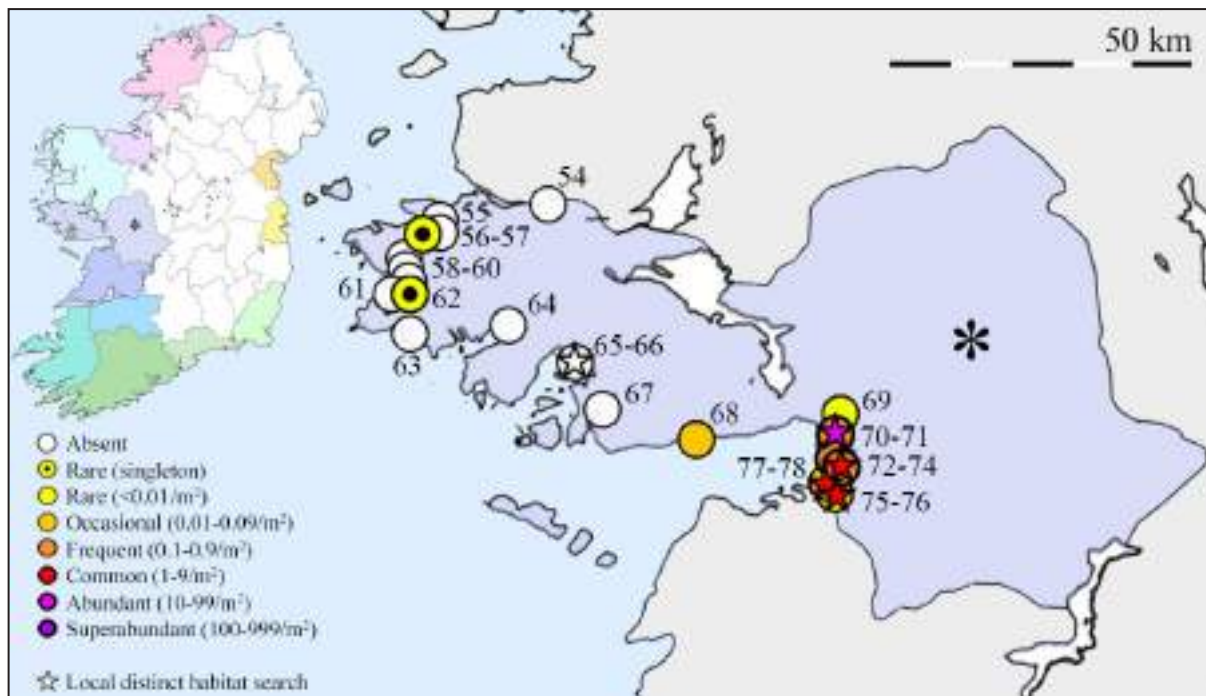


Fig. 160. Surveys in County Galway

Between 2024 and 2025, 25 surveys were carried out in Co. Galway, during which 13 km of the shoreline was searched (Fig. 160). The presence of feral oysters was recorded during 13 of these surveys. The highest abundance, frequent (0.1-0.9 oysters/m²) on the SACFOR scale (Table 2), was recorded in the timed surveys 68, 70, 72, 74 (all locations in Galway Bay). In close proximity to the timed survey tracks, several distinct habitat searches were done, as various piers in the area served as prominent local hotspots with significantly higher densities of feral oysters when compared to the surrounding environment. East of the Galway sailing club pier (survey 70), for instance, feral oyster abundance was frequent (0.01-0.09 oysters/m²), whereas on the pier itself, distinct habitat survey 71 showed the feral oysters were abundant (10-99 oysters/m²). The area around Crushoa Pier in Galway Bay showed another example, where just one feral oyster was discovered during the timed survey near the pier (survey 75), while on the pier itself (distinct habitat survey 76), feral oysters were common (1-9 oysters/m²) with shell sizes spanning 3 to 14 cm. This indicates that several generations were present. More to the west in the bays of Conamara, not much appears to have changed

since the surveys in 2009 (Kochmann *et al.*, 2013) when feral oyster settlement was found to be rare (Fig. 1), as it also was in 2024 and 2025. Further west in Co. Galway, in Conamara, it seems little has changed since the 2009 surveys (Kochmann *et al.*, 2013). At that time, feral oyster settlement was found to be rare (Fig. 1), as it was in 2024 and 2025.

5.4.1 St. Michael's Church, Killary Harbour

Co. Galway

Survey no. 54	Field code: MIO028 Timed Survey
Location	St. Michael's Church
Bay name	Killary Harbour
Bay residence time (days)	10.16 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (10%)	Pebbles and boulders
Macro algae (40%)	<i>Ascophyllum nodosum</i>
Soft substrate (50%)	Mud
Presence oyster culture	No
Presence artificial structures	No
Date and time survey	21-7-2024 10:44
Time searched	00:34
Minutes to low tide	62 min. (before low tide)
GPS start	N53 36.007 W9 41.588
GPS end	N53 35.856 W9 41.683
Distance searched	626 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 161. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud and seaweeds.



Fig. 162. Survey track (blue line). No feral Pacific oysters were found.

5.4.2 Derryinver, Ballinakill Harbour

Co. Galway

Survey no. 55	Field code: MIO037 Timed Survey
Location	Derryinver
Bay name	Ballinakill Harbour
Bay residence time (days)	10.16 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (50%)	Pebbles and boulders
Macro algae (50%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (3.5 km)
Presence artificial structures	No
Date and time survey	23-7-2024 11:25
Time searched	00:31
Minutes to low tide	104 min. (before low tide)
GPS start	N53 34.258 W9 58.482
GPS end	N53 34.258 W9 58.482
Distance searched	752 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 163. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown by seaweeds.

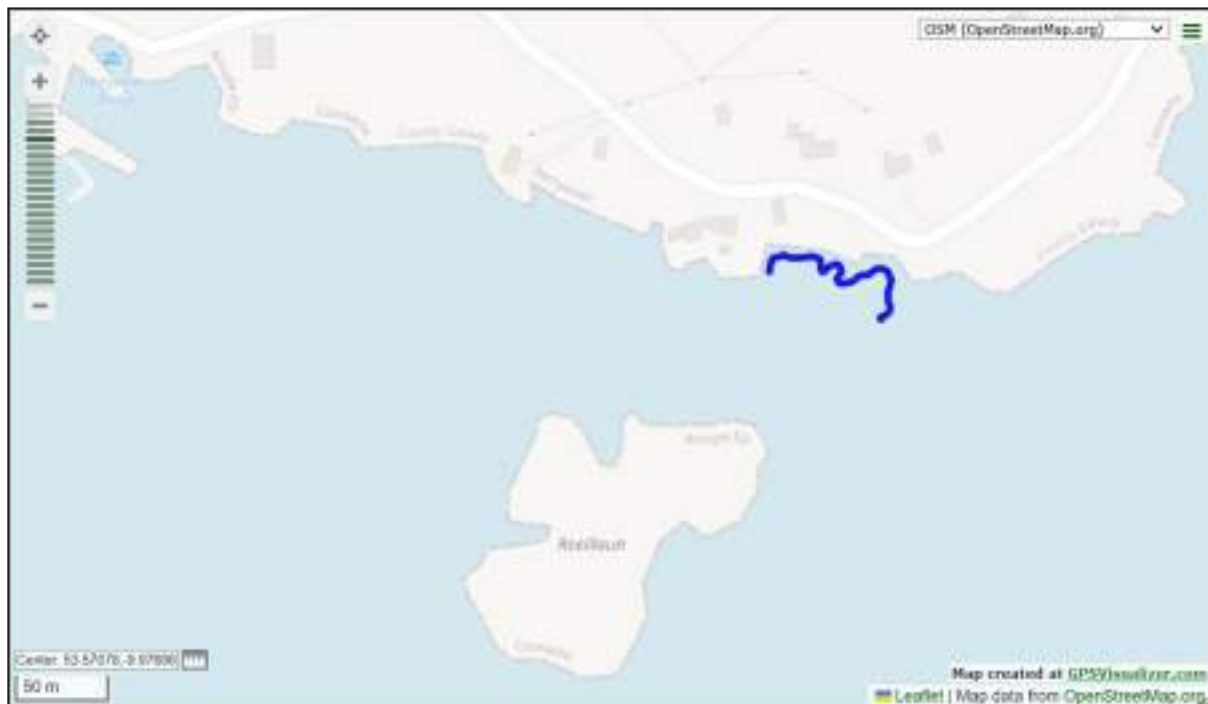


Fig. 164. Survey track (blue line). No feral Pacific oysters were found.

5.4.3 Rosleague Beach, Barnaderg Bay

Co. Galway

Survey no. 56	Field code: MIO035 Timed Survey
Location	Rosleague Beach
Bay name	Barnaderg Bay
Bay residence time (days)	10.16 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (80%)	Pebbles and boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (650 m)
Presence artificial structures	Yes (pier)
Date and time survey	23-7-2024 11:24
Time searched	00:30
Minutes to low tide	106 min. (before low tide)
GPS start	N53 33.278 W9 58.502
GPS end	N53 33.049 W9 58.009
Distance searched	1100 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Site with freshwater inlet and there were rests of an old oyster farm with some shells.	



Fig. 165. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.

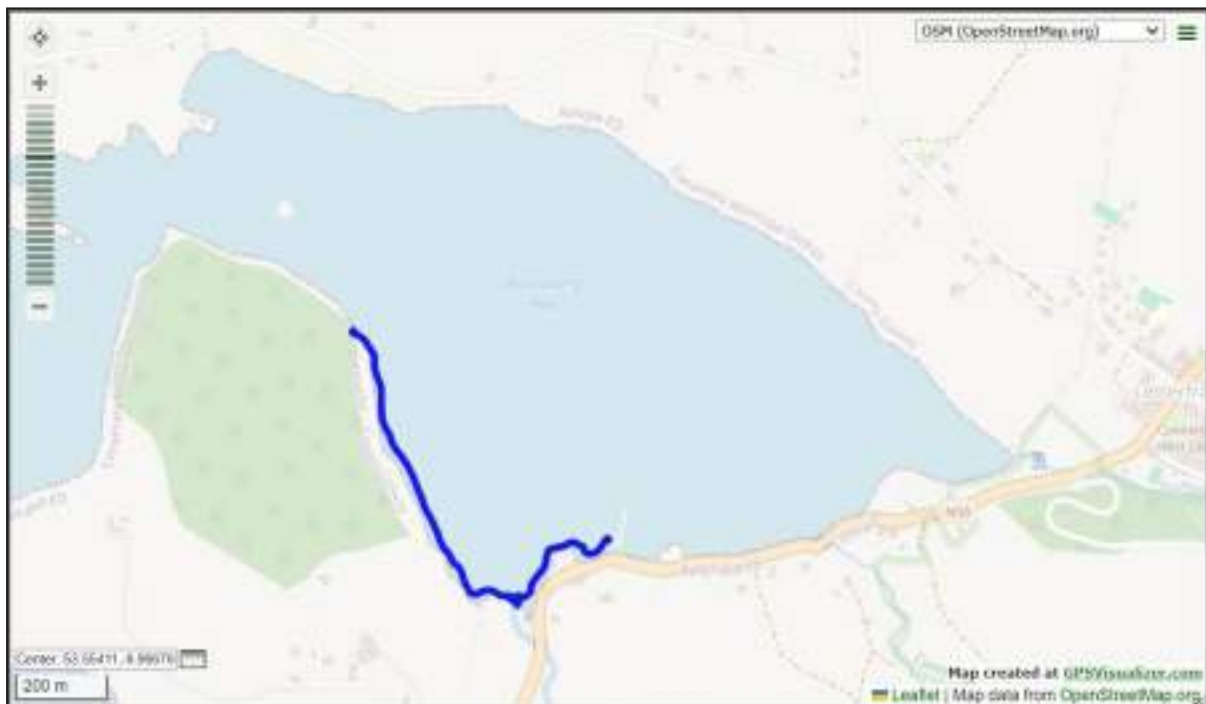


Fig. 166. Survey track (blue line). No feral Pacific oysters were found.

5.4.4 Cloonederowen Beach, Ballinakill Harbour

Co. Galway

Survey no. 57	Field code: MIO036 Timed Survey
Location	Cloonederowen Beach
Bay name	Ballinakill Harbour
Bay residence time (days)	16.10 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100
Hard substrate (30%)	Pebbles and boulders
Macro algae (70%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (30 m)
Presence artificial structures	Yes (pier, trestles, salmon farm)
Date and time survey	23-7-2024 11:22
Time searched	00:37
Minutes to low tide	101 min. (before low tide)
GPS start	N53 33.017 W10 00.497
GPS end	N53 33.325 W10 00.714
Distance searched	784 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 167. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown with seaweeds. On some boulders, marks of old oyster settlement were found.

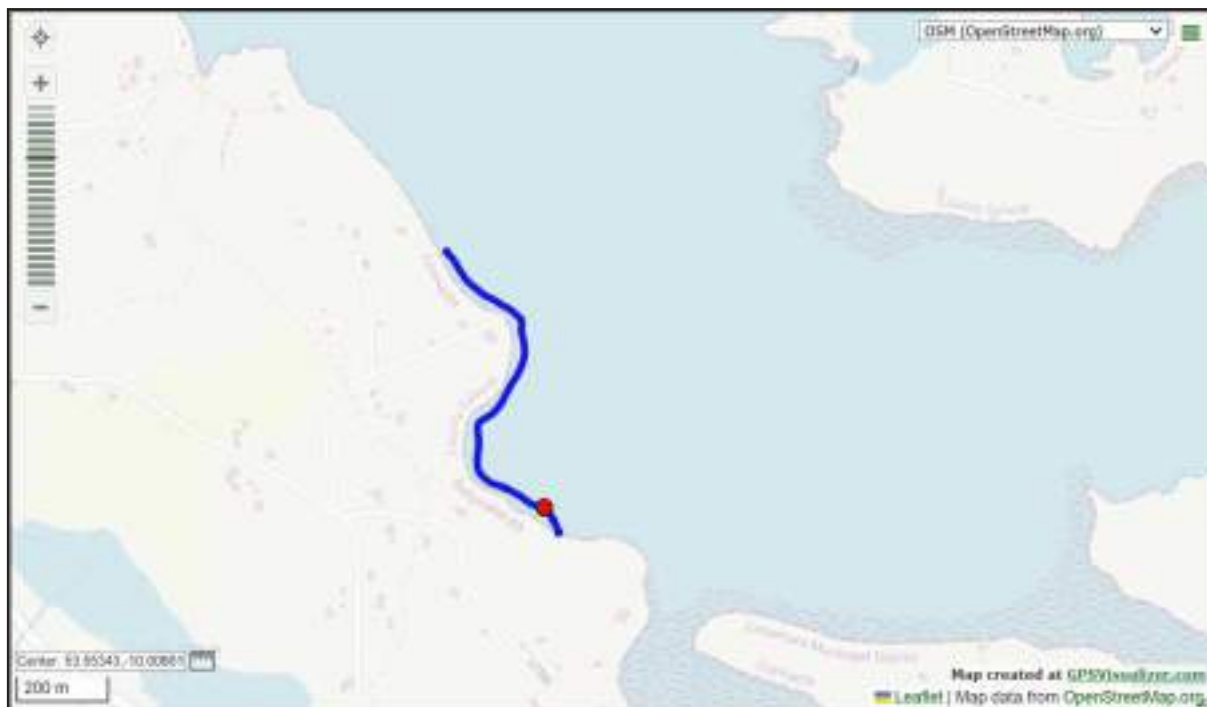


Fig. 168. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 169. Feral Pacific oyster, settled on the shell of a *Patella vulgata*, on a boulder.

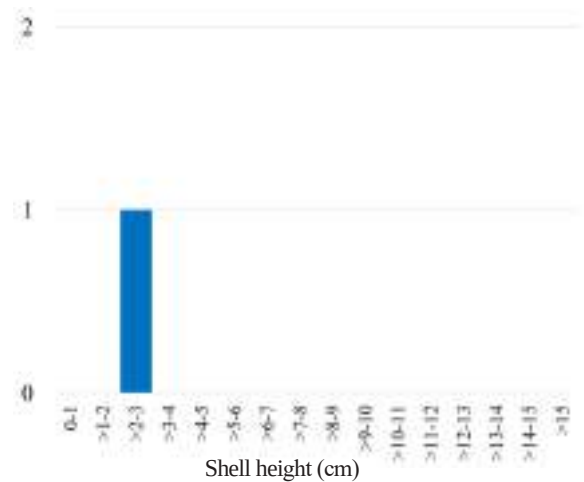


Fig. 170. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_9096 (GenBank nr: PX149989);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	27 mm		
Density in complete track (784 m)	0.003 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Other shell (<i>Patella vulgata</i>)	fixed	boulder	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.4.5 Boolard Beach, Streamstown Bay

Co. Galway

Survey no. 58	Field code: MIO038 Timed Survey
Location	Boolard Beach
Bay name	Streamstown Bay
Bay residence time (days)	10.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles and boulders
Macro algae (50%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (30%)	Mud
Presence oyster culture	Closeby (50 m)
Presence artificial structures	Yes (Trestles)
Date and time survey	23-7-2024 12:29
Time searched	00:31
Minutes to low tide	40 min. (before low tide)
GPS start	N53 30.755 W10 04.182
GPS end	N53 30.899 W10 04.568
Distance searched	609 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Site with freshwater inlet and there were rests of an old oyster farm with some shells.	

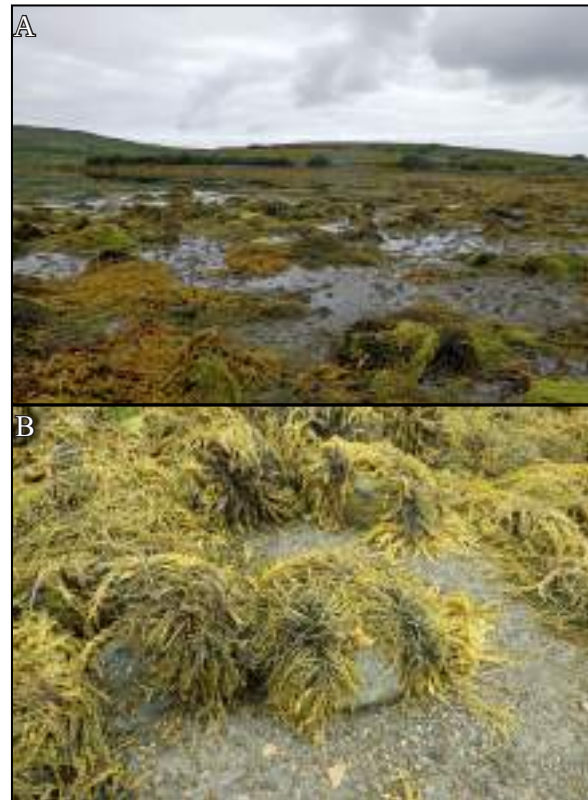


Fig. 171. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud and some boulders overgrown with seaweeds.



Fig. 172. Survey track (blue line). No feral Pacific oysters were found.

5.4.6 Derreen Beach, Streamstown Bay

Co. Galway

Survey no. 59	Field code: MIO039 Timed Survey
Location	Derreen Beach
Bay name	Streamstown Bay
Bay residence time (days)	10.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (40%)	Pebbles and boulders
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (600 m)
Presence artificial structures	12:31
Date and time survey	23-7-2024
Time searched	00:34
Minutes to low tide	35 min. (before low tide)
GPS start	N53 30.194 W10 03.663
GPS end	N53 30.227 W10 03.414
Distance searched	531 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Site with freshwater inlet.	



Fig. 173. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown with seaweeds.



Fig. 174. Survey track (blue line). No feral Pacific oysters were found.

5.4.7 Clifden Bay Beach, Clifden Bay

Co. Galway

Survey no. 60	Field code: MIO040 Timed Survey
Location	Clifden Bay Beach
Bay name	Clifden Bay
Bay residence time (days)	10.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (50%)	Boulders
Macro algae (20%)	<i>Fucus</i> spp.
Soft substrate (30%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (ramp)
Date and time survey	23-7-2024 12:49
Time searched	00:32
Minutes to low tide	19 min. (before low tide)
GPS start	N53 29.167 W10 03.142
GPS end	N53 29.040 W10 02.946
Distance searched	999 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks:	Seven flat oysters were found loose on the sand.



Fig. 175. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and those consisting predominantly of sand.

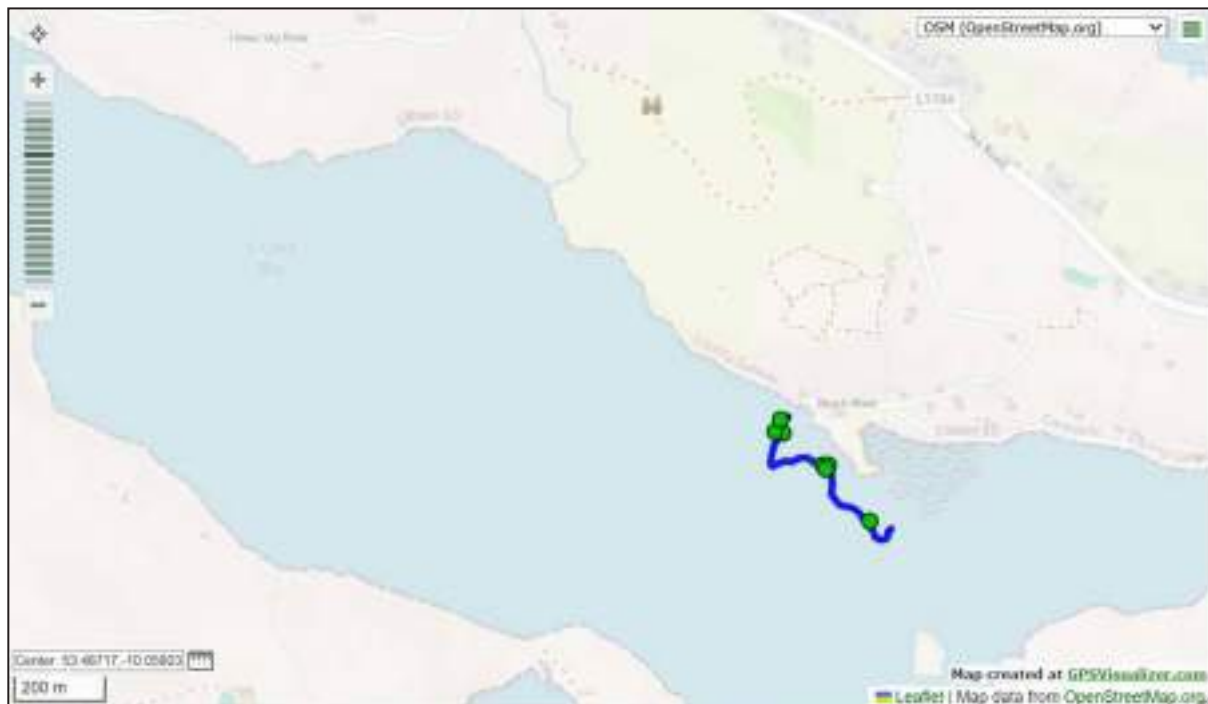


Fig. 176. Survey track (blue line). No feral Pacific oysters were found. Seven flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.4.8 Curhownagh Pier, Mannin Bay

Co. Galway

Survey no. 61	Field code: MIO041 Timed Survey
Location	Curhownagh Pier
Bay name	Mannin Bay
Bay residence time (days)	20.80 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (90%)	Bedrock and boulders
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (1360 m)
Presence artificial structures	Yes (pier)
Date and time survey	23-7-2024 14:22
Time searched	00:33
Minutes to low tide	62 min. (after low tide)
GPS start	N53 28.018 W10 05.062
GPS end	N53 27.954 W10 04.969
Distance searched	168 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 177. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 178. Survey track (blue line). No feral Pacific oysters were found.

5.4.9 Maum Beach, Mannin Bay

Co. Galway

Survey no. 62	Field code: MIO042 Timed Survey
Location	Maum Beach
Bay name	Mannin Bay
Bay residence time (days)	20.80 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (50%)	Bedrock and boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (20%)	Sand with gravel
Presence oyster culture	Far (1.4 km)
Presence artificial structures	No
Date and time survey	23-7-2024 14:23
Time searched	00:32
Minutes to low tide	63 min. (after low tide)
GPS start	N53 27.853 W10 02.861
GPS end	N53 27.824 W10 02.898
Distance searched	575 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster (<i>Ostrea edulis</i>) was found settled on another oyster shell. The DNA was sequenced (AG_9098, GenBank nr: PX462774).	

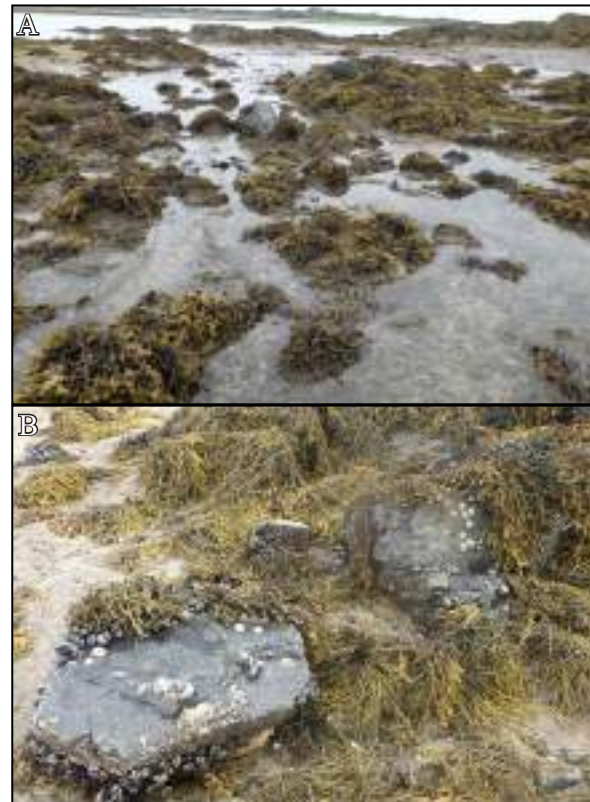


Fig. 179. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown with seaweeds.



Fig. 180. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 181. Feral Pacific oyster, settled on a boulder.



Fig. 182. Flat oyster, loose on the substrate.

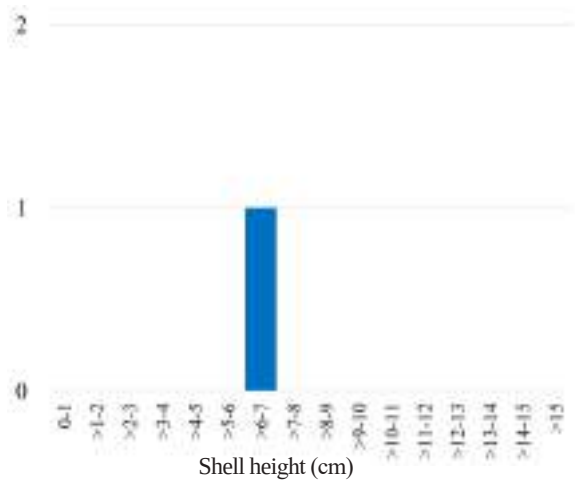


Fig. 183. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_9097 (GenBank nr: PX1499);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	64 mm		
Density in complete track (575 m)	0.002 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.4.10 Doohulla Pier, Ballyconneely Bay

Co. Galway

Survey no. 63	Field code: MIO043 Timed Survey
Location	Doohulla Pier
Bay name	Ballyconneely Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (50%)	Boulders
Macro algae (40%)	<i>Fucus</i> spp. and <i>Chondrus crispus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	23-7-2024 14:40
Time searched	00:35
Minutes to low tide	80 min. (after low tide)
GPS start	N53 24.715 W10 02.709
GPS end	N53 24.713 W10 02.705
Distance searched	840 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: Four flat oysters were found fixed on rocks. The DNA of one specimen was sequenced (AG_9099 / GenBank nr: PX462771).	



Fig. 184. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by seaweeds. Four specimens of *Ostrea edulis* were found fixed on rocks.



Fig. 185. Survey track (blue line). No feral Pacific oysters were found. Four flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.4.11 Cashel Pier, Cashel Bay

Co. Galway

Survey no. 64	Field code: MIO137 Timed Survey
Location	Cashel Pier
Bay name	Cashel Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	27-7-2025 13:27
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N53 25.026 W9 47.980
GPS end	N53 24.864 W9 47.968
Distance searched	563 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 186. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown with seaweeds.

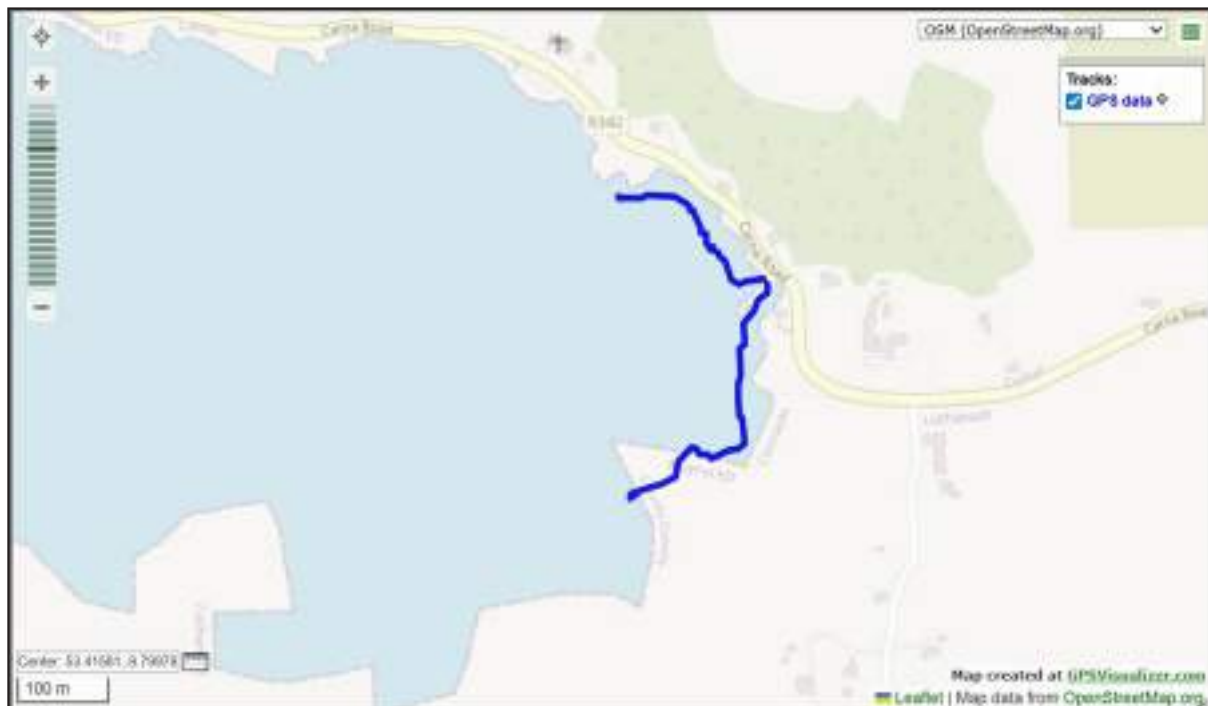


Fig. 187. Survey track (blue line). No feral Pacific oysters were found.

5.4.12 Off Kilbricken Pier, Kilkieran Bay

Co. Galway

Survey no. 65	Field code: MIO135 Timed Survey
Location	Off Kilbricken Pier
Bay name	Kilkieran Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (50%)	Boulders
Macro algae (40%)	<i>Ascophyllum nodosum</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	27-7-2025 12:39
Time searched	00:30
Minutes to low tide	46 min. (before low tide)
GPS start	N53 21.668 W9 37.725
GPS end	N53 21.557 W9 38.046
Distance searched	694 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster was found loose on the sand.	



Fig. 188. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by seaweeds. One flat oyster was found loose on the sand.



Fig. 189. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

5.4.13 Kilbricken Pier, Kilkieran Bay

Co. Galway

Survey no. 66	Field code: MIO136 Distinct Habitat Survey
Location	Kilbricken Pier
Bay name	Kilkieran Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Artificial structure: Concrete jetty
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	n.a.
Date and time survey	27-7-2025 12:52
Time searched	00:15
Minutes to low tide	46 min. (before low tide)
GPS start	N53 21.619 W9 37.856
GPS end	n.a.
Distance searched	5 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: Four flat oysters were found within one meter from each other, growing on a pier wall. The DNA of one specimen was sequenced (AG_10298, GenBank nr: PX462781).	



Fig. 190 Distinct habitat survey: large green dot. Blue line concerns bordering survey no. 65.



Fig. 191. General habitat: The pier wall on which four *Ostrea edulis* specimens were found.



Fig. 192 Pier wall with a flat oyster (*Ostrea edulis*) of which the DNA was sequenced (AG_10298).

5.4.14 Clynagh, Cashla Bay

Co. Galway

Survey no. 67	Field code: MIO134 Timed Survey
Location	Clynagh
Bay name	Cashla Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (30%)	Boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (40%)	Mud
Presence oyster culture	Absent
Presence artificial structures	Yes (stone bridge)
Date and time survey	27-7-2025 11:56
Time searched	00:30
Minutes to low tide	89 min. (before low tide)
GPS start	N53 17.260 W9 33.565
GPS end	N53 17.299 W9 33.444
Distance searched	523 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 193. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders on mud.



Fig. 194. Survey track (blue line). No feral Pacific oysters were found.

5.4.15 Spiddal Pier, Galway Bay

Co. Galway

Survey no. 68	Field code: MIO133 Timed Survey
Location	Spiddal Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	100-150 m
Hard substrate (70%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Far (20.8 km)
Presence artificial structures	Yes (pier)
Date and time survey	27-7-2025 14:43
Time searched	00:36
Minutes to low tide	63 min. (after low tide)
GPS start	N53 14.469 W9 18.555
GPS end	N53 14.506 W9 18.367
Distance searched	668 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 195. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock and boulders.

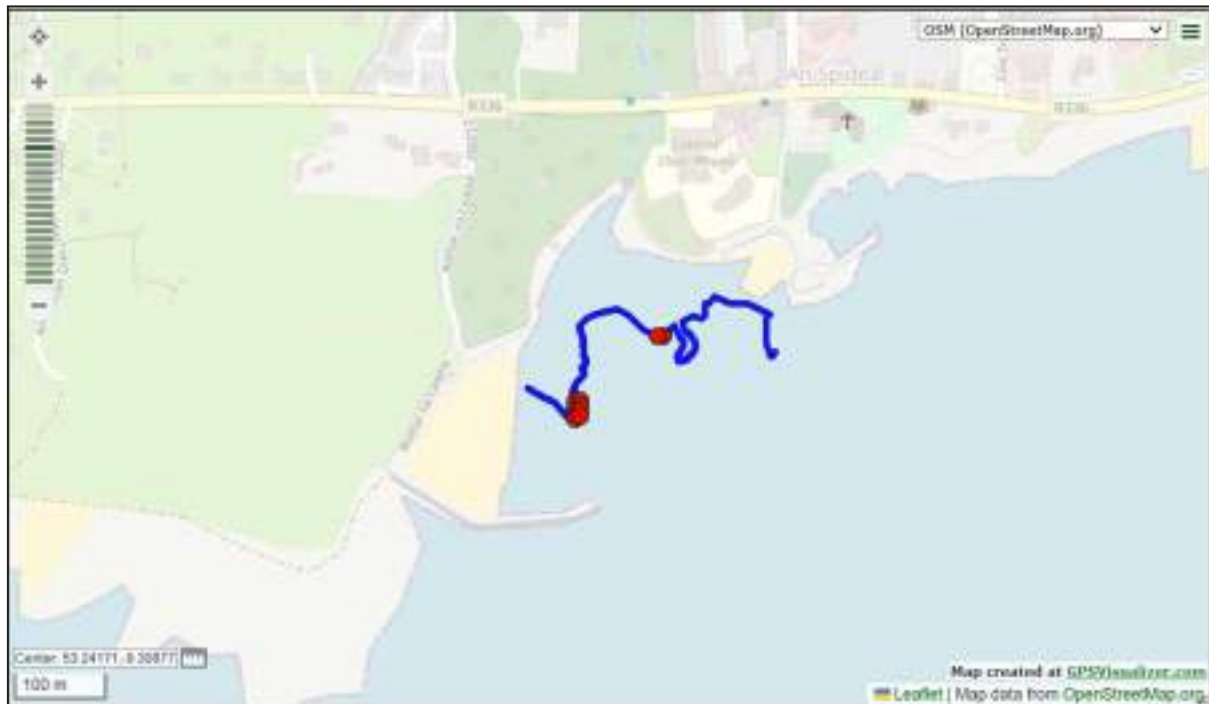


Fig. 196. Survey track (blue line). Ten feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 197. Feral Pacific oyster, settled on bedrock.

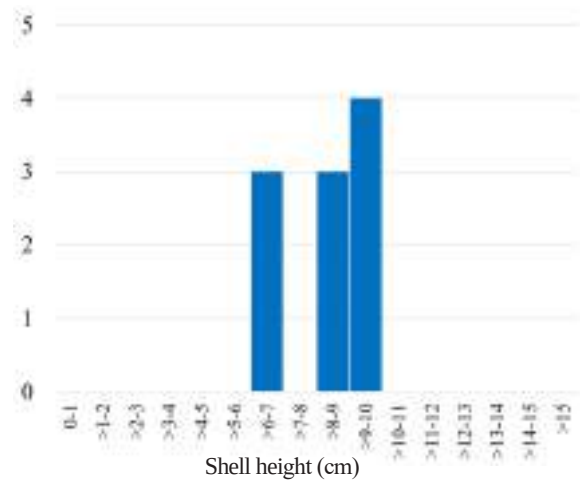


Fig. 198. Size-frequencies of Pacific oysters in 1 cm size intervals (n=10).

Molecular analyses	16S sequence: AG_10293 (GenBank nr: PX583004); AG_10296 (GenBank nr: PX583005); AG_10297 (GenBank nr: PX583006); HRM typing: AG_10294 / AG_10295		
<i>M. gigas</i> oysters measured	10		
Minimum / maximum size (mm)	66 mm - 97 mm		
Density in complete track (668 m)	0.015 /m ² (n=8)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.267/ m ² (n=8)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	8
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					10
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.4.16 Gurrane South, Galway Bay

Co. Galway

Survey no. 69	Field code: MIO127 Timed Survey
Location	Gurrane South
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (40%)	Boulders
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (40%)	Mud
Presence oyster culture	Far (8 km)
Presence artificial structures	No
Date and time survey	26-7-2025 14:24
Time searched	00:15
Minutes to low tide	94 min. (after low tide)
GPS start	N53 16.281 W8 56.670
GPS end	N53 16.329 W8 56.846
Distance searched	721 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	
One flat oyster was found. The DNA was sequenced (AG_10283).	



Fig. 199. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders on mud overgrown by seaweeds.



Fig. 200. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 201. Feral Pacific oyster, loose on the substrate.



Fig. 202. Flat oyster, loose on the substrate.

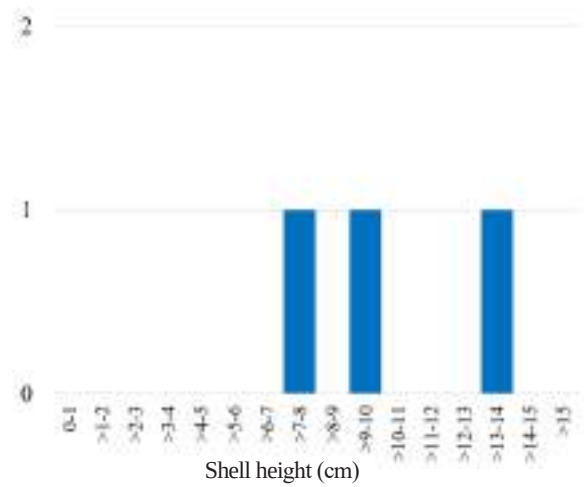


Fig. 203. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	16S sequence: AG_10282 (GenBank nr: PX582999); HRM typing: AG_10280 / AG_10281		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	70 mm - 135 mm		
Density in complete track (721 m)	0.004 /m ² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Other shell (<i>Mytilus edulis</i>)	fixed	mud	loose	no	1
sand	loose	n.a.	loose	no	2
Total number of oysters:					3
Total number of “whole structure loose” oysters:					3
Total number of “loose” oysters with seaweed (>5cm)					0

5.4.17 West of the Galway Sailing Club Pier, Galway Bay

Co. Galway

Survey no. 70	Field code: MIO121 Timed Survey
Location	West of the Galway Sailing Club Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (50%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Far (6.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	25-7-2025 12:15
Time searched	00:33
Minutes to low tide	15 min. (after low tide)
GPS start	N53 14.631 W8 57.702
GPS end	N53 14.700 W8 57.903
Distance searched	467 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Nine flat oysters (<i>Ostrea edulis</i>) were found. The DNA of tree specimens was sequenced (AG_10274/ AG_10275/ AG_10276).

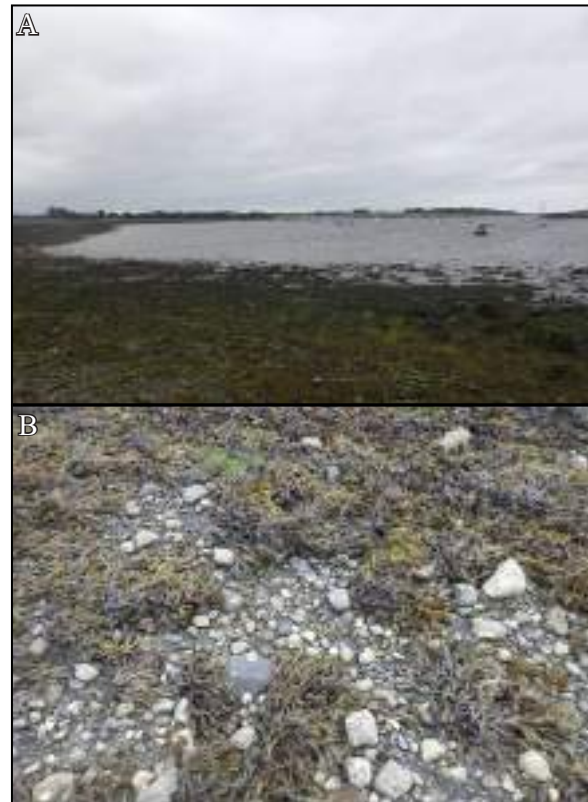


Fig. 204. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown with seaweeds.

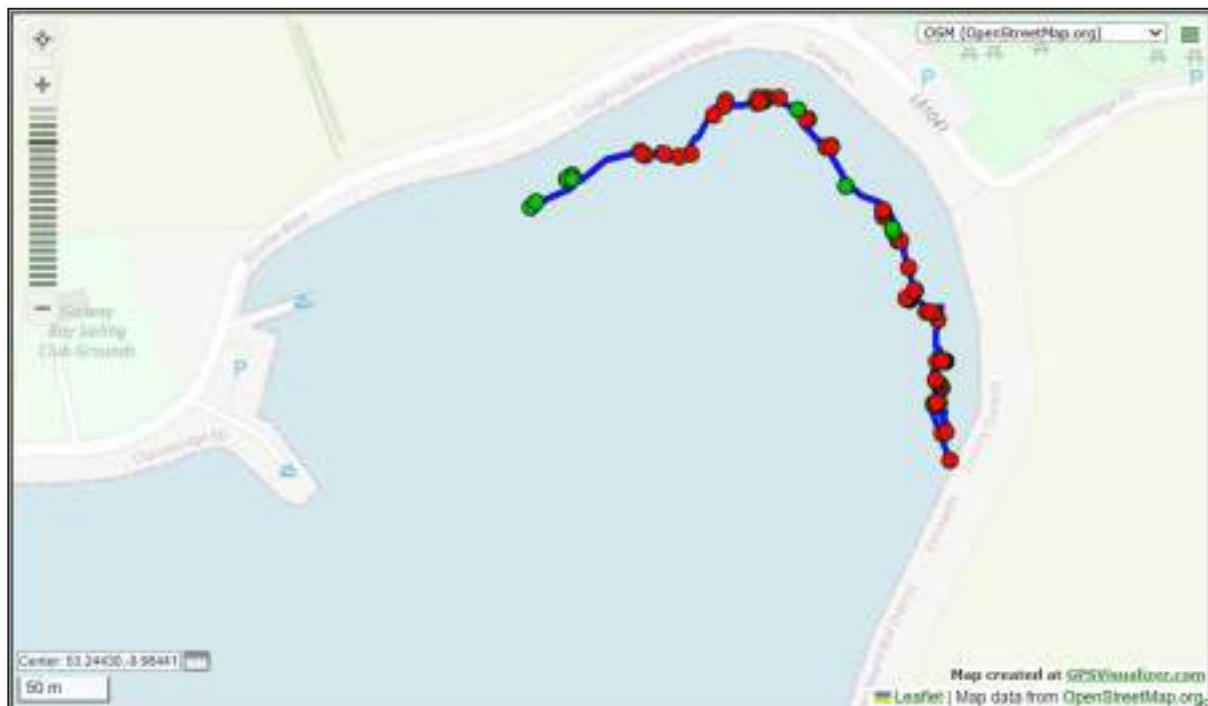


Fig. 205. Survey track (blue line). 71 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Nine flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 206. Feral Pacific oyster, settled on another Pacific oyster, settled on a pebble with macro algae attached.

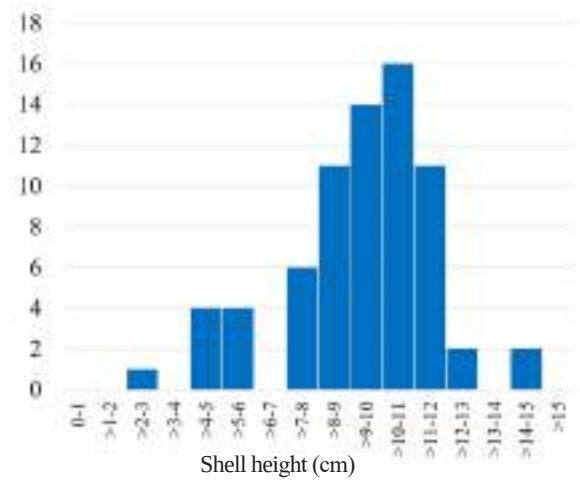


Fig. 207. Size-frequencies of Pacific oysters in 1 cm size intervals (n=71).

Molecular analyses	HRM typing: AG_10266		
<i>M. gigas</i> oysters measured	71		
Minimum / maximum size (mm)	29 mm - 143 mm		
Density in complete track (467 m)	0.152 /m ² (n=71)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	0.667/m ² (n=20)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	1.600 /m ² (n=8)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	47
Pacific oyster	fixed	boulder	fixed	n.a.	6
Artificial structure (tire)	fixed	n.a.	fixed	n.a.	2
Shell (<i>Mytilus edulis</i>)	fixed	n.a.	loose	yes (<i>F. vesiculosus</i>)	1
Pacific oyster	fixed	shell (<i>M. edulis</i>)	loose	yes (<i>F. vesiculosus</i>)	1
Pebble	fixed	n.a.	loose	no	4
				yes (<i>F. vesiculosus</i>)	2
Pacific oyster	fixed	pebbles	loose	yes (<i>F. vesiculosus</i>)	1
Sand	loose	n.a.	loose	no	7
Total number of oysters:					71
Total number of "whole structure loose" oysters:					16
Total number of "loose" oysters with seaweed (>5cm)					5

5.4.18 Galway Sailing Club Pier, Galway Bay

Co. Galway

Survey no. 71	Field code: MIO123 Distinct Habitat Survey
Location	Galway Sailing Club Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (90%)	Artificial structure (concrete pier)
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Far (6.5 km)
Presence artificial structures	Yes (concrete pier)
Date and time survey	25-7-2025 12:52
Time searched	00:18
Minutes to low tide	52 min. (after low tide)
GPS start	N53 14.636 W8 58.020
GPS end	n.a.
Distance searched	6 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	Intertidal zone of the wall of a pier. Location bordering timed survey no. 70.



Fig. 208 Distinct habitat survey: large red dot. Smaller dots and line concern bordering survey no. 70.



Fig. 209. General habitat: Concrete pier.



Fig. 210 Pacific oysters attached to the concrete wall of the pier, and loose on the substrate below .



Fig. 211. Feral Pacific oysters on the pier wall.

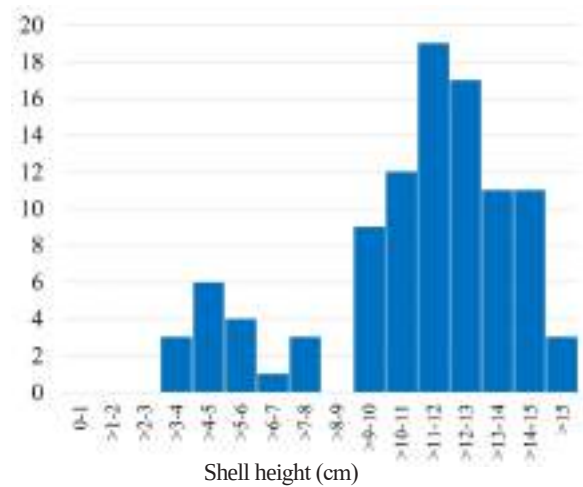


Fig. 212. Size-frequencies of Pacific oysters in 1 cm size intervals (n=99).

Molecular analyses	Sequences available from bordering survey no. 70.		
<i>M. gigas</i> oysters measured	99		
Minimum / maximum size (mm)	31 mm - 155 mm		
Density in distinct habitat survey (6 m)	16.50 m ² (n=99)	Abundant	Counted in field
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	16.20 /m ² (n=81)	Abundant	Counted in field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (concrete pier)	fixed	n.a.	fixed	n.a.	92
Pacific oyster	fixed	artificial structure (concrete pier)	fixed	n.a.	3
Sand	loose	n.a.	loose	no	4
Total number of oysters:					99
Total number of "whole structure loose" oysters:					4
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.19 West of Ballinacourty Pier, Galway Bay

Co. Galway

Survey no. 72	Field code: MIO119 Timed Survey
Location	West of Ballinacourty Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (70%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (0.9 km)
Presence artificial structures	Yes (pier)
Date and time survey	25-7-2025 10:38
Time searched	00:42
Minutes to low tide	40 min. (before low tide)
GPS start	N53 12.605 W8 57.479
GPS end	N53 12.505 W8 57.140
Distance searched	540 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 213. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 214. Survey track (blue line). 63 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 215. Feral Pacific oysters, settled on a boulder.

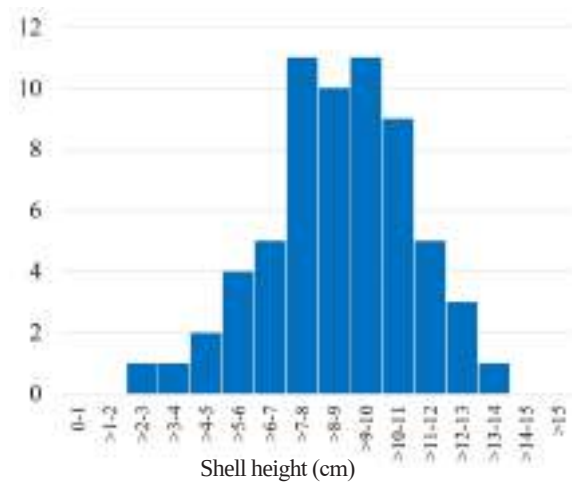


Fig. 216. Size-frequencies of Pacific oysters in 1 cm size intervals (n=63).

Molecular analyses	16S sequence: AG_10269 (GenBank nr: PX58996); AG_10270 (GenBank nr: PX58997) HRM typing: AG_10267-AG_10268 / AG_10271-AG_10273		
<i>M. gigas</i> oysters measured	63		
Minimum / maximum size (mm)	21 mm - 140 mm		
Density in complete track (540 m)	0.117 /m ² (n=63)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	0.600/m ² (n=18)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	1.800 /m ² (n=9)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	62
Pebble	fixed	n.a.	loose	no	1
Total number of oysters:					63
Total number of "whole structure loose" oysters:					1
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.20 Ballinacourty Pier, Galway Bay

Co. Galway

Survey no. 73	Field code: MIO122 Distinct Habitat Survey
Location	Ballinacourty Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (90%)	Artificial structure (concrete pier)
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (1.2 km)
Presence artificial structures	Yes (pier)
Date and time survey	25-7-2025 11:44
Time searched	00:12
Minutes to low tide	4 min. (before low tide)
GPS start	N53 12.505 W8 57.140
GPS end	n.a.
Distance searched	6 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone of the wall of a pier. Location bordering timed survey no. 72.	



Fig. 217 Distinct habitat survey: large red dot. Smaller red dots and line concern bordering survey no. 72.



Fig. 218. General habitat: Concrete pier.



Fig. 219 Pier wall with Pacific oysters.



Fig. 220. Oysters on the pier wall.

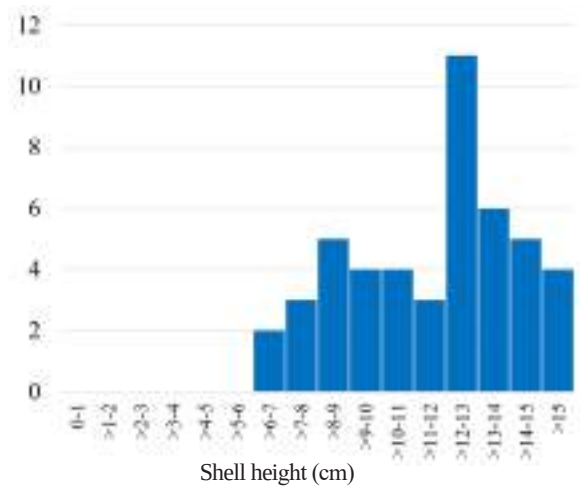


Fig. 221. Size-frequencies of Pacific oysters in 1 cm size intervals (n=47).

Molecular analyses	Sequences available from bordering survey no. 72.		
<i>M. gigas</i> oysters measured	47		
Minimum / maximum size (mm)	61 mm - 198 mm		
Density in distinct habitat survey (6 m)	7.83 m ² (n=47)	Common	Counted from photos
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	9.00 /m ² (n=46)	Common	Counted from photos
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (concrete pier)	fixed	n.a.	fixed	n.a.	47
Total number of oysters:					47
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.4.21 Killearnan Pier, Galway Bay

Co. Galway

Survey no. 74	Field code: MIO120 Timed Survey and Transects
Location	Killearnan Pier
Bay name	Galway Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (50%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (30 m)
Presence artificial structures	Yes (pier and trestles)
Date and time survey	25-7-2025 11:03
Time searched	00:30
Minutes to low tide	29 min. (before low tide)
GPS start	N53 11.811 W8 56.641
GPS end	N53 11.903 W8 56.343
Distance searched	539 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-

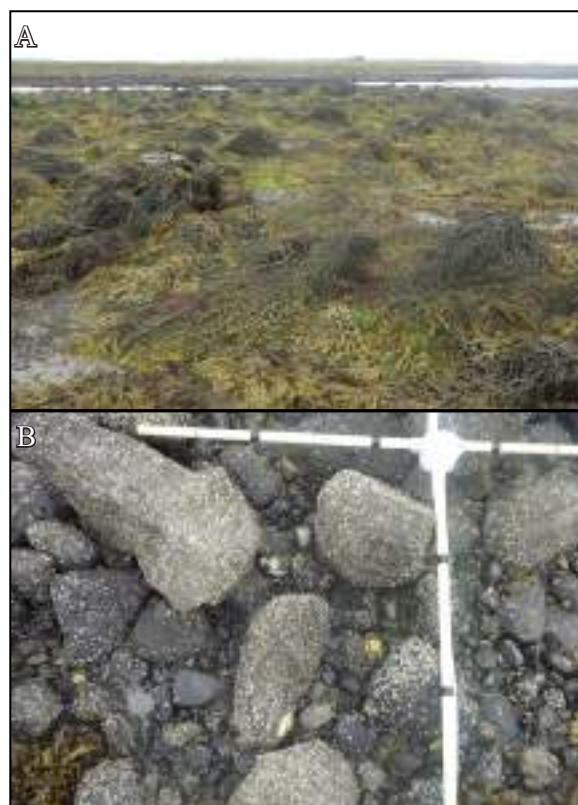


Fig. 222. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown by seaweeds.



Fig. 223. Survey track (blue line). A total of 107 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Additionally, oysters were counted within the two marked 30-meter transects.



Fig. 224. Feral Pacific oyster, settled on a boulder.

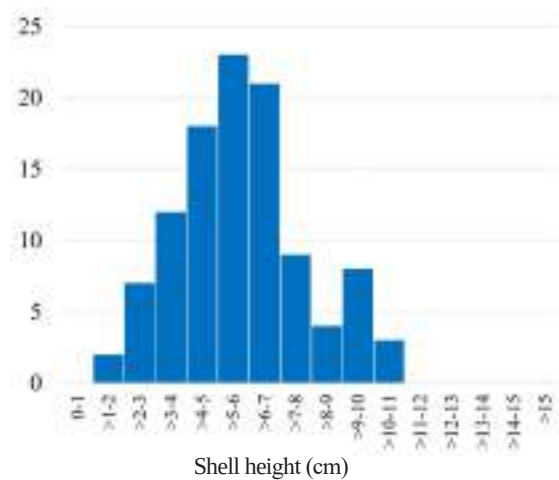


Fig. 225. Size-frequencies of Pacific oysters in 1 cm size intervals (n=107).

Molecular analyses	16S sequence: AG_10263 (GenBank nr: PX582995); HRM typing: AG_10262 / AG_10264-10265		
<i>M. gigas</i> oysters measured	107		
Minimum / maximum size (mm)	14 mm - 105 mm		
Density in complete track (539 m)	0.199 /m ² (n=107)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	1.167 /m ² (n=35)	Common	In 30 m transect
Highest density in 5 continuous meters	6.000 /m ² (n=30)	Common	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	96
Pacific oyster	fixed	boulder	fixed	n.a.	2
Pebble	fixed	pebbles	loose	no	8
Pacific oyster	fixed	pebbles	loose	no	1
Total number of oysters:					107
Total number of "whole structure loose" oysters:					9
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.22 East of Crushoa Pier, Kinvarra Bay

Co. Galway

Survey no. 75	Field code: MIO124 Timed Survey
Location	East of Crushoa Pier
Bay name	Kinvarra Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (10%)	Boulders
Macro algae (70%)	<i>Ascophyllum nodosum</i>
Soft substrate (20%)	Sand
Presence oyster culture	Far (5.3 km)
Presence artificial structures	Yes (pier)
Date and time survey	26-7-2025 11:01
Time searched	00:30
Minutes to low tide	79 min. (before low tide)
GPS start	N53 09.239 W8 57.189
GPS end	N53 09.306 W8 57.233
Distance searched	371 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 226. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown with seaweeds.

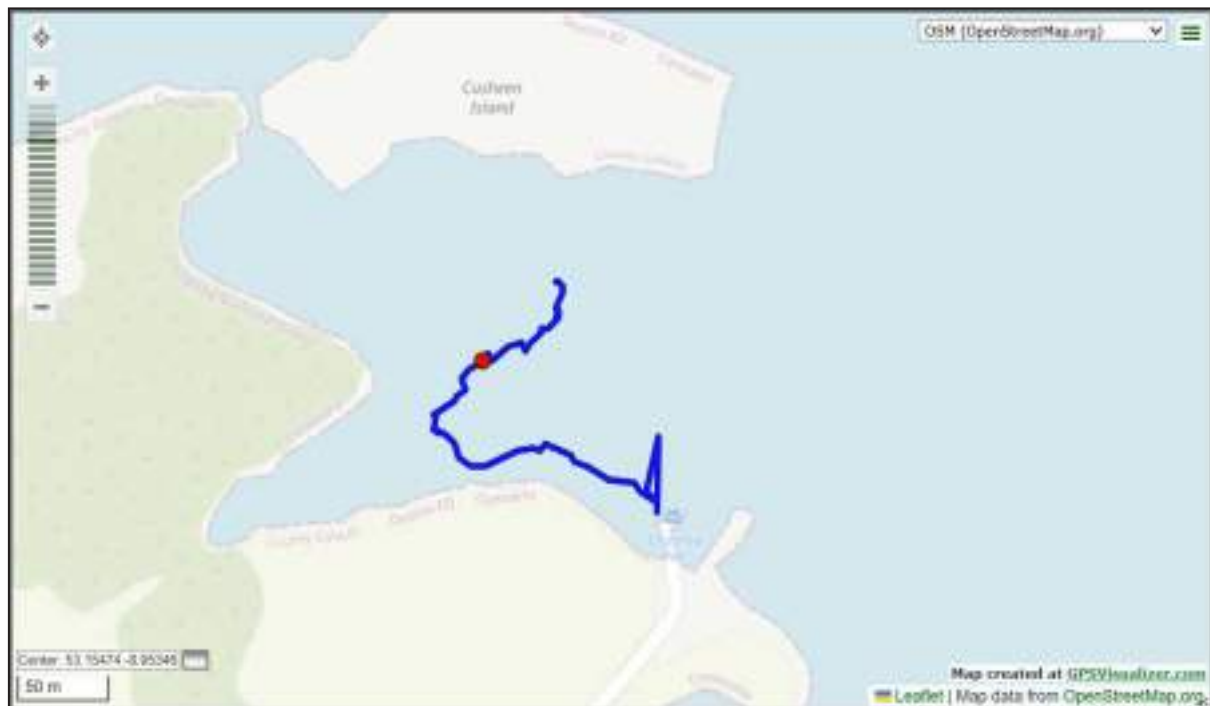


Fig. 227. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 228. Feral Pacific oyster, settled on a boulder.

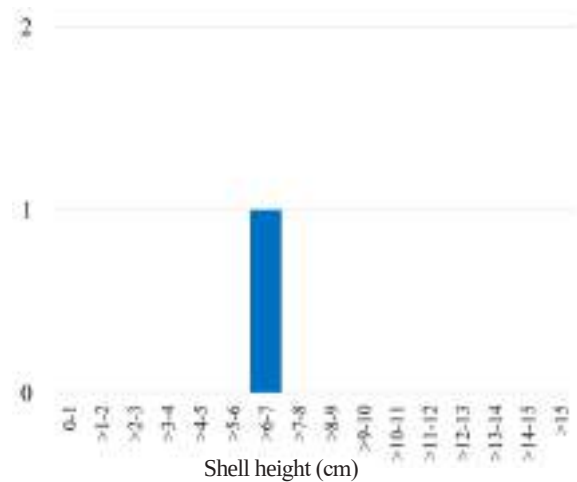


Fig. 229. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	HRM typing: AG_10277		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	63 mm		
Density in complete track (371 m)	0.003 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.23 Crushoa Pier, Kinvarra Bay

Co. Galway

Survey no. 76	Field code: MIO125 Distinct Habitat Survey
Location	Crushoa Pier
Bay name	Kinvarra Bay
Bay residence time (days)	25.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (90%)	Artificial structure (stone building blocks)
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (5.4 km)
Presence artificial structures	Yes (pier)
Date and time survey	26-7-2025 11:50
Time searched	00:20
Minutes to low tide	54 min. (before low tide)
GPS start	N53 09.242 W8 57.171
GPS end	n.a.
Distance searched	9 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone of the wall of a pier. Location bordering timed survey no. 75.	



Fig. 230 Distinct habitat survey: large red dot. Smaller red dots and line concern bordering survey no. 75.



Fig. 231. General habitat: Stone pier.



Fig. 232. Pacific oysters on the stone building blocks of the pier.



Fig. 233. Feral Pacific oysters, settled on top of each other and on the pier wall.

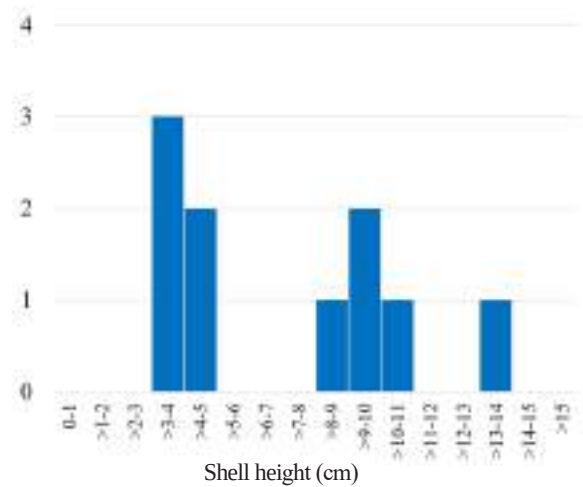


Fig. 234. Size-frequencies of Pacific oysters in 1 cm size intervals (n=10).

Molecular analyses	Sequences available from bordering survey no. 75.		
<i>M. gigas</i> oysters measured	10		
Minimum / maximum size (mm)	31 mm - 135 mm		
Density in distinct habitat survey (9 m)	1.11 m ² (n=10)	Common	Counted in the field
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	2.00 /m ² (n=10)	Common	Counted in the field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (stone pier)	fixed	n.a.	fixed	n.a.	9
Pacific oyster	fixed	artificial structure (stone pier)	fixed	n.a.	1
Total number of oysters:					10
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.24 South of Parkmore Pier, Galway Bay

Co. Galway

Survey no. 77	Field code: MIO131 Timed Survey
Location	South of Parkmore Pier
Bay name	Galway Bay
Bay residence time (days)	20.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (30%)	Boulders
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (3.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	26-7-2025 11:17
Time searched	00:31
Minutes to low tide	62 min. (before low tide)
GPS start	N53 10.281 W8 58.071
GPS end	N53 10.076 W8 57.935
Distance searched	565 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	One flat oyster was found. The DNA was sequenced (AG_10290).



Fig. 235. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by seaweeds.



Fig. 236. Survey track (blue line). 21 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 237. Two feral Pacific oysters, settled on a boulder.



Fig. 238. A flat oyster (AG_10290), settled on a boulder.

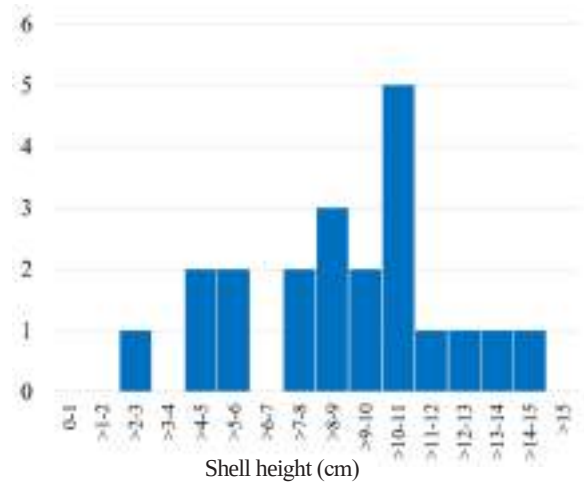


Fig. 239. Size-frequencies of Pacific oysters in 1 cm size intervals (n=21).

Molecular analyses	16S sequence: AG_10289 (GenBank nr: PX583001); AG_10291 (GenBank nr: PX583002); AG_10292 (GenBank nr: PX583003)		
<i>M. gigas</i> oysters measured	21		
Minimum / maximum size (mm)	27 mm - 141 mm		
Density in complete track (565 m)	0.037 /m ² (n=21)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.167 /m ² (n=5)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	21
Total number of oysters:					21
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.4.25 Parkmore Pier, Galway Bay

Co. Galway

Survey no. 78	Field code: MIO132 Distinct Habitat Survey
Location	Parkmore Pier
Bay name	Galway Bay
Bay residence time (days)	20.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (90%)	Artificial structure (stone building blocks)
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (3.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	26-7-2025 11:50
Time searched	00:14
Minutes to low tide	46 min. (before low tide)
GPS start	N53 10.291 W8 58.089
GPS end	n.a.
Distance searched	6 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone of the wall of a pier. Location bordering timed survey no. 77.	



Fig. 240 Distinct habitat survey: large red dot. Smaller red dots and line concern bordering survey no. 77.



Fig. 241. General habitat: Pier made with stone blocks.



Fig. 242 Pier wall with feral Pacific oysters.



Fig. 243. Feral Pacific oysters, settled on top of each other on the stone wall.

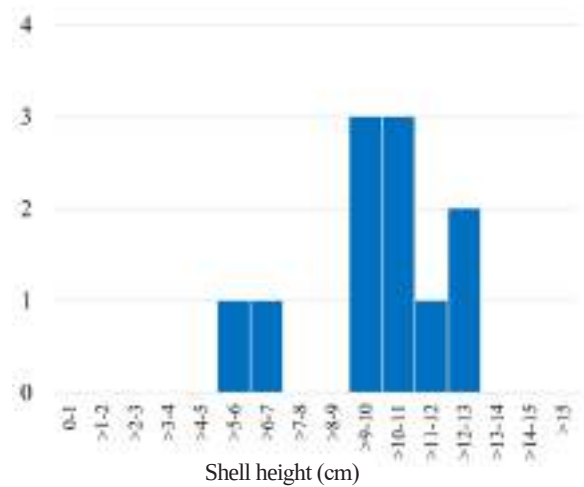


Fig. 244. Size-frequencies of Pacific oysters in 1 cm size intervals (n=11).

Molecular analyses	Sequences available from bordering survey no. 77.		
<i>M. gigas</i> oysters measured	11		
Minimum / maximum size (mm)	57 mm - 127 mm		
Density in distinct habitat survey (6 m)	1.83 m ² (n=11)	Common	Counted in the field
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	2.20 /m ² (n=11)	Common	Counted in the field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (stone pier)	fixed	n.a.	fixed	n.a.	10
Pacific oyster	fixed	artificial structure (stone pier)	fixed	n.a.	1
Total number of oysters:					11
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.5 County Clare

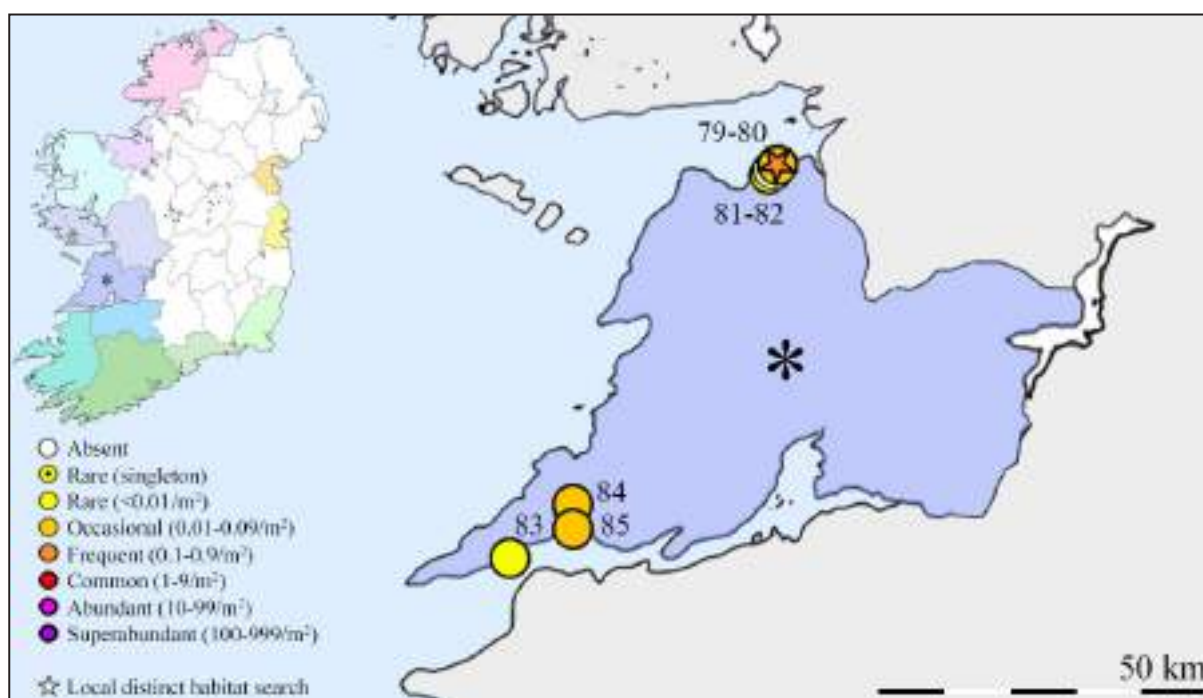


Fig. 245. Surveys in County Clare

Between 2024 and 2025, 7 surveys were carried out in Co. Clare, during which 4 km of the shoreline was searched (Fig. 245). The presence of feral oysters was recorded during 4 of these surveys. The highest abundance, occasional ($0.01-0.09$ oysters/ m^2) on the SACFOR scale (Table 2), was recorded in the timed surveys 79 (in Aughinis Bay, bordering Galway Bay), 84 and 85 (Shannon Estuary). Surveys 79 and 80 (New Qua Pier, Aughinis Bay) again highlight a situation where feral oysters were noticeably more abundant on the pier (frequent, i.e., $0.01-0.09$ oysters/ m^2) than in the surrounding environment (occasional, i.e., $0.01-0.09$ oysters/ m^2). Kochmann *et al.* (2013) also carried out searches in 2009 at the three sites in the west of Shannon Estuary where feral oysters were recorded during the 2024 and 2025 surveys (surveys 83-85), but they did not find any oysters. It is uncertain when they have been established there, but it is evident that the now established oysters are reproducing. For example, during survey 85 in Poulmasherry Bay, the shell size of the 9 oysters found varied from 5 to 14 cm (Fig. 272). This proves that the oysters were of different ages, reflecting multiple spawning occurrences.

5.5.1 West of New Quay Pier, Aughinis Bay

Co. Clare

Survey no. 79	Field code: MIO129 Timed Survey
Location	West of New Quay Pier
Bay name	Aughinis Bay
Bay residence time (days)	20.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (pier, trestles)
Date and time survey	26-7-2025 13:02
Time searched	00:31
Minutes to low tide	12 min. (after low tide)
GPS start	N53 09.373 W9 04.550
GPS end	N53 09.385 W9 04.305
Distance searched	364 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Three flat oysters were found.



Fig. 246. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown by seaweeds.



Fig. 247. Survey track (blue line). Seven feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Three flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 248. Feral Pacific oysters, settled on a boulder.

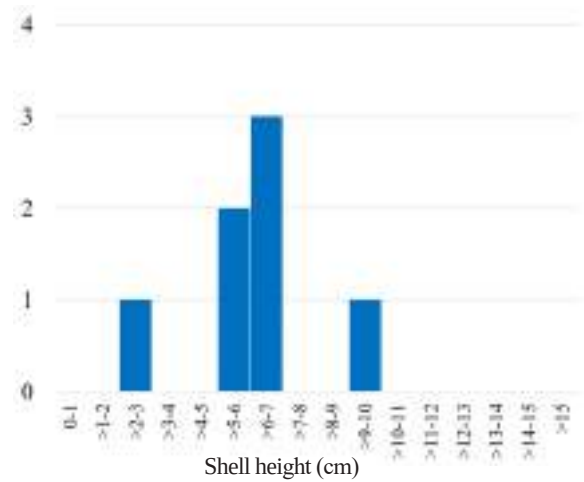


Fig. 249. Size-frequencies of Pacific oysters in 1 cm size intervals (n=7).

Molecular analyses	Sequences available from bordering survey no. 80.		
<i>M. gigas</i> oysters measured	7		
Minimum / maximum size (mm)	28 mm - 100 mm		
Density in complete track (364 m)	0.019/m ² (n=7)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.233/m ² (n=7)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.800 /m ² (n=4)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	4
Pacific oyster	fixed	sand	loose	no	3
Total number of oysters:					7
Total number of “whole structure loose” oysters:					3
Total number of “loose” oysters with seaweed (>5cm)					0

5.5.2 New Quay Pier, Aughinis Bay

Co. Clare

Survey no. 80	Field code: MIO128 Distinct Habitat Survey
Location	New Quay Pier
Bay name	Aughinis Bay
Bay residence time (days)	20.42 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (90%)	Artificial structure (stone building blocks)
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (70 m)
Presence artifical structures	Yes (pier)
Date and time survey	26-7-2025 12:40
Time searched	00:12
Minutes to low tide	0 min. (during low tide)
GPS start	N53 09.371 W9 04.549
GPS end	n.a.
Distance searched	10 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	
Intertidal zone of the wall of a pier. Location bordering timed survey no. 79. Seven flat oysters were found attatched to the pier (AG_10286 / AG_10287, GenBank nr: PX462780 / / AG_10288	



Fig. 250 Distinct habitat survey: large dot. Smaller dots and line concern bordering survey no. 79.



Fig. 251. General habitat: Pier made with stone blocks.



Fig. 252 Pier wall with [A] a Pacific oyster (AG_10288) and [B] flat oyster (AG_10286).



Fig. 253 Pier wall with feral Pacific oysters.

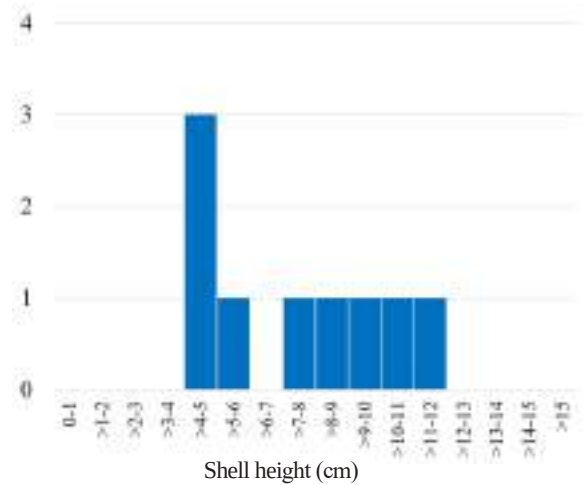


Fig. 254. Size-frequencies of Pacific oysters in 1 cm size intervals (n=9).

Molecular analyses	16S sequence: AG_10285 (GenBank nr: PX583000); HRM typing: AG_10284		
<i>M. gigas</i> oysters measured	9		
Minimum / maximum size (mm)	45 mm - 119 mm		
Density in distinct habitat survey (10 m)	0.90 m ² (n=9)	Frequent	Counted in the field
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	1.80 /m ² (n=9)	Common	Counted in the field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (stone pier)	fixed	n.a.	fixed	n.a.	9
Total number of oysters:					9
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.5.3 Finnavara demesne, Poul-na-clough Bay

Co. Clare

Survey no. 81	Field code: MIO126 Timed Survey
Location	Finnavara demesne
Bay name	Poul-na-clough Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (30%)	Bedrock and boulders
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand with shells and pebbles
Presence oyster culture	Far (1 km)
Presence artificial structures	Yes (pier)
Date and time survey	26-7-2025 12:47
Time searched	00:33
Minutes to low tide	0 min. (during low tide)
GPS start	N53 08.818 W9 05.638
GPS end	N53 08.764 W9 05.322
Distance searched	634 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 255. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by seaweeds.

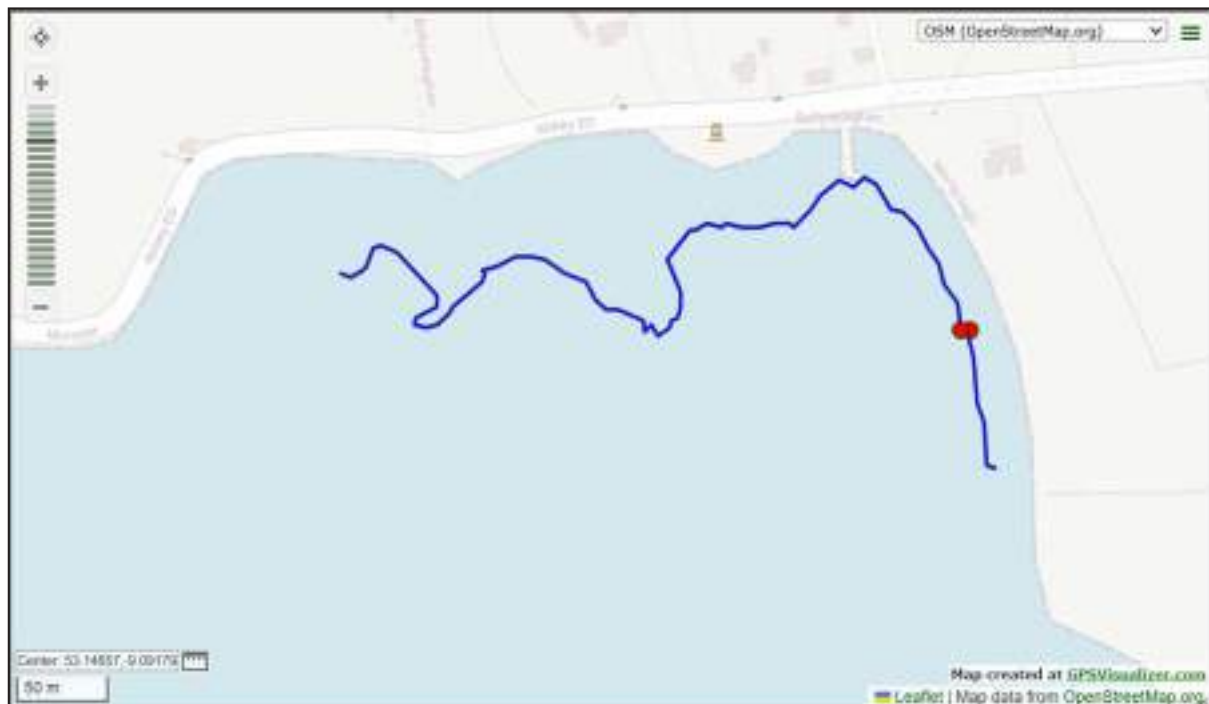


Fig. 256. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 257. Feral Pacific oyster, settled on a boulder.

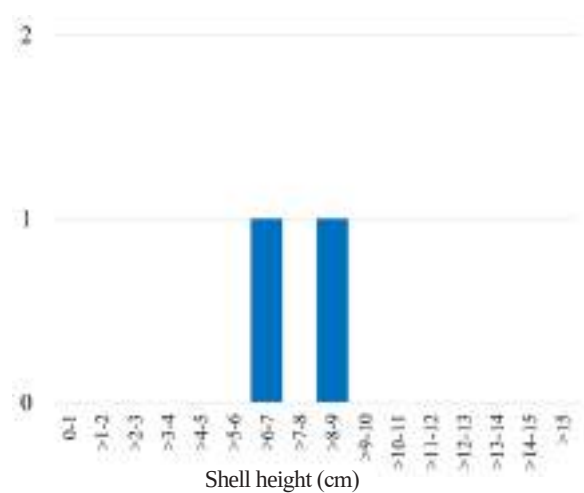


Fig. 258. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_10278 (GenBank nr: PX582998); HRM typing: AG_10279		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	64 mm - 85 mm		
Density in complete track (634 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.5.4 Scanlan's Island, Poul-na-clough Bay

Co. Clare

Survey no. 82	Field code: MIO130 Timed Survey
Location	Scanlan's Island
Bay name	Poul-na-clough Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (40%)	Sand
Presence oyster culture	Far (1 km)
Presence artificial structures	Yes (stone bridge)
Date and time survey	26-7-2025 12:50
Time searched	00:34
Minutes to low tide	0 min. (during low tide)
GPS start	N53 08.903 W9 06.536
GPS end	N53 08.725 W9 06.458
Distance searched	732 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster was found loose on the sand.	



Fig. 259. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders overgrown by seaweeds and those consisting predominantly of sand. One *O.edulis* was found.



Fig. 260. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

5.5.5 Kilcredaun Fort, Shannon Estuary

Co. Clare

Survey no. 83	Field code: MIO049 Timed Survey
Location	Kilcredaun Fort
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann et al., 2013)
Width of intertidal shore	100-150 m
Hard substrate (90%)	Boulders and pebbles
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Closeby (50 m)
Presence artificial structures	Yes (trestles)
Date and time survey	26-7-2024 14:43
Time searched	00:30
Minutes to low tide	17 min. (before low tide)
GPS start	N52 35.296 W9 42.275
GPS end	N52 35.201 W9 41.981
Distance searched	504 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 261. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown by seaweeds.

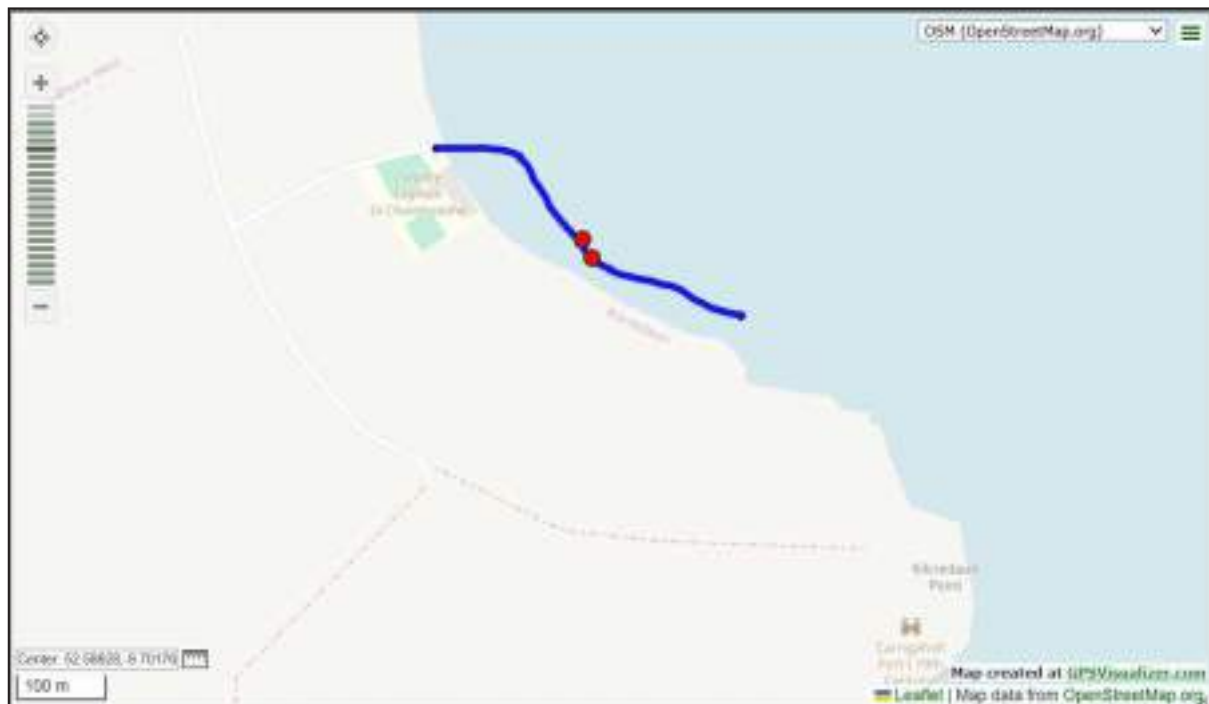


Fig. 262. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 263. Feral Pacific oyster, settled on a boulder.

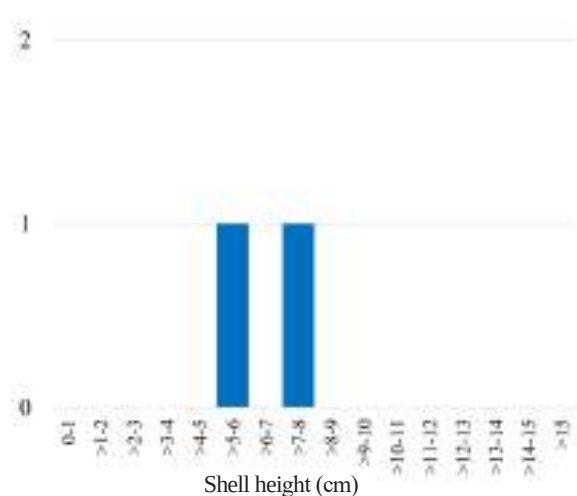


Fig. 264 Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9106 (GenBank nr: PX149993); HRM typing: AG_9107		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	55 mm - 79 mm		
Density in complete track (504 m)	0.004 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.5.6 Cammoge Beach, Shannon Estuary

Co. Clare

Survey no. 84	Field code: MIO051 Timed Survey
Location	Cammoge Beach
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann et al., 2013)
Width of intertidal shore	50-100 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (30%)	Sand
Presence oyster culture	Far (800 m)
Presence artificial structures	No
Date and time survey	26-7-2024 15:47
Time searched	00:48
Minutes to low tide	0 min. (during low tide)
GPS start	N52 38.268 W9 33.009
GPS end	N52 38.166 W9 33.135
Distance searched	798 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 265. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and those consisting predominantly of sand.



Fig. 266. Survey track (blue line). Fourteen feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 267. Feral Pacific oyster, settled on a boulder.

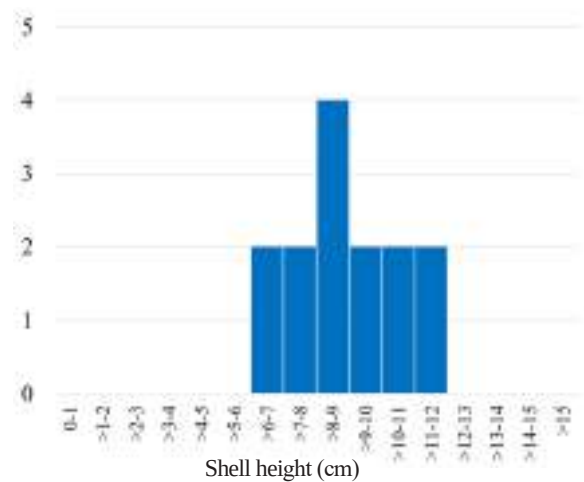


Fig. 268. Size-frequencies of Pacific oysters in 1 cm size intervals (n=14).

Molecular analyses	16S sequence: AG_9116 (GenBank nr: PX149996); HRM typing: AG_9115		
<i>M. gigas</i> oysters measured	14		
Minimum / maximum size (mm)	63 mm - 116 mm		
Density in complete track (798 m)	0.018/m ² (n=14)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.300/m ² (n=9)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	13
Oyster shell	fixed	sand	loose	no	1
Total number of oysters:					14
Total number of "whole structure loose" oysters:					1
Total number of "loose" oysters with seaweed (>5cm)					0

5.5.7 Poulnisherry Bay, Shannon Estuary

Co. Clare

Survey no. 85	Field code: MIO050 Timed Survey
Location	Poulnisherry Bay
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann et al., 2013)
Width of intertidal shore	>150 m
Hard substrate (50%)	Pebbles and boulders
Macro algae (40%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (800 m)
Presence artificial structures	No
Date and time survey	26-7-2024 16:00
Time searched	00:34
Minutes to low tide	0 min. (during low tide)
GPS start	N52 39.890 W9 33.537
GPS end	N52 39.898 W9 33.800
Distance searched	533 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 269. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown by seaweeds.



Fig. 270. Survey track (blue line). Nine feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 271. Feral Pacific oyster, attached to a pebble with large seaweeds.

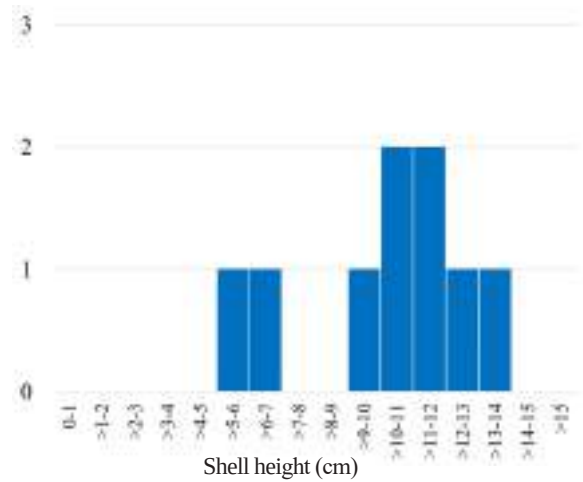


Fig. 272. Size-frequencies of Pacific oysters in 1 cm size intervals (n=9).

Molecular analyses	16S sequence: AG_9108 (GenBank nr: PX149994); AG_9112 (GenBank nr: PX149995); HRM typing: AG_9109-9111 / AG_9113-9114		
<i>M. gigas</i> oysters measured	9		
Minimum / maximum size (mm)	56 mm - 139 mm		
Density in complete track (533 m)	0.013/m ² (n=9)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.133/m ² (n=4)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	6
Pebble	fixed	sand	loose	Yes (<i>F. vesiculosus</i>)	2
Sand	loose	n.a.	loose	no	1
Total number of oysters:					9
Total number of "whole structure loose" oysters:					3
Total number of "loose" oysters with seaweed (>5cm)					2

5.6 County Limerick



Fig. 273. Surveys in County Limerick

Between 2024 and 2025, 2 surveys were carried out in Co. Limerick, during which just over a kilometre of the shoreline was searched (Fig. 273). Both surveys indicated that feral oysters were common (1-9 oysters/m²). In 2009, Kochmann *et al.* (2013) also documented the settlement of feral oysters in the same two locations, but their presence was less common, scoring a “frequent” abundance (0.1-0.9 oysters/m²). Between 2012 and 2013, Zwerksche *et al.* (2017) had already documented a population increase to “common” (1-9 oysters/m²) at both sites. Up to 2024 and 2025, it would seem that not a lot has changed then. It is a general observation regarding the population in Shannon Estuary, which becomes clearer when the three sites in Co. Clare and two sites in Co. Kerry are also considered (Fig. 282), that oyster abundances increase as you move further inland.

5.6.1 Mounttrenchard Beach, Shannon Estuary

Co. Limerick

Survey no. 86	Field code: MIO052 Timed Survey and Transects
Location	Mounttrenchard Beach
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (80%)	Boulders and pebbles
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Mud
Presence oyster culture	Far (28.4 km)
Presence artificial structures	No
Date and time survey	27-7-2024 14:52
Time searched	00:46
Minutes to low tide	72 min. (before low tide)
GPS start	N52 36.404 W9 09.033
GPS end	N52 36.623 W9 08.539
Distance searched	833 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 274. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 275. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects.



Fig. 276. Feral Pacific oyster, settled on a boulder.

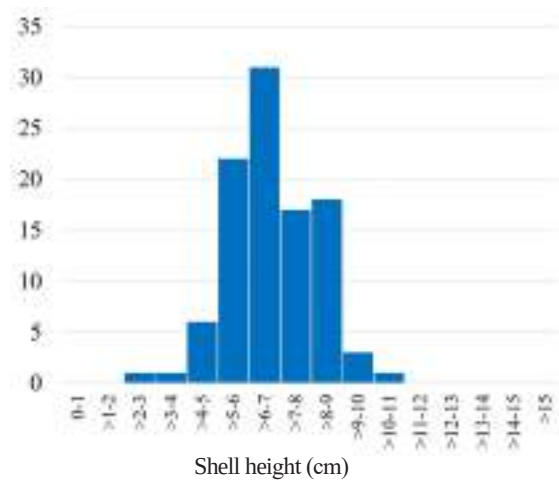


Fig. 277. Size-frequencies of Pacific oysters in 1 cm size intervals (n=100).

Molecular analyses	16S sequence: AG_9125 (GenBank nr: PX149997); HRM typing: AG_9122-9124 / AG_9126		
<i>M. gigas</i> oysters measured	100		
Minimum / maximum size (mm)	30 mm - 104 mm		
Density in complete track (833 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	9.233 /m ² (n=277)	Common	In 30 m transect
Highest density in 5 continuous meters	16.80 /m ² (n=84)	Abundant	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	100
Total number of oysters:					100
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.6.2 Killacolla Cross Beach, Shannon Estuary

Co. Limerick

Survey no. 87	Field code: MIO053 Timed survey and transects
Location	Killacolla Cross Beach
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp. and <i>Ascophyllum nodosum</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (21.3 km)
Presence artificial structures	No
Date and time survey	27-7-2024 14:52
Time searched	48 minutes
Minutes to low tide	70 min. (before low tide)
GPS start	N52 35.249 W9 14.999
GPS end	N52 35.351 W9 14.687
Distance searched	476 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 278. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by seaweeds.



Fig. 279. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects.



Fig. 280. Feral Pacific oyster, settled on top of another oyster, which is settled on a boulder.

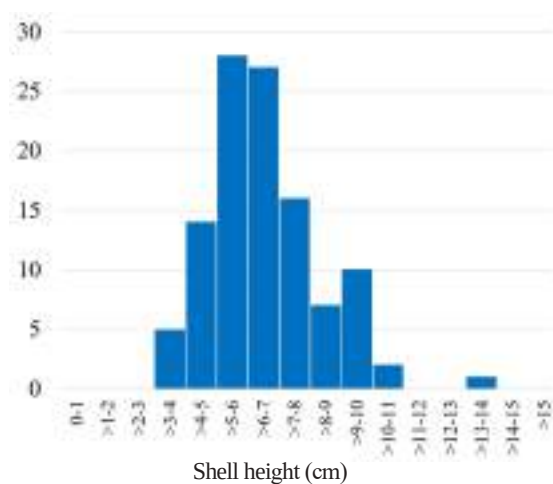


Fig. 281. Size-frequencies of Pacific oysters in 1 cm size intervals (n=110).

Molecular analyses	16S sequence: AG_9118 (GenBank nr: PX149998); HRM typing: AG_9117, AG_9118, AG_9119, AG_9120, AG_9121		
<i>M. gigas</i> oysters measured	110		
Minimum / maximum size (mm)	31 mm - 140 mm		
Density in complete track (476 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	2.833 /m ² (n=85)	Common	In 30 m transect
Highest density in 5 continuous meters	6.200 /m ² (n=31)	Common	In 30 m transect
Superabundant (100-999/m ²): Abundant (10-99/m ²): Common (1-9/m ²): Frequent (0.1-0.9/m ²): Occasional (0.01-0.09/m ²): Rare (< 0.009/m ²): Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	101
Pacific oyster	fixed	boulder	fixed	n.a.	9
Total number of oysters:					110
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.7 County Kerry

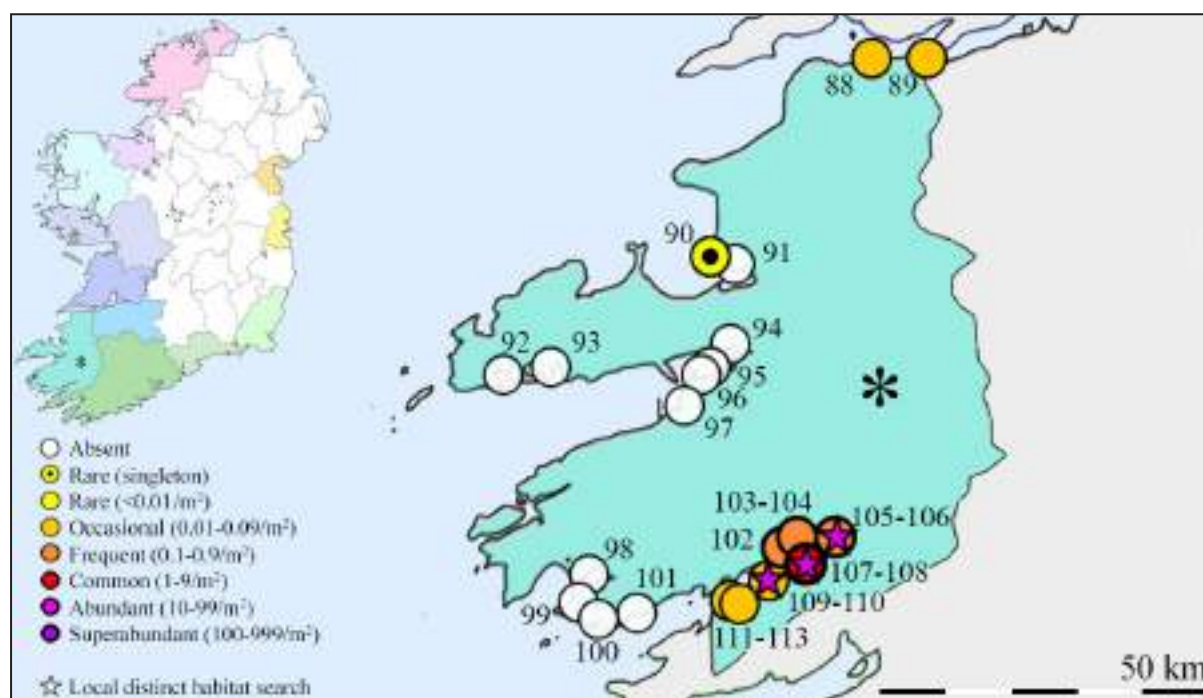


Fig. 282. Surveys in County Kerry

Between 2024 and 2025, 26 surveys were carried out in Co. Kerry, during which 21 km of the shoreline was searched (Fig. 282). The presence of feral oysters was recorded during 15 of these surveys. The highest abundance, common (1-9 oysters/m²) on the SACFOR scale (Table 2), was recorded in the timed survey 107, i.e. west of Derreenacallaha Pier in Kenmare Bay. The oyster abundance on Derreenacallaha pier was noticeably greater than in the surrounding area: Compared to all other surveys in Ireland, the feral oyster abundance was the highest recorded. They were super abundant, i.e., 100-999 oysters/m², with a reef forming on the pier with oysters growing on layers of other oysters. A feral oyster focused survey of Kenmare Bay in 2023 (Marine Institute, 2023), already documented the high densities that were present, particularly at locations more inshore. Considering that the surveys undertaken in 2009, 2012, and 2013 (Kochmann *et al.*, 2013; Zwerksche *et al.*, 2017) did not include any Kenmare Bay, it is unclear how long ago feral oysters first settled there. however. Given the discovery of feral oysters in Shannon Estuary (surveys 88 and 89), Barrow Harbour (survey 90), and in relatively high

abundances in Kenmare Bay, (surveys 102-113), it was anticipated that feral oyster settlement would also be found in Castlemaine Harbour, especially in protected, more inland areas where many Pacific oyster farms are located. Four separate surveys were conducted there along 7 km of the coastline (surveys 94-97), and while boulders and other surfaces that would seem suitable for establishment were common, no evidence of past or present feral oyster settlement was recorded.

5.7.1 Carrig Island, Shannon Estuary

Co. Kerry

Survey no. 88	Field code: MIO054 Timed Survey
Location	Carrig Island
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Pebbles and boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (40%)	Sand
Presence oyster culture	Far (8.5 km)
Presence artificial structures	No
Date and time survey	27-7-2024 14:59
Time searched	00:41
Minutes to low tide	70 min. (before low tide)
GPS start	N52 34.515 W9 29.464
GPS end	N52 34.655 W9 29.403
Distance searched	670 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 283. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and boulders overgrown with seaweeds and those consisting predominantly of sand.



Fig. 284. Survey track (blue line). 28 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 285. Feral Pacific oyster, settled on a pebble.

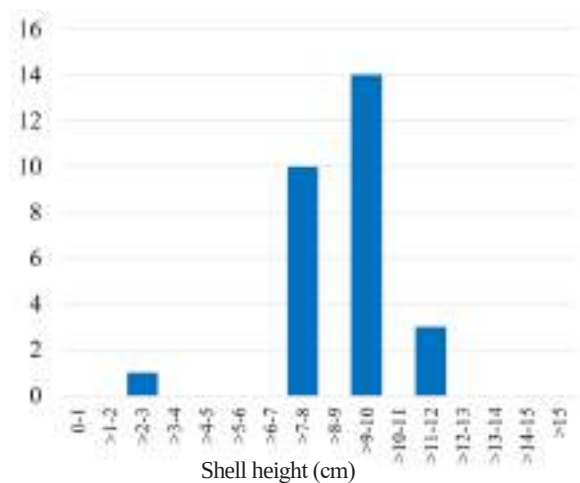


Fig. 286. Size-frequencies of Pacific oysters in 1 cm size intervals (n=28).

Molecular analyses	16S sequence: AG_9129 (GenBank nr: PX149999); HRM typing: AG_9127 / AG_9128		
<i>M. gigas</i> oysters measured	28		
Minimum / maximum size (mm)	30 mm - 112 mm		
Density in complete track (670 m)	0.042/m ² (n=28)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.200/m ² (n=6)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	1.00 /m ² (n=5)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	13
Pebble	fixed	pebbles	loose	no	9
				yes (<i>F. vesiculosus</i>)	6
Total number of oysters:					28
Total number of “whole structure loose” oysters:					15
Total number of “loose” oysters with seaweed (>5cm)					6

5.7.2 Tarbert, Shannon Estuary

Co. Kerry

Survey no. 89	Field code: MIO055 Timed Survey
Location	Tarbert
Bay name	Shannon Estuary
Bay residence time (days)	53.26 (Kochmann et al., 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders
Macro algae (50%)	<i>Fucus vesiculosus</i> and <i>Ulva</i> spp.
Soft substrate (40%)	Sand
Presence oyster culture	Far (15 km)
Presence artificial structures	No
Date and time survey	27-7-2024 15:52
Time searched	00:31
Minutes to low tide	27 min. (before low tide)
GPS start	N52 34.744 W9 21.913
GPS end	N52 34.959 W9 21.777
Distance searched	578 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 287. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand and seaweeds.



Fig. 288. Survey track (blue line). 53 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 289. Feral Pacific oyster, settled on a boulder.

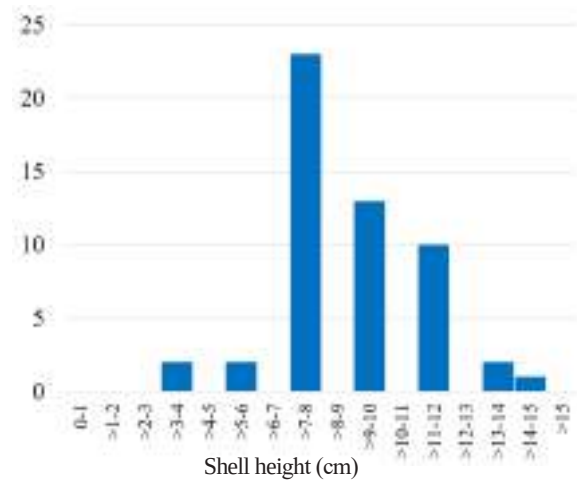


Fig. 290. Size-frequencies of Pacific oysters in 1 cm size intervals (n=53).

Molecular analyses	Sequences available from bordering survey no. 88.		
<i>M. gigas</i> oysters measured	53		
Minimum / maximum size (mm)	37 mm - 149 mm		
Density in complete track (578 m)	0.092/m ² (n=53)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.967/m ² (n=29)	Common	Based on GPS locs
Highest density in 5 continuous meters	1,600 /m ² (n=8)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	49
Pacific oyster	fixed	boulder	fixed	n.a.	2
Pebble	fixed	sand	loose	no	1
Sand	loose	n.a.	loose	no	1
Total number of oysters:					53
Total number of "whole structure loose" oysters:					9
Total number of "loose" oysters with seaweed (>5cm)					0

5.7.3 Talaught West Beach, Barrow Harbour

Co. Kerry

Survey no. 90	Field code: MIO058 Timed Survey
Location	Talaught West Beach
Bay name	Barrow Harbour
Bay residence time (days)	14.20 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (40%)	Sand and gravel
Presence oyster culture	Far (8 km)
Presence artificial structures	No
Date and time survey	31-7-2024 08:50
Time searched	00:30
Minutes to low tide	50 min. (after low tide)
GPS start	N52 17.089 W9 51.643
GPS end	N52 17.287 W9 51.642
Distance searched	474 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 291. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and those consisting predominantly of sand with gravel.



Fig. 292. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 293. Feral Pacific oyster, settled on a boulder.

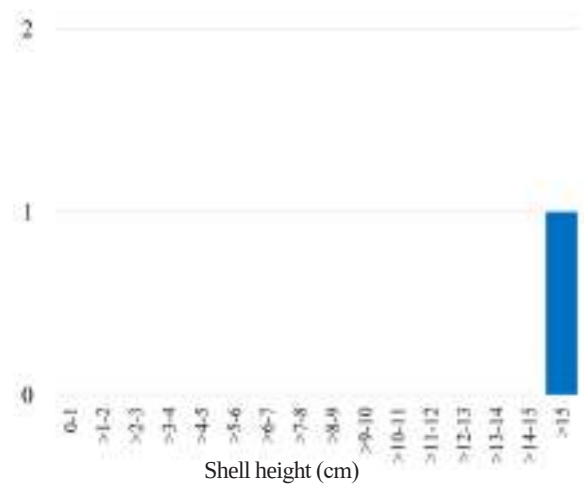


Fig. 294. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_9133 (GenBank nr: PX150001);		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	153 mm		
Density in complete track (474 m)	0.002 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.7.4 Kilfenora Beach, Tralee Bay

Co. Kerry

Survey no. 91	Field code: MIO059 Timed Survey
Location	Kilfenora Beach
Bay name	Tralee Bay
Bay residence time (days)	14.20 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (50%)	Boulders, pebbles and gravel
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (water outlet)
Date and time survey	31-7-2024 09:30
Time searched	00:30
Minutes to low tide	90 min. (after low tide)
GPS start	N52 16.551 W9 49.422
GPS end	N52 16.371 W9 48.973
Distance searched	794 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: Seven flat oysters were found. The DNA of one specimen was sequenced (AG_9434, GenBank nr: PX462776).	



Fig. 295. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and gravel.

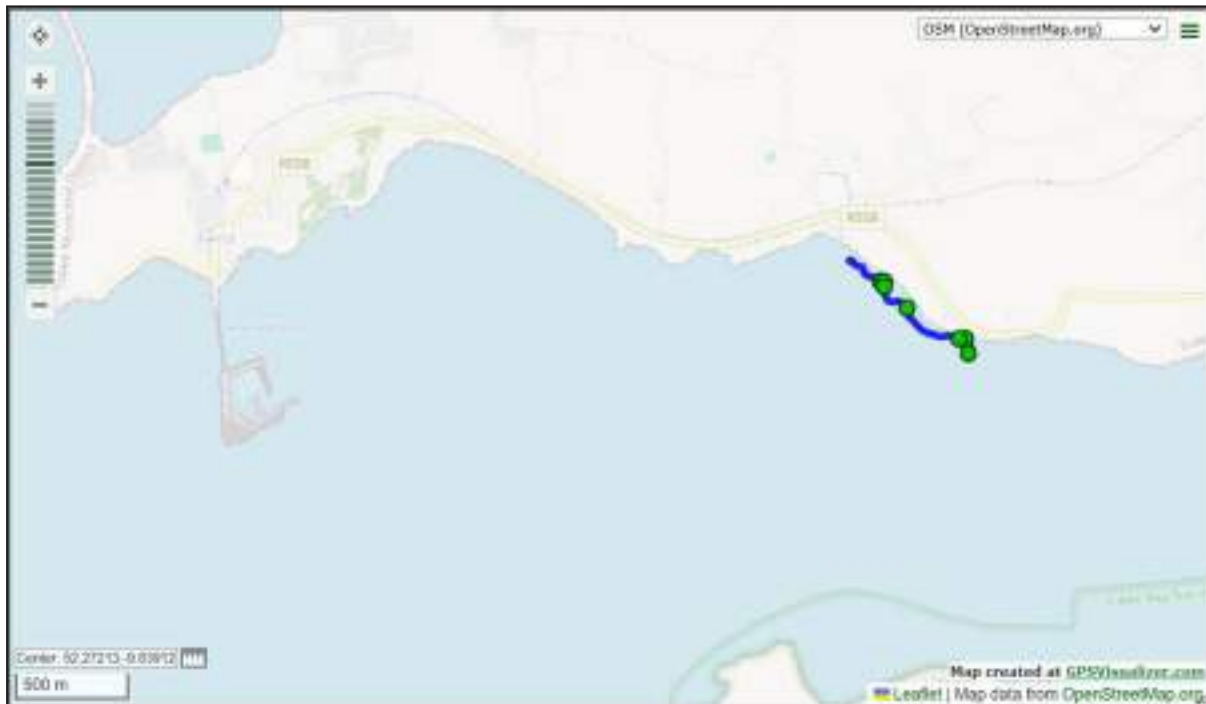


Fig. 296. Survey track (blue line). No feral Pacific oysters were found. Seven flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.7.5 Cuan Pier, Ventry Harbour

Co. Kerry

Survey no. 92	Field code: MIO087 Timed Survey
Location	Cuan Pier
Bay name	Ventry Harbour
Bay residence time (days)	26.40 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (40%)	Bedrock and boulders
Macro algae (40%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	8-8-2024 14:35
Time searched	00:34
Minutes to low tide	45 min. (after low tide)
GPS start	N52 06.901 W10 21.911
GPS end	N52 06.915 W10 21.888
Distance searched	1525 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

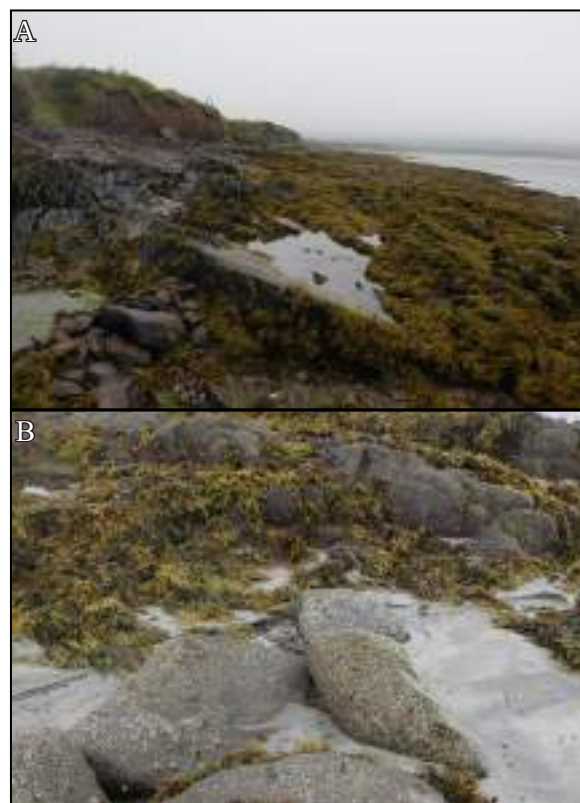


Fig. 297. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.



Fig. 298. Survey track (blue line). No feral Pacific oysters were found.

5.7.6 Hussey's Folly, Dingle harbour

Co. Kerry

Survey no. 93	Field code: MIO088 Timed Survey
Location	Hussey's Folly
Bay name	Dingle harbour
Bay residence time (days)	9.00 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Bedrock, boulders and pebbles
Macro algae (40%)	<i>Fucus</i> spp.
Soft substrate (30%)	Sand
Presence oyster culture	No
Presence artificial structures	No
Date and time survey	8-8-2024 13:40
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N52 07.717 W10 15.653
GPS end	N52 07.696 W10 15.655
Distance searched	1949 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

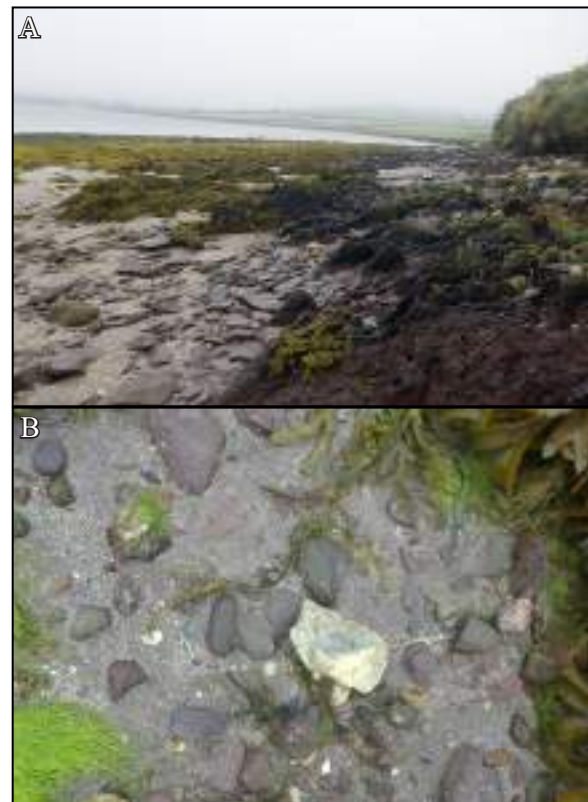


Fig. 299. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders overgrown by seaweeds and those consisting predominantly of sand.



Fig. 300. Survey track (blue line). No feral Pacific oysters were found.

5.7.7 Roscullen Island, Castlemaine Harbour

Co. Kerry

Survey no. 94	Field code: MIO089 Timed Survey
Location	Roscullen Island
Bay name	Castlemaine Harbour
Bay residence time (days)	14.68 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i>
Soft substrate (60%)	Sand
Presence oyster culture	Closeby (450 m)
Presence artificial structures	No
Date and time survey	8-8-2024 14:03
Time searched	00:49
Minutes to low tide	0 min. (during low tide)
GPS start	N52 09.493 W9 49.995
GPS end	N52 09.474 W9 49.696
Distance searched	1210 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 301. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders overgrown by seaweeds and those consisting predominantly of sand.



Fig. 302. Survey track (blue line). No feral Pacific oysters were found.

5.7.8 Cromane Lower East, Castlemaine Harbour

Co. Kerry

Survey no. 95	Field code: MIO085 Timed Survey
Location	Cromane Lower East
Bay name	Castlemaine Harbour
Bay residence time (days)	14.68 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (60%)	Sand
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (trestles)
Date and time survey	7-8-2024 14:46
Time searched	00:30
Minutes to low tide	46 min. (after low tide)
GPS start	N52 07.426 W9 53.547
GPS end	N52 07.993 W9 53.389
Distance searched	2132 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Many dead pacific oyster shells from nearby trestles.	



Fig. 303. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles on sand.

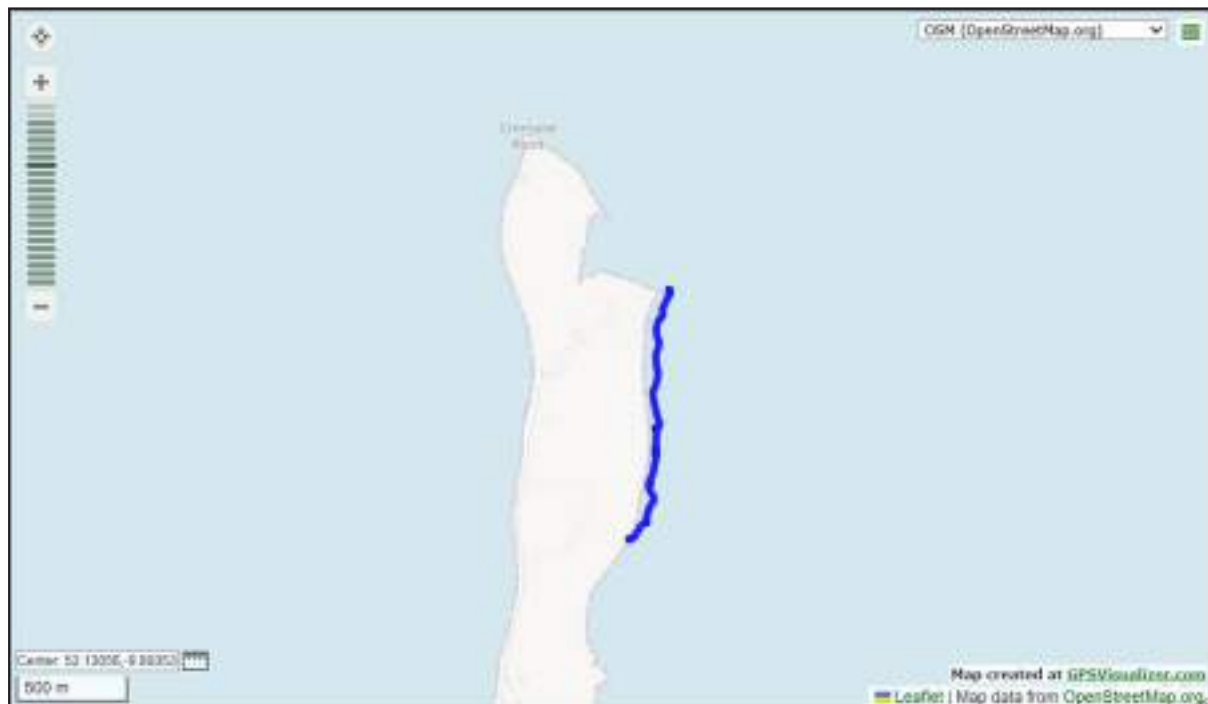


Fig. 304. Survey track (blue line). No feral Pacific oysters were found.

5.7.9 Cromane Lower West, Castlemaine Harbour

Co. Kerry

Survey no. 96	Field code: MIO086 Timed Survey
Location	Cromane Lower West
Bay name	Castlemaine Harbour
Bay residence time (days)	14.68 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (70%)	Sand
Presence oyster culture	Far (4800 m)
Presence artifical structures	No
Date and time survey	7-8-2024 14:38
Time searched	00:32
Minutes to low tide	38 min. (after low tide)
GPS start	N52 06.766 W9 54.196
GPS end	N52 07.501 W9 54.017
Distance searched	1509 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	Many dead pacific oyster shells from nearby trestles.

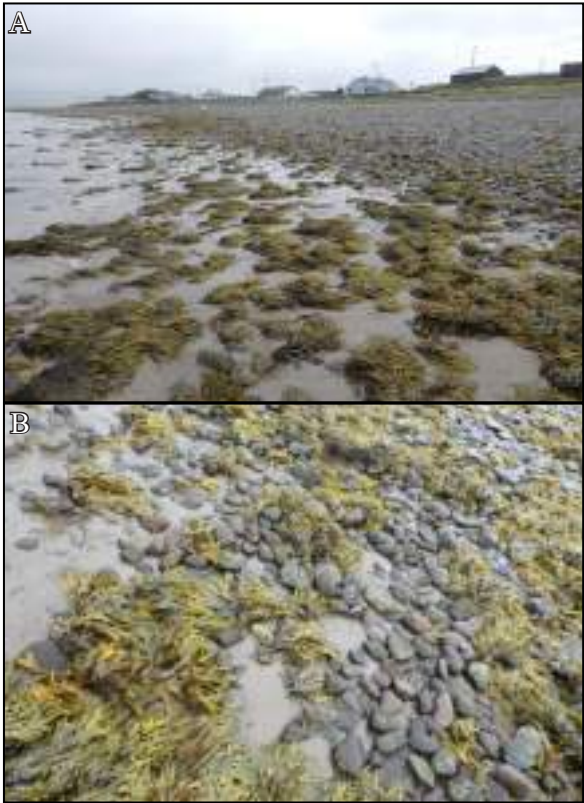


Fig. 305. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly sand.



Fig. 306. Survey track (blue line). No feral Pacific oysters were found.

5.7.10 Dooks Beach, Castlemaine Harbour

Co. Kerry

Survey no. 97	Field code: MIO084 Timed Survey
Location	Dooks Beach
Bay name	Castlemaine Harbour
Bay residence time (days)	14.68 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles and gravel
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (70%)	Sand
Presence oyster culture	Far (9.4 km)
Presence artificial structures	No
Date and time survey	7-8-2024 14:03
Time searched	00:48
Minutes to low tide	3 min. (after low tide)
GPS start	N52 04.834 W9 55.770
GPS end	N52 04.259 W9 55.332
Distance searched	2108 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 307. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand gravel.

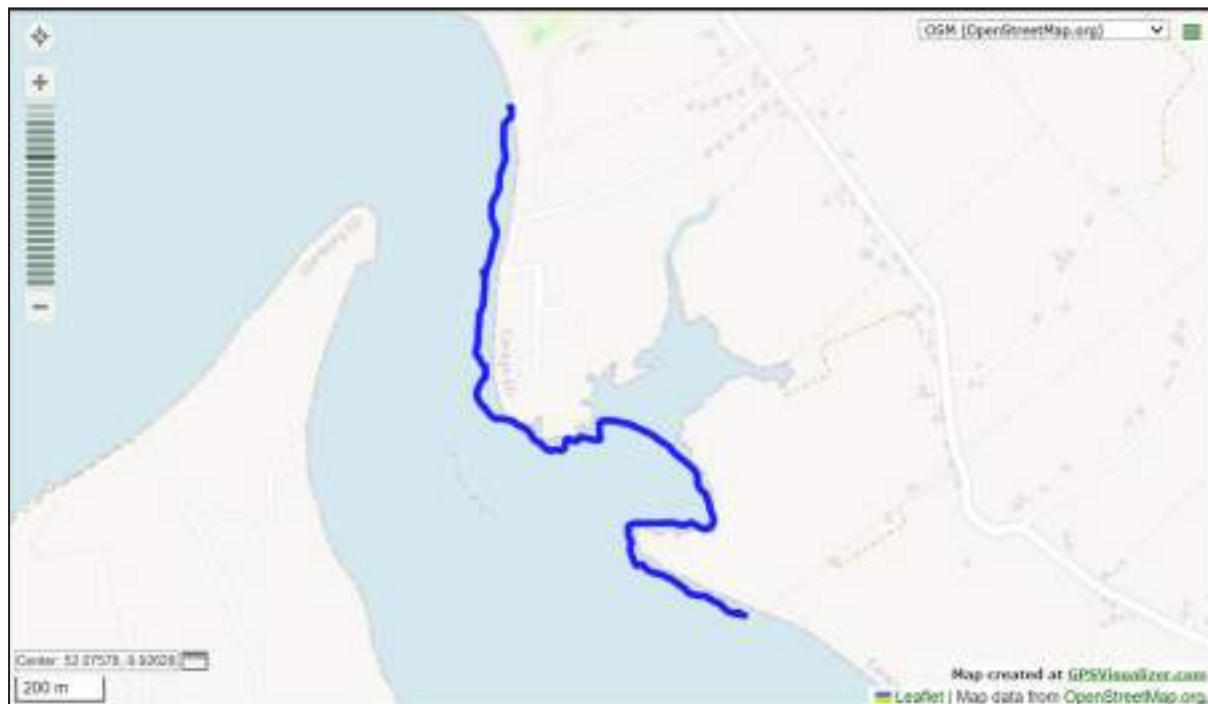


Fig. 308. Survey track (blue line). No feral Pacific oysters were found.

5.7.11 Waterville, Waterville Bay

Co. Kerry

Survey no. 98	Field code: MIO062 Timed Survey
Location	Waterville
Bay name	Waterville Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (80%)	Boulders and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	No
Presence artificial structures	No
Date and time survey	1-8-2024 18:10
Time searched	00:30
Minutes to low tide	55 min. (before low tide)
GPS start	N51 49.527 W10 10.362
GPS end	N51 49.299 W10 10.449
Distance searched	567 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 309. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.

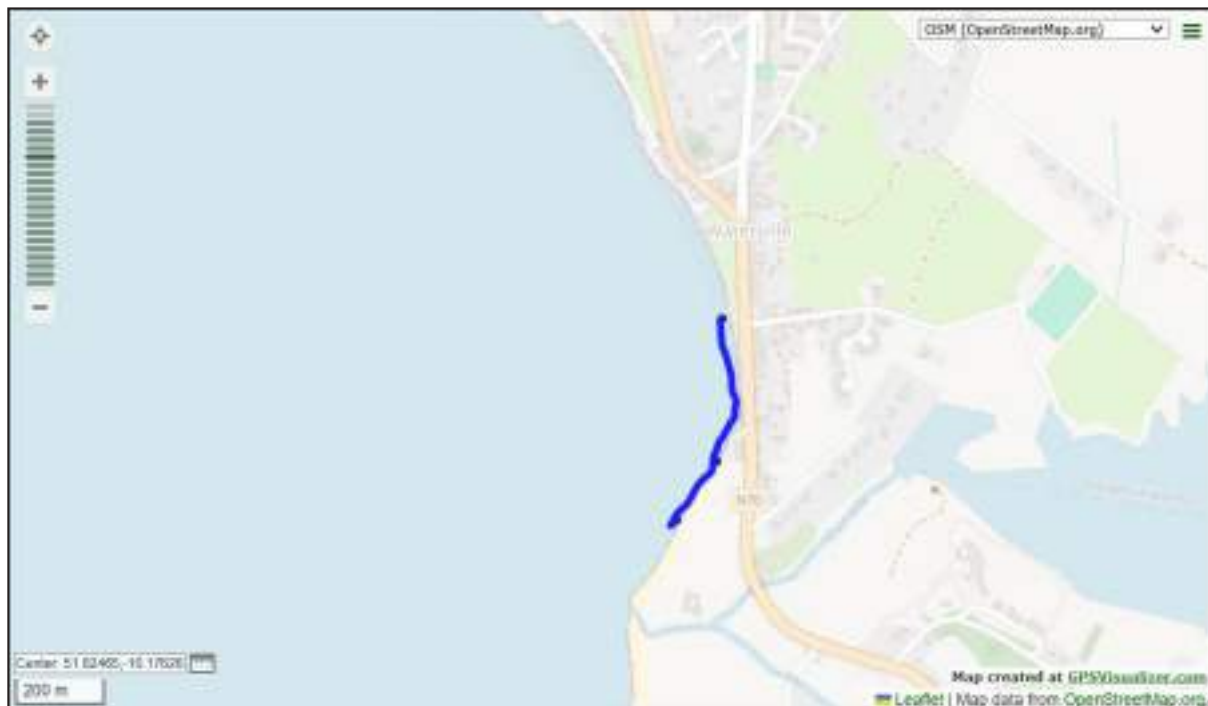


Fig. 310. Survey track (blue line). No feral Pacific oysters were found.

5.7.12 Rinneen Beach, Waterville Bay

Co. Kerry

Survey no. 99	Field code: MIO063 Timed Survey
Location	Rinneen Beach
Bay name	Waterville Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (100%)	Bedrock and boulders
Macro algae (0%)	n.a.
Soft substrate (0%)	n.a.
Presence oyster culture	No
Presence artificial structures	No
Date and time survey	1-8-2024 18:45
Time searched	00:30
Minutes to low tide	20 min. (before low tide)
GPS start	N51 47.260 W10 10.896
GPS end	N51 47.203 W10 11.182
Distance searched	554 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

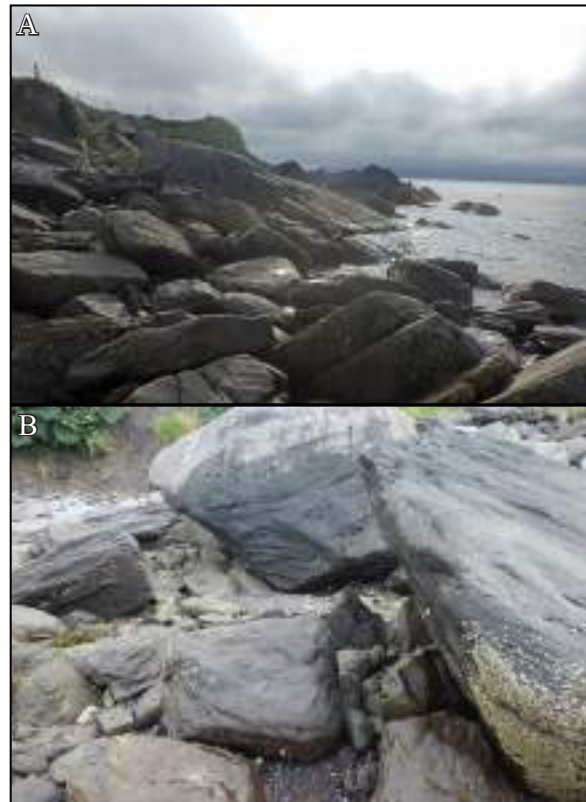


Fig. 311. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock and boulders.



Fig. 312. Survey track (blue line). No feral Pacific oysters were found.

5.7.13 Derrynane Beach, Bealtra Bay

Co. Kerry

Survey no. 100	Field code: MIO064 Timed Survey
Location	Derrynane Beach
Bay name	Bealtra Bay
Bay residence time (days)	-
Width of intertidal shore	> 150 m
Hard substrate (30%)	Bedrock
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (50%)	Sand
Presence oyster culture	No
Presence artificial structures	Yes (pier)
Date and time survey	1-8-2024 19:35
Time searched	00:32
Minutes to low tide	89 min. (before low tide)
GPS start	N51 45.666 W10 08.646
GPS end	N51 45.524 W10 08.756
Distance searched	520 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 313. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock overgrown by seaweeds and those consisting predominantly of sand.

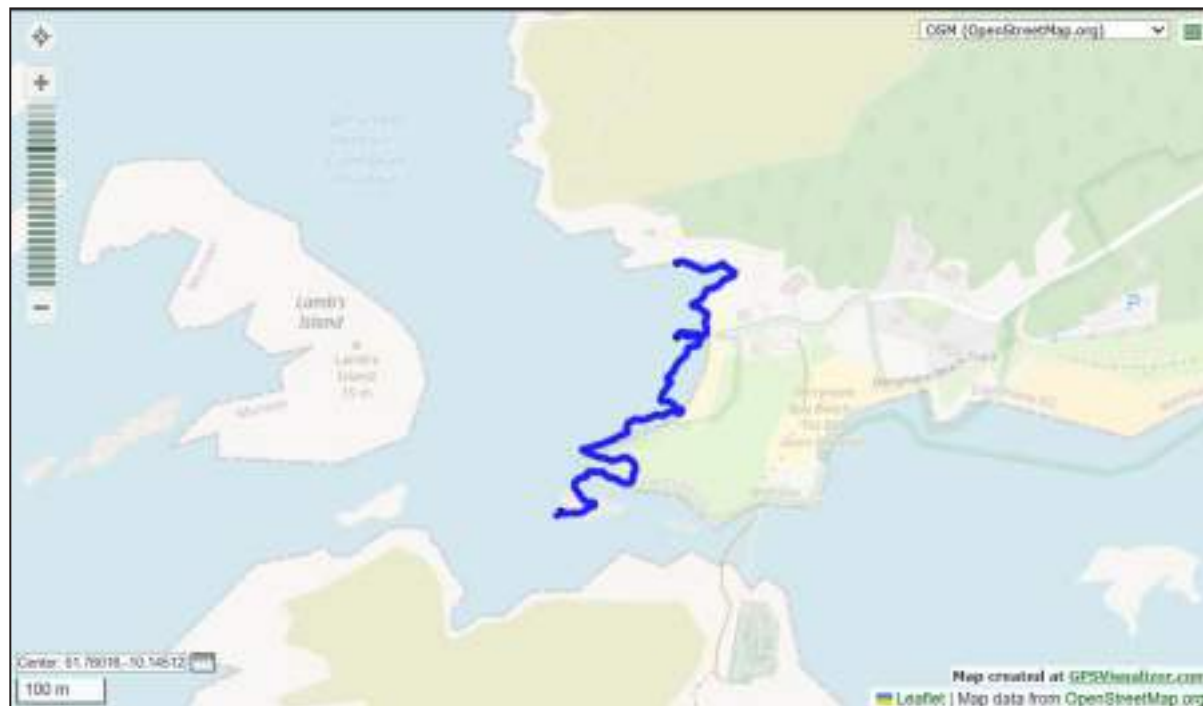


Fig. 314. Survey track (blue line). No feral Pacific oysters were found.

5.7.14 Westcove Beach, Kenmare River

Co. Kerry

Survey no. 101	Field code: MIO065 Timed Survey
Location	Westcove Beach
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (80%)	Bedrock
Macro algae (20%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2.9 km)
Presence artificial structures	No
Date and time survey	1-8-2024
Time searched	00:30
Minutes to low tide	40 min. (before low tide)
GPS start	N51 45.861 W10 03.263
GPS end	N51 45.982 W10 03.199
Distance searched	562 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 315. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 316. Survey track (blue line). No feral Pacific oysters were found.

5.7.15 Templenoe, Kenmare River

Co. Kerry

Survey no. 102	Field code: MIO138 Timed Survey
Location	Templenoe
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (50%)	Boulders and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i>
Soft substrate (10%)	Sand
Presence oyster culture	Closeby (5 m)
Presence artificial structures	Yes (trestles)
Date and time survey	28-7-2025 13:28
Time searched	00:32
Minutes to low tide	0 min. (during low tide)
GPS start	N51 51.941 W9 40.155
GPS end	N51 51.924 W9 40.324
Distance searched	361 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 317. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown by seaweeds.



Fig. 318. Survey track (red line). A total of 74 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 319. Feral Pacific oyster, settled on a boulder overgrown by seaweeds.

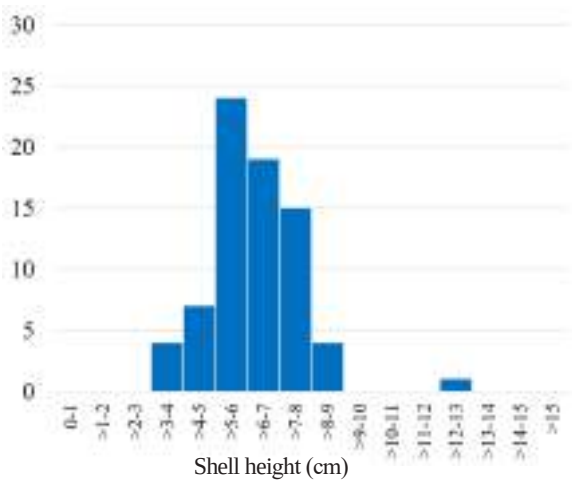


Fig. 320. Size-frequencies of Pacific oysters in 1 cm size intervals (n=74).

Molecular analyses	Sequences available from bordering survey no. 105.		
<i>M. gigas</i> oysters measured	74		
Minimum / maximum size (mm)	31 mm - 123 mm		
Density in complete track (361 m)	0.208 /m ² (n=74)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	1.133 /m ² (n=34)	Common	Based on GPS locs
Highest density in 5 continuous meters	3.000 /m ² (n=15)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	74
Total number of oysters:					74
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.7.16 Templenoe Pier, Kenmare River

Co. Kerry

Survey no. 103	Field code: MIO061 Timed Survey
Location	Templenoe Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (30%)	Pebbles
Macro algae (50%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (20%)	Sand
Presence oyster culture	Closeby (125 m)
Presence artificial structures	Yes (pier)
Date and time survey	1-8-2024 19:15
Time searched	00:30
Minutes to low tide	5 min. (after low tide)
GPS start	N51 52.108 W9 39.652
GPS end	N51 52.076 W9 39.751
Distance searched	167 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Survey next to survey no. 104.	



Fig. 321. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown with seaweeds.



Fig. 322. Survey track (red line). A total of 61 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 323. Two feral Pacific oysters, settled on top of each other. Large seaweeds were attached to them.

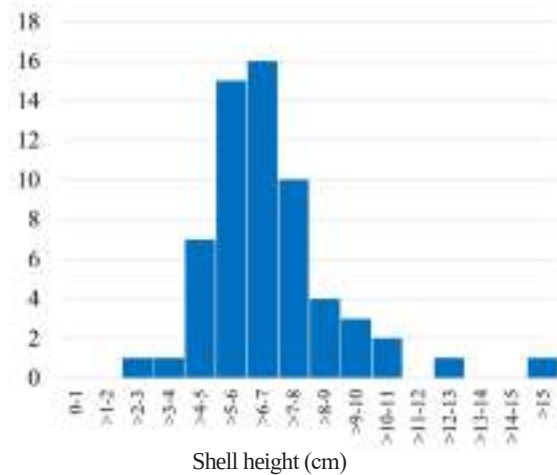


Fig. 324. Size-frequencies of Pacific oysters in 1 cm size intervals (n=61).

Molecular analyses	Sequences available from bordering survey no. 104.		
<i>M. gigas</i> oysters measured	61		
Minimum / maximum size (mm)	21 mm - 155 mm		
Density in complete track (167 m)	0,365 /m ² (n=61)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	0.867 /m ² (n=26)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	2.600 /m ² (n=13)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Pebble	fixed	pebbles	loose	No	13
				Yes (<i>F. vesiculosus</i>)	13
Pacific oyster	fixed	pebbles	loose	Yes (<i>F. vesiculosus</i>)	3
		sand	loose	No	3
				Yes (<i>F. vesiculosus</i>)	10
				Yes (<i>Gracelaria</i> sp.)	1
Oyster shell	fixed	sand	loose	Yes (<i>F. vesiculosus</i>)	1
Other shell (<i>Cerastoderma edule</i>)	fixed	sand	loose	No	2
				Yes (<i>F. vesiculosus</i>)	4
Other shell (<i>Mytilus edulis</i>)	fixed	sand	loose	Yes (<i>F. vesiculosus</i>)	1
Sand	loose	n.a.	loose	No	5
				Yes (<i>F. vesiculosus</i>)	5
Total number of oysters:					61
Total number of “whole structure loose” oysters:					61
Total number of “loose” oysters with seaweed (>5cm)					38

5.7.17 Templenoe Pier; high water line, Kenmare River

Co. Kerry

Survey no. 104	Field code: MIO060 Timed Survey
Location	Templenoe Pier high water line
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard stubstrate (70%)	Pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft stubstrate (0%)	n.a.
Presence oyster culture	Closeby (300 m)
Presence artificial structures	Yes (pier)
Date and time survey	1-8-2024 18:30
Time searched	00:45
Minutes to low tide	0 min. (during low tide)
GPS start	N51 52.161 W9 39.517
GPS end	N51 52.108 W9 39.652
Distance searched	378 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Survey on the high water line next to survey no. 103.	



Fig. 325 Distinct habitat survey: red dots. Red line concern bordering survey no. 103.



Fig. 326. General habitat: Boulders at the high water line



Fig. 327. Loose feral Pacific oyster with large seaweeds (*Fucus vesiculosus*) attached to them.



Fig. 328. Feral Pacific oyster with large seaweeds (*Fucus vesiculosus*) attached to them.

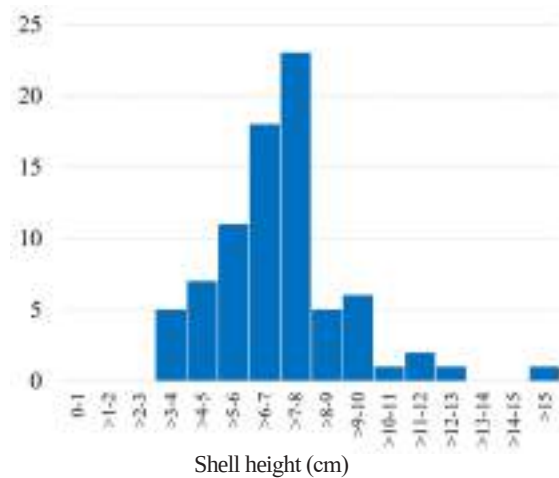


Fig. 329. Size-frequencies of Pacific oysters in 1 cm size intervals (n=80).

Molecular analyses	16S sequence: AG_9145 (GenBank nr: PX150002); HRM typing: AG_9141-9144 - AG_9146-9150		
<i>M. gigas</i> oysters measured	80		
Minimum / maximum size (mm)	32 mm - 155 mm		
Density in complete track (378 m)	0.212 /m ² (n=80)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	1.133 /m ² (n=34)	Common	Based on GPS locs
Highest density in 5 continuous meters	1.800 /m ² (n=9)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Pebble	fixed	pebbles	loose	no	24
				yes (<i>F. vesiculosus</i>)	11
Pacific oyster	fixed	pebbles	loose	no	11
				yes (<i>F. vesiculosus</i>)	14
Oyster shell	fixed	pebbles	loose	no	3
Other shell (<i>Cerastoderma edule</i>)	fixed	pebbles	loose	no	1
Pebbles	loose	n.a.	loose	no	13
				yes (<i>F. vesiculosus</i>)	3
Total number of oysters:					80
Total number of “whole structure loose” oysters:					80
Total number of “loose” oysters with seaweed (>5cm)					28

5.7.18 North of Kenmare Bridge, Kenmare River

Co. Kerry

Survey no. 105	Field code: MIO081 Timed Survey and 2 transects
Location	North of Kenmare Bridge
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (20%)	Pebbles and boulders
Macro algae (60%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Far (4.6 km)
Presence artificial structures	Yes (pier and ramp)
Date and time survey	5-8-2024 11:40
Time searched	00:35
Minutes to low tide	0 min. (during low tide)
GPS start	N51 52.336 W9 35.022
GPS end	N51 52.400 W9 35.836
Distance searched	1176 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 330. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown by seaweeds.



Fig. 331. Survey track (blue line). A total of 114 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Additionally, oysters were counted within the two marked 30-meter transects.



Fig. 332. Feral Pacific oyster, settled on a pebble.

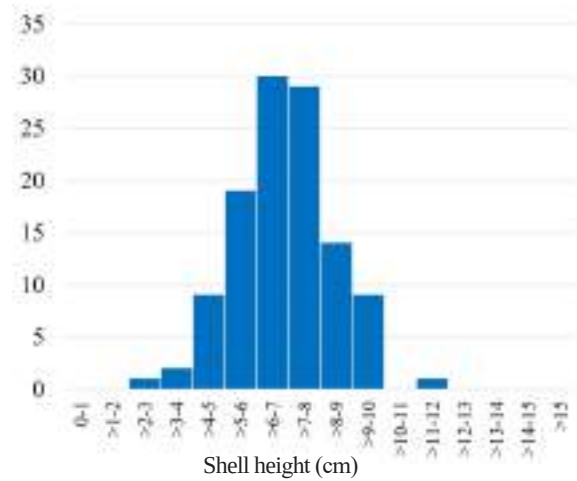


Fig. 333. Size-frequencies of Pacific oysters in 1 cm size intervals (n=114).

Molecular analyses	16S sequence: AG_9158 (GenBank nr: PX150006); AG_9159 (GenBank nr: PX150007); AG_9162 (GenBank nr: PX150008); HRM typing: AG_9160-9161/ AG_9163-9167		
<i>M. gigas</i> oysters measured	114		
Minimum / maximum size (mm)	27 mm - 119 mm		
Density in complete track (1176 m)	0.246 /m ² (n=289)	Frequent	Based on GPS locs
Highest density in 30 continuous meters	4.667 /m ² (n=140)	Common	In 30 m transect
	1.467 /m ² (n=44)	Common	Based on GPS locs
Highest density in 5 continuous meters	8.400 /m ² (n=42) _□	Common	In 30 m transect
	2.600 /m ² (n=13)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	14
Pacific oyster	fixed	boulder	fixed	n.a.	1
Pebble	fixed	pebbles	loose	no	53
				yes (<i>A. nodosum</i>)	2
				yes (<i>F. vesiculosus</i>)	6
				yes (<i>F. serratus</i>)	11
				yes (<i>Ulva</i> sp.)	2
Pacific oyster	fixed	pebbles	loose	No	14
Other Shell (<i>Mytilus edulis</i>)	fixed	pebbles	loose	No	2
Pebbles	loose	n.a.	loose	No	5
Sand	loose	n.a.	loose	No	4
Total number of oysters:					114
Total number of “whole structure loose” oysters:					99
Total number of “loose” oysters with seaweed (>5cm)					21

5.7.19 Kenmare Bridge, Kenmare River

Co. Kerry

Survey no. 106	Field code: MIO080 Distinct Habitat Survey
Location	Kenmare Bridge
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Artificial structure (stone building blocks)
Macro algae (10%)	<i>Ascophyllum nodosum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (5.5 Km)
Presence artificial structures	Yes (stone bridge)
Date and time survey	5-8-2024 11:43
Time searched	00:12
Minutes to low tide	5 min. (before low tide)
GPS start	N51 52.288 W9 34.942
GPS end	n.a.
Distance searched	6 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone of the wall of a bridge. Location bordering timed survey no. 105.	



Fig. 334. Distinct habitat survey: large red dot. Smaller red dots and line concern bordering survey no. 105.



Fig. 335. General habitat: Stone bridge.



Fig. 336. Bridge wall with feral Pacific oysters.



Fig. 337. Feral Pacific oysters on the bridge.

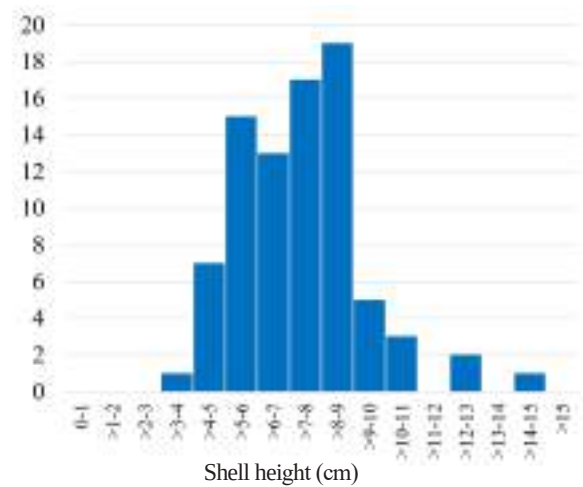


Fig. 338. Size-frequencies of Pacific oysters in 1 cm size intervals (n=83).

Molecular analyses	Sequences available from bordering survey no. 105.		
<i>M. gigas</i> oysters measured	83		
Minimum / maximum size (mm)	34 mm - 142 mm		
Density in distinct habitat survey (6 m)	15.50 m ² (n=93)	Abundant	Counted in the field
Highest density in 30 continuous meters	n.a.		
Highest density in 5 continuous meters	16.60 /m ² (n=83)	Abundant	Counted in the field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (Stone bridge)	fixed	n.a.	fixed	n.a.	80
Pacific oyster	fixed	Artificial structure (Stone bridge)	fixed	n.a.	3
Total number of oysters:					83
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.7.20 West of Derreenacallaha Pier, Kenmare River

Co. Kerry

Survey no. 107	Field code: MIO082 Timed survey and 2 transects
Location	West of Derreenacallaha Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (90%)	<i>Fucus</i> spp. and <i>Ascophyllum nodosum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2.8 km)
Presence artificial structures	Yes (pier)
Date and time survey	6-8-2024 12:05
Time searched	40 minutes
Minutes to low tide	0 min. (during low tide)
GPS start	N51 50.715 W9 39.147
GPS end	N51 50.729 W9 39.031
Distance searched	363 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	Location bordering distinct habitat survey no. 108



Fig. 339. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown by sea weeds.



Fig. 340. Survey track (red line). Feral Pacific oysters were estimated to be common throughout the track. These Pacific oysters were counted within the two marked 30-meter transects.



Fig. 341. Feral Pacific oyster, settled on a boulder.

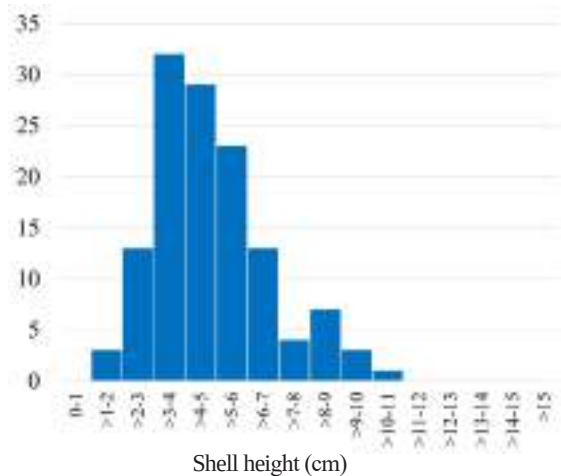


Fig. 342. Size-frequencies of Pacific oysters in 1 cm size intervals (n=128).

Molecular analyses	Sequences available from bordering survey no. 108.		
<i>M. gigas</i> oysters measured	128		
Minimum / maximum size (mm)	16 mm - 105 mm		
Density in complete track (363 m)	1-9 /m ²	Common	Estimated in field
Highest density in 30 continuous meters	3.466 /m ² (n=149)	Common	In 30 m transect
Highest density in 5 continuous meters	6.600 /m ² (n=33)	Common	In 30 m transect
Superabundant (100-999/m ²): Abundant (10-99/m ²): Common (1-9/m ²): Frequent (0.1-0.9/m ²): Occasional (0.01-0.09/m ²): Rare (< 0.009/m ²): Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	66
Pacific oyster	fixed	Boulder	fixed	n.a.	16
Artificial structure	fixed	n.a.	fixed	n.a.	12
Pacific oyster	fixed	Artificial structure	fixed	n.a.	5
Pacific oyster	fixed	Pebbles	loose	no	4
Pacific oyster	fixed	Sand	loose	no	3
Pebbles	fixed	Sand	loose	no	1
Other Shell (<i>Ostrea edulis</i>)	fixed	Sand	loose	no	1
Pebbles	loose	n.a.	loose	no	5
				yes (<i>F. vesiculosus</i>)	1
Sand	loose	n.a.	loose	no	10
				yes (<i>F. vesiculosus</i>)	2
Total number of oysters:					128
Total number of “whole structure loose” oysters:					17
Total number of “loose” oysters with seaweed (>5cm)					3

5.7.21 Derreenacallaha Pier, Kenmare River

Co. Kerry

Survey no. 108	Field code: MIO083 Distinct habitat survey
Location	Derreenacallaha Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Artificial structure (concrete pier)
Macro algae (10%)	<i>Ascophyllum nodosum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2.8 km)
Presence artificial structures	Yes (concrete pier)
Date and time survey	6-8-2024 13:00
Time searched	62 minutes
Minutes to low tide	20 min. (after low tide)
GPS start	N51 50.729 W9 39.031
GPS end	N51 50.731 W9 39.049
Distance searched	37 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone of the wall of a pier. Location bordering timed survey no. 107.	



Fig. 343. Distinct habitat survey: large red dot. Red line concerns bordering survey no. 107.



Fig. 344. General habitat: Concrete pier.



Fig. 345. Pier wall with over a hundred Pacific oysters per m².



Fig. 346. Feral Pacific oysters, settled on top of each other.

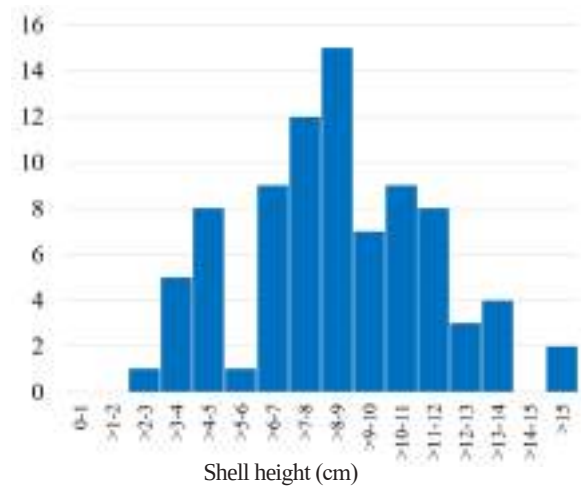


Fig. 347. Size-frequencies of Pacific oysters in 1 cm size intervals (n=84).

Molecular analyses	16S sequence: AG_9154 (GenBank nr: PX150009); HRM typing: AG_9151; AG_9152; AG_9153; AG_9154-9156		
<i>M. gigas</i> oysters measured	84		
Minimum / maximum size (mm)	30 mm - 160 mm		
Density in distinct habitat survey (37 m)	72.162 m ² (n=2670)	Abundant	Counted from photos
Highest density in 30 continuous meters	76.733 /m ² (n=2302)	Abundant	Counted from photos
Highest density in 5 continuous meters	119.00 /m ² (n=595)	Super abundant	Counted from photos
	159.60 /m ² (n=798)	Super abundant	Counted in field
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Artificial structure (concrete pier)	fixed	n.a.	fixed	n.a.	39
Pacific oyster	fixed	Artificial structure (concrete pier)	fixed	n.a.	45
Total number of oysters:					84
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.7.22 Coornagillagh Pier, Kenmare River

Co. Kerry

Survey no. 109	Field code: MIO077 Timed Survey
Location	Coornagillagh Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Bedrock and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (7.3 km)
Presence artificial structures	Yes (pier)
Date and time survey	4-8-2024 10:38
Time searched	00:34
Minutes to low tide	0 min. (during low tide)
GPS start	N51 49.470 W9 44.412
GPS end	N51 49.637 W9 44.573
Distance searched	1177 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 348. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and those consisting predominantly of pebbles.



Fig. 349. Survey track (blue line). A total of 96 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 350. Feral Pacific oyster, settled on a pebble.

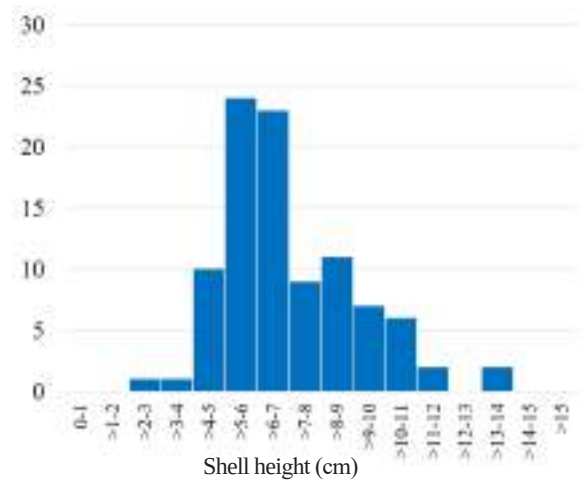


Fig. 351. Size-frequencies of Pacific oysters in 1 cm size intervals (n=96).

Molecular analyses	Sequences available from survey no. 108.		
<i>M. gigas</i> oysters measured	96		
Minimum / maximum size (mm)	31 mm - 135 mm		
Density in complete track (1177 m)	0.080/m ² (n=96)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	1.367/m ² (n=41)	Common	Based on GPS locs
Highest density in 5 continuous meters	4.200 /m ² (n=21)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	13
Boulder	fixed	n.a.	fixed	n.a.	54
Pebble	fixed	pebbles	loose	no	17
				yes (<i>F. vesiculosus</i>)	6
Pacific oyster	fixed	pebbles	loose	no	1
Other Shell (<i>Littorina littorea</i>)	fixed	pebbles	loose	no	2
Pebbles	loose	n.a.	loose	no	2
Sand	loose	n.a.	loose	no	1
Total number of oysters:					96
Total number of "whole structure loose" oysters:					30
Total number of "loose" oysters with seaweed (>5cm)					6

5.7.23 Coornagillagh Beach, Kenmare River

Co. Kerry

Survey no. 110	Field code: MIO078 Distinct Habitat Survey
Location	Coornagillagh Beach
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Bedrock
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (7.3 km)
Presence artificial structures	No
Date and time survey	4-8-2024 11:22
Time searched	00:51
Minutes to low tide	12 min. (after low tide)
GPS start	N51 49.511 W9 44.466
GPS end	n.a.
Distance searched	60 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	Location bordering timed survey no. 109.



Fig. 352. Distinct habitat survey: large red dot. Smaller red dots and line concern bordering survey no. 109.



Fig. 353. General habitat: Bedrock.



Fig. 354. Bedrock covered in feral Pacific oysters.



Fig. 355. Feral Pacific oysters, settled on bedrock.

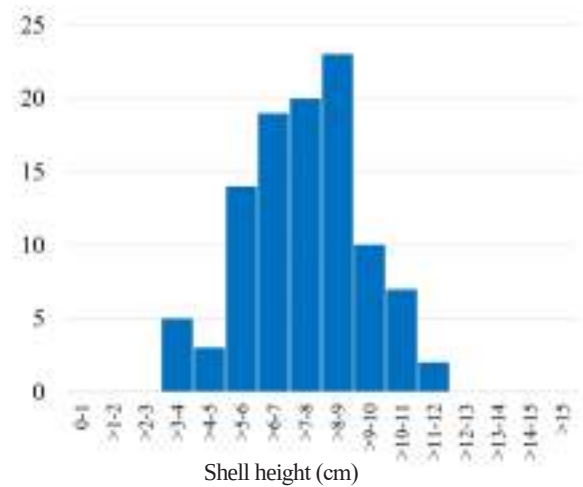


Fig. 356. Size-frequencies of Pacific oysters in 1 cm size intervals (n=103).

Molecular analyses	Sequences available from survey no. 108.		
<i>M. gigas</i> oysters measured	103		
Minimum / maximum size (mm)	35 mm - 115 mm		
Density in distinct habitat survey (60 m)	13.40 m ² (n=804)	Abundant	In two 30 m transects
Highest density in 30 continuous meters	22.17 /m ² (n=665)	Abundant	In 30 m transect
Highest density in 5 continuous meters	67.80 /m ² (n=339)	Abundant	In 30 m transect
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	103
Total number of oysters:					103
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.7.24 Loughaunacreen Beach, Kenmare River

Co. Kerry

Survey no. 111	Field code: MIO079 Timed Survey
Location	Loughaunacreen Beach
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Bedrock and pebbles
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (14.3 km)
Presence artificial structures	No
Date and time survey	4-8-2024 12:47
Time searched	00:36
Minutes to low tide	97 min. (after low tide)
GPS start	N51 47.092 W9 49.459
GPS end	N51 47.022 W9 49.587
Distance searched	521 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 357. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 358. Survey track (blue line). Nineteen feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 359. Feral Pacific oyster, settled on bedrock.

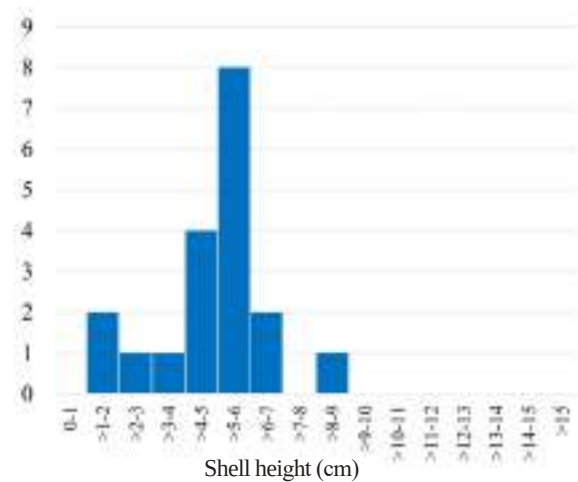


Fig. 360. Size-frequencies of Pacific oysters in 1 cm size intervals (n=19).

Molecular analyses	16S sequence: AG_9157 (GenBank nr: PX150005);		
<i>M. gigas</i> oysters measured	19		
Minimum / maximum size (mm)	21 mm - 82 mm		
Density in complete track (521 m)	0.040/m ² (n=19)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.400/m ² (n=12)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	1.800 /m ² (n=9)	Common	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	19
Total number of oysters:					19
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.7.25 South of Kilmakilloge Pier, Kenmare River

Co. Kerry

Survey no. 112	Field code: MIO056 Timed Survey
Location	South of Kilmakilloge Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50
Hard substrate (60%)	Bedrock, boulders and pebbles
Macro algae (40%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (16.5 km)
Presence artificial structures	yes (pier and ramp)
Date and time survey	28-7-2024 15:24
Time searched	00:34
Minutes to low tide	62 min. (before low tide)
GPS start	N51 46.847 W9 48.316
GPS end	N51 46.698 W9 48.333
Distance searched	514 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 361. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown with seaweeds.

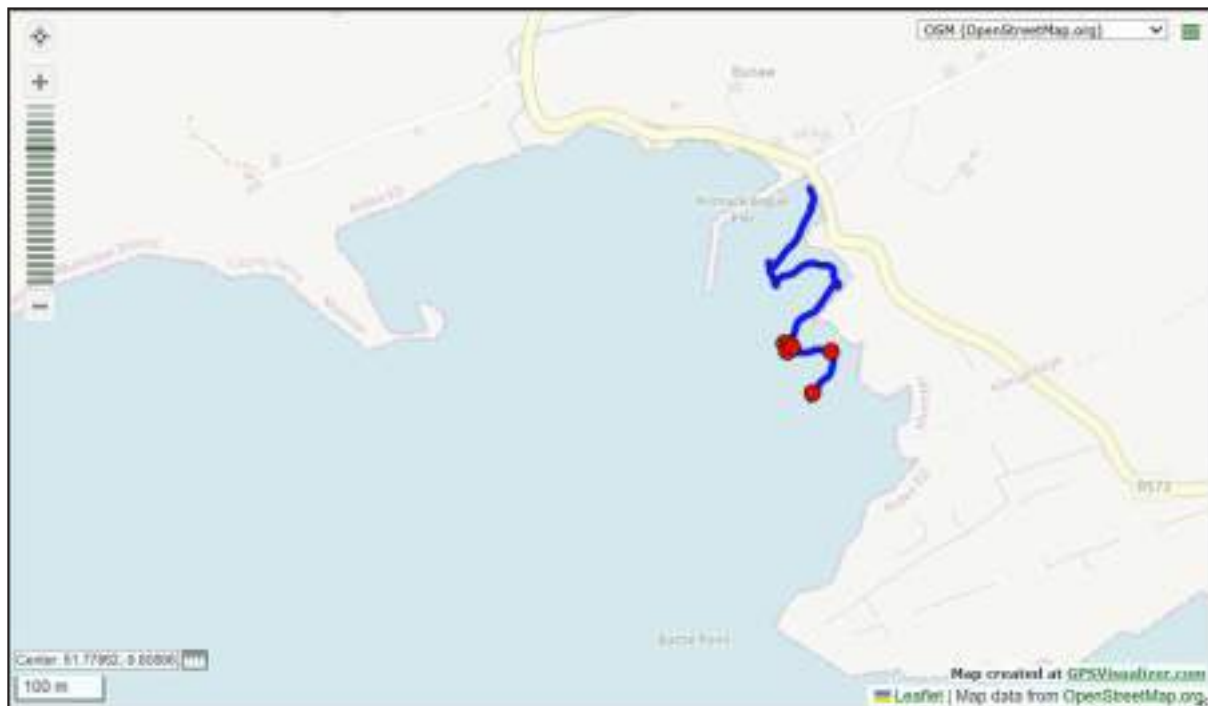


Fig. 362. Survey track (blue line). Six feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 363. Feral Pacific oyster, settled on bedrock.

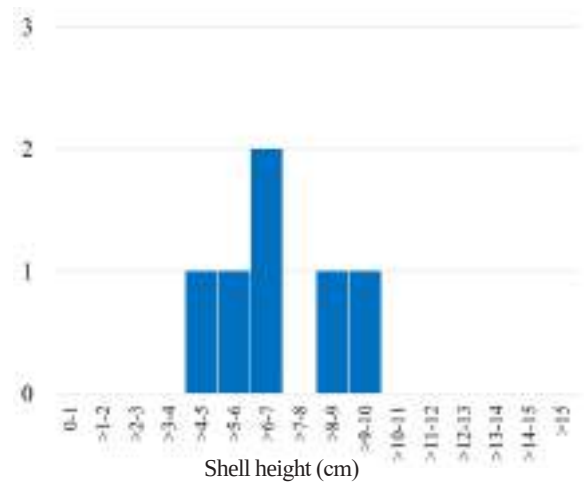


Fig. 364. Size-frequencies of Pacific oysters in 1 cm size intervals (n=6).

Molecular analyses	HRM typing: AG_9131 (Genbank nr. PX583023)		
<i>M. gigas</i> oysters measured	6		
Minimum / maximum size (mm)	41 mm - 96 mm		
Density in complete track (514 m)	0.012/m ² (n=6)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.133/m ² (n=4)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.800 /m ² (n=4)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	6
Total number of oysters:					6
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.7.26 West of Kilmakilloge Pier, Kenmare River

Co. Kerry

Survey no. 113	Field code: MIO057 Timed Survey
Location	West of Kilmakilloge Pier
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (50%)	Pebbles and boulders
Macro algae (50%)	<i>Ascophyllum nodosum</i> , <i>Fucus vesiculosus</i> and <i>Ulva</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (16.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	28-7-2024 16:09
Time searched	00:32
Minutes to low tide	19 min. (before low tide)
GPS start	N51 46.795 W9 48.440
GPS end	N51 46.804 W9 48.728
Distance searched	559 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 365. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders overgrown with seaweeds.



Fig. 366. Survey track (blue line). A total of 15 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 367. Feral Pacific oyster, settled on a boulder.

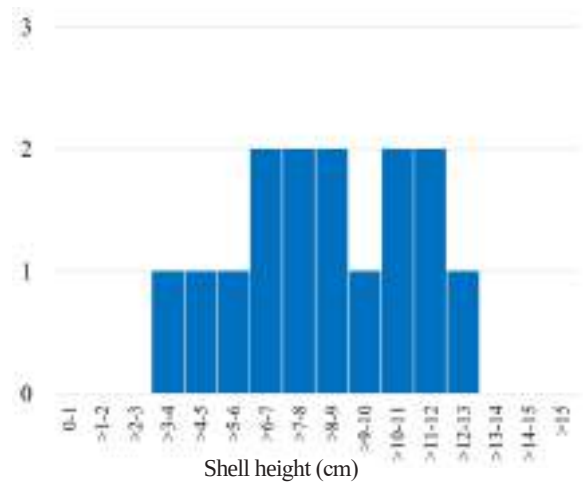


Fig. 368. Size-frequencies of Pacific oysters in 1 cm size intervals (n=15).

Molecular analyses	16S sequence: AG_9130 (GenBank nr: PX150000);		
<i>M. gigas</i> oysters measured	15		
Minimum / maximum size (mm)	36 mm - 125 mm		
Density in complete track (559 m)	0.027/m ² (n=15)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.267/m ² (n=8)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.600 /m ² (n=3)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	14
Pebble	fixed	pebbles	loose	no	1
Total number of oysters:					15
Total number of “whole structure loose” oysters:					1
Total number of “loose” oysters with seaweed (>5cm)					0

5.8 County Cork

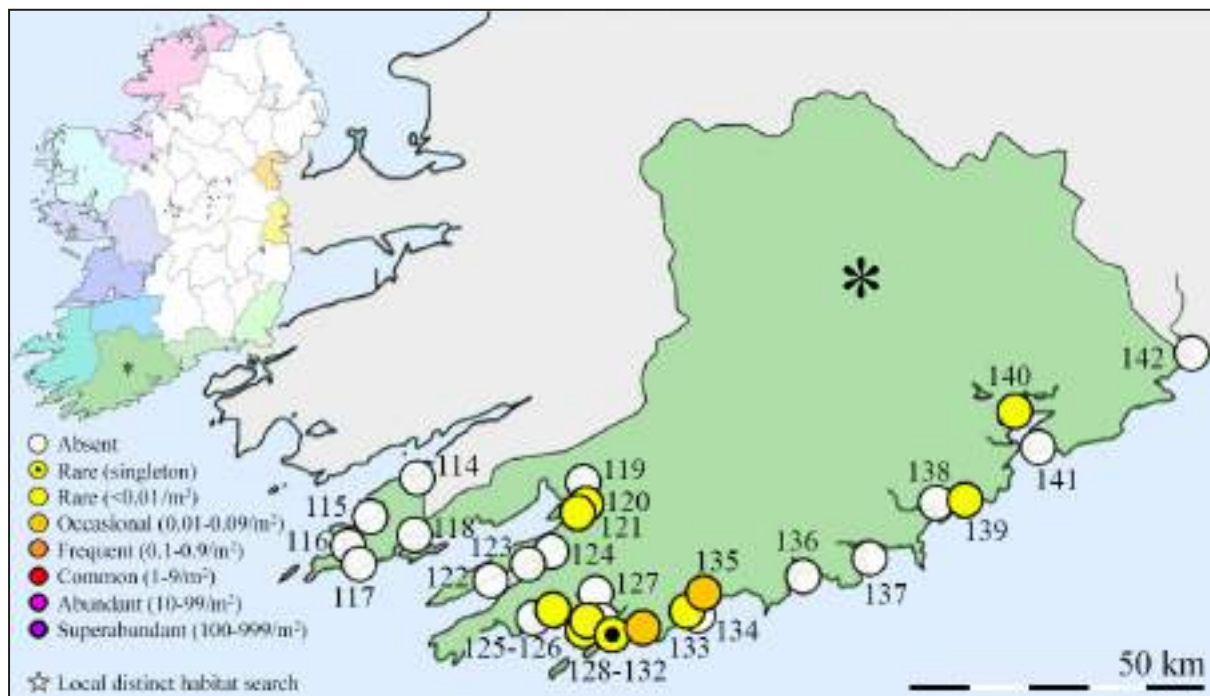


Fig. 369. Surveys in County Cork

Between 2024 and 2025, 29 surveys were carried out in Co. Cork, during which a total of 19 km of the shoreline was searched (Fig. 369). During 11 surveys, feral oysters were detected, but at 9 of these locations, the oysters were rare, with in most cases a few specimens. The highest abundance, occasional ($0.01-0.09$ oysters/ m^2) on the SACFOR scale (Table 2), was recorded in the two surveys 132 (Lough Hyne) and 135 (Keelbeg Pier, Glandor Bay). Kochmann *et al.* (2013), in the surveys conducted in 2009, also surveyed these and several other locations where feral oysters were found in 2024 and 2025, but during those initial surveys, no feral oysters were discovered (Fig. 1). It is uncertain when feral oysters have become established in Co. Cork, but it is evident that the now established oysters are reproducing. Within most surveys where multiple specimens were recorded, the sizes of the specimens showed significant variation, and for example, at Keelbeg Pier in Glandor Bay (survey 135), the 15 oysters that were found had shell sizes that ranged from 6 to 15 cm (Fig. 435). This proves that the oysters were of different ages, reflecting multiple spawning occurrences.

5.8.1 Droumard, Kenmare River

Co. Cork

Survey no. 114	Field code: MIO072 Timed Survey
Location	Droumard
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (10%)	Boulders and pebbles
Macro algae (90%)	<i>Fucus</i> spp. and <i>Ascophyllum nodosum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (20 km)
Presence artificial structures	No
Date and time survey	3-8-2024 08:45
Time searched	00:40
Minutes to low tide	85 min. (before low tide)
GPS start	N51 44.846 W9 52.446
GPS end	N51 44.608 W9 52.697
Distance searched	780 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 370. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles overgrown with seaweed.



Fig. 371. Survey track (blue line). No feral Pacific oysters were found.

5.8.2 Travaud Beach, Kenmare River

Co. Cork

Survey no. 115	Field code: MIO073 Timed Survey
Location	Travaud Beach
Bay name	Kenmare River
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (80%)	Bedrock and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (33.5 km)
Presence artificial structures	Yes (pier)
Date and time survey	3-8-2024 09:44
Time searched	00:30
Minutes to low tide	31 min. (before low tide)
GPS start	N51 40.361 W10 00.935
GPS end	N51 40.413 W10 01.147
Distance searched	573 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

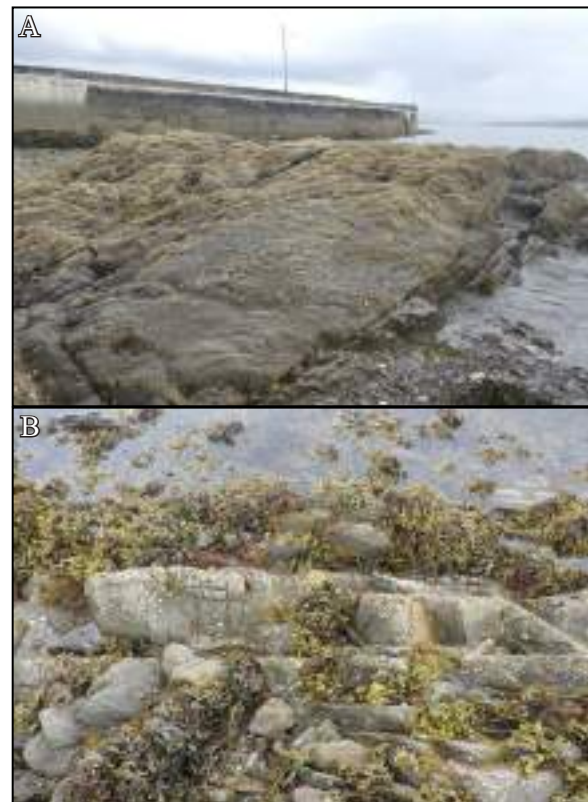


Fig. 372. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly of bedrock.



Fig. 373. Survey track (blue line). No feral Pacific oysters were found.

5.8.3 Ballydonegan Beach, Ballydonegan Bay

Co. Cork

Survey no. 116	Field code: MIO074 Timed Survey
Location	Ballydonegan Beach
Bay name	Ballydonegan Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (70%)	Bedrock
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	3-8-2024 10:47
Time searched	00:28
Minutes to low tide	17 min. (after low tide)
GPS start	N51 37.851 W10 03.548
GPS end	N51 37.883 W10 03.499
Distance searched	825 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 374. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 375. Survey track (blue line). No feral Pacific oysters were found.

5.8.4 Cahermore, Bantry Bay

Co. Cork

Survey no. 117	Field code: MIO075 Timed Survey
Location	Cahermore
Bay name	Bantry Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (80%)	Bedrock and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	3-8-2024 11:25
Time searched	00:36
Minutes to low tide	45 min. (after low tide)
GPS start	N51 36.164 W10 02.612
GPS end	N51 36.186 W10 02.649
Distance searched	691 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 376. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 377. Survey track (blue line). No feral Pacific oysters were found.

5.8.5 Dinish Island, Bantry Bay

Co. Cork

Survey no. 118	Field code: MIO076 Timed Survey
Location	Dinish Island
Bay name	Bantry Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (70%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	3-8-2024 12:14
Time searched	00:30
Minutes to low tide	74 min. (after low tide)
GPS start	N51 38.849 W9 53.905
GPS end	N51 38.756 W9 54.199
Distance searched	766 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 378. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.



Fig. 379. Survey track (blue line). No feral Pacific oysters were found.

5.8.6 Snave Bridge, Bantry Bay

Co. Cork

Survey no. 119	Field code: MIO066 Timed Survey
Location	Snave Bridge
Bay name	Bantry Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (30%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (60%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (stone bridge)
Date and time survey	2-8-2024 08:10
Time searched	00:35
Minutes to low tide	85 min. (before low tide)
GPS start	N51 43.933 W9 27.130
GPS end	N51 43.822 W9 27.272
Distance searched	445 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 380. General habitat: The habitat varied across the survey, specifically between areas of primarily sand and those consisting predominantly of bedrock overgrown by seaweeds.



Fig. 381. Survey track (blue line). No feral Pacific oysters were found.

5.8.7 Dunnamark, Bantry Bay

Co. Cork

Survey no. 120	Field code: MIO067 Timed Survey
Location	Dunnamark
Bay name	Bantry Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (50%)	Pebbles and boulders
Macro algae (20%)	<i>Fucus</i> spp.
Soft substrate (30%)	Mud
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	2-8-2024 08:15
Time searched	00:30
Minutes to low tide	85 min. (before low tide)
GPS start	N51 41.676 W9 26.581
GPS end	N51 41.616 W9 26.852
Distance searched	561 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 382. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and boulders overgrown by seaweeds and those consisting predominantly of mud.

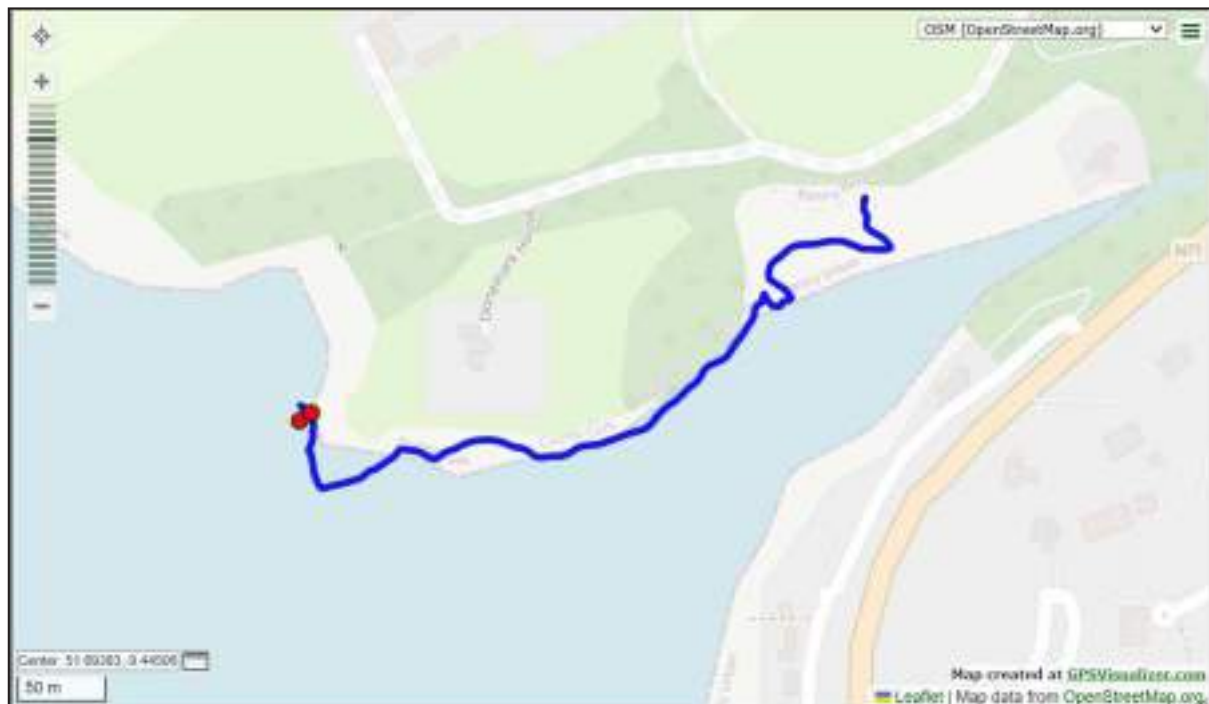


Fig. 383. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 384. Feral Pacific oyster, settled on a boulder.

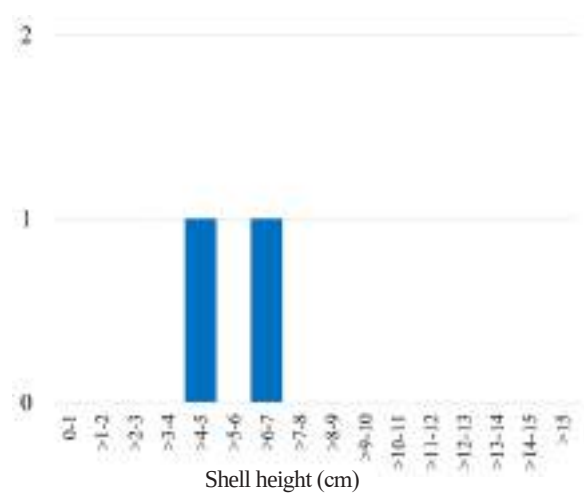


Fig. 385. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9138 (GenBank nr: PX150003); HRM typing: AG_9137		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	39 mm - 65 mm		
Density in complete track (561 m)	0.004 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Pebbles	loose	n.a.	loose	no	1
Total number of oysters:					2
Total number of "whole structure loose" oysters:					1
Total number of "loose" oysters with seaweed (>5cm)					0

5.8.8 The Cove, Bantry Bay

Co. Cork

Survey no. 121	Field code: MIO068 Timed Survey
Location	The Cove
Bay name	Bantry Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Pebbles and boulders
Macro algae (40%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	2-8-2024 08:17
Time searched	00:33
Minutes to low tide	70 min. (before low tide)
GPS start	N51 41.204 W9 27.339
GPS end	N51 41.386 W9 27.552
Distance searched	772 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 386. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles overgrown by seaweeds.



Fig. 387. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 388. Feral Pacific oyster, settled on a pebble with *Fucus vesiculosus* attached.

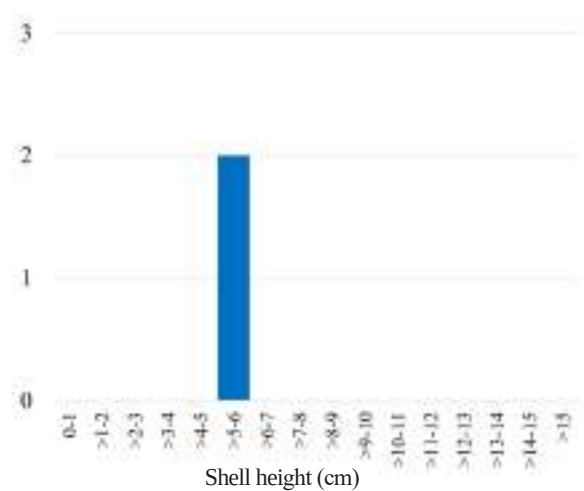


Fig. 389. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_9139 (GenBank nr: PX150004); HRM typing: AG_9140		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	57 mm - 60 mm		
Density in complete track (772 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Pebble	fixed	pebbles	loose	yes (<i>F. vesiculosus</i>)	2
Total number of oysters:					2
Total number of "whole structure loose" oysters:					2
Total number of "loose" oysters with seaweed (>5cm)					2

5.8.9 Kilcrohane Pier, Dunmanus Bay

Co. Cork

Survey no. 122	Field code: MIO071 Timed Survey
Location	Kilcrohane Pier
Bay name	Dunmanus Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (80%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	2-8-2024 09:55
Time searched	00:31
Minutes to low tide	0 min. (during low tide)
GPS start	N51 34.533 W9 41.736
GPS end	N51 34.660 W9 41.669
Distance searched	568 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 390. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.

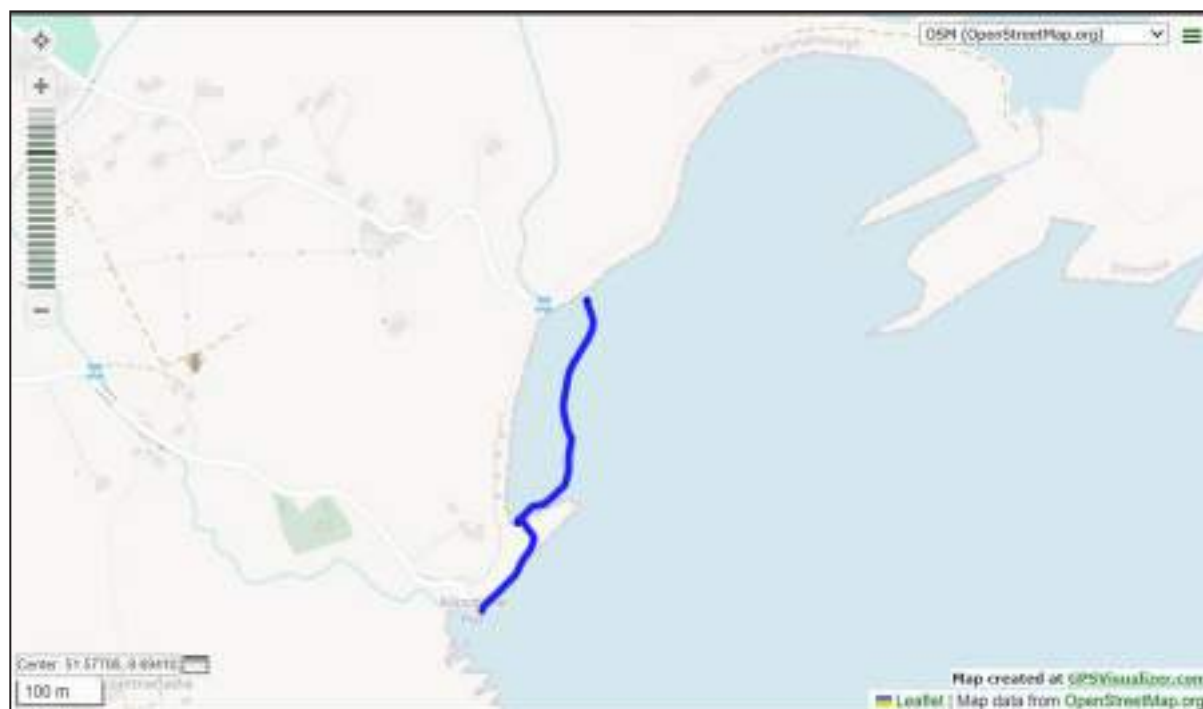


Fig. 391. Survey track (blue line). No feral Pacific oysters were found.

5.8.10 Rossnacaheragh Beach, Dunmanus Bay

Co. Cork

Survey no. 123	Field code: MIO070 Timed Survey
Location	Rossnacaheragh Beach
Bay name	Dunmanus Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (80%)	Boulders and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	2-8-2024 09:42
Time searched	00:31
Minutes to low tide	0 min. (during low tide)
GPS start	N51 36.313 W9 36.284
GPS end	N51 36.472 W9 35.807
Distance searched	794 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 392. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 393. Survey track (blue line). No feral Pacific oysters were found.

5.8.11 Durrus Pier, Dunmanus Bay

Co. Cork

Survey no. 124	Field code: MIO069 Timed Survey
Location	Durrus Pier
Bay name	Dunmanus Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	2-8-2024 09:34
Time searched	00:32
Minutes to low tide	4 min. (before low tide)
GPS start	N51 37.053 W9 32.429
GPS end	N51 36.975 W9 32.813
Distance searched	615 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: Two flat oysters were found loose on the pebbles	



Fig. 394. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles. Two flat oysters were found loose.



Fig. 395. Survey track (blue line). No feral Pacific oysters were found. Two flat oysters were found. Green circles indicate the locations where these flat oysters were found.

5.8.12 NW of Crewe, Long Island

Co. Cork

Survey no. 125	Field code: MIO139 Timed Survey
Location	NW of Crewe
Bay name	Long Island
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (20%)	Boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (50%)	Mud
Presence oyster culture	Absent
Presence artificial structures	Yes (concrete box)
Date and time survey	29-7-2025 13:40
Time searched	00:30
Minutes to low tide	60 min. (before low tide)
GPS start	N51 30.634 W9 35.071
GPS end	N51 30.874 W9 35.083
Distance searched	777 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 396. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud with some boulders overgrown.



Fig. 397. Survey track (blue line). No feral Pacific oysters were found.

5.8.13 Schull harbour, Roaringwater Bay

Co. Cork

Survey no. 126	Field code: MIO140 Timed Survey
Location	Schull harbour
Bay name	Roaringwater Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (80%)	Bedrock and pebbles
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	Yes (pier and harbour)
Date and time survey	29-7-2025 14:42
Time searched	00:38
Minutes to low tide	0 min. (during low tide)
GPS start	N51 31.782 W9 32.101
GPS end	N51 31.737 W9 32.221
Distance searched	508 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 398. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly of bedrock overgrown by seaweeds.

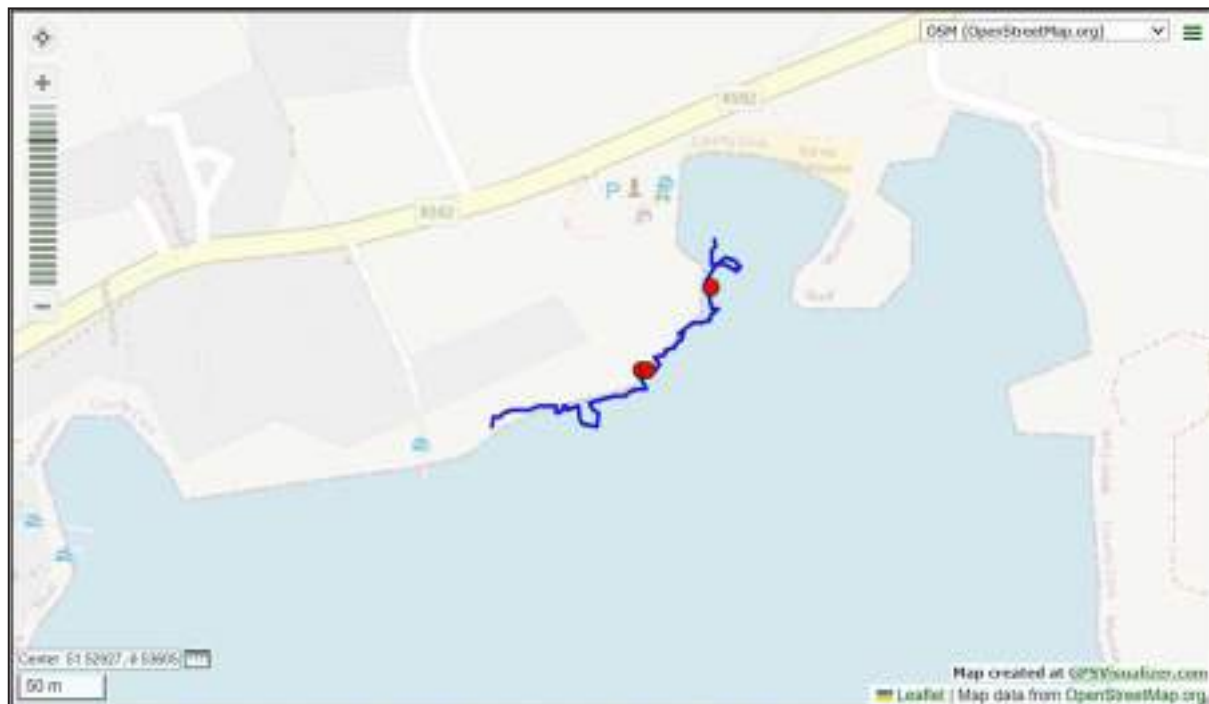


Fig. 399. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 400. Feral Pacific oyster, settled on bedrock.

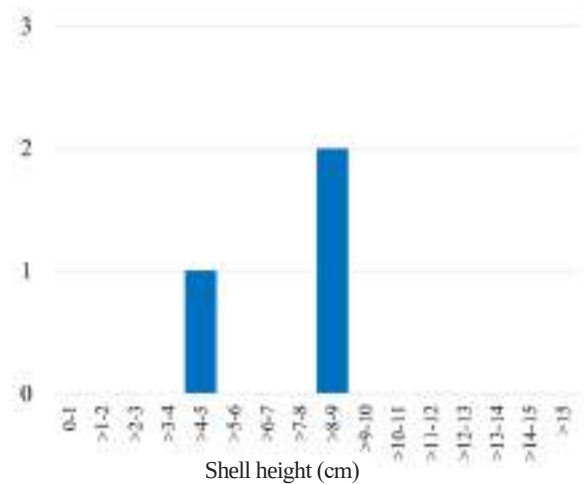


Fig. 401. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	16S sequence: AG_10304 (GenBank nr: PX583007); HRM typing: AG_10302 / AG_10303		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	42 mm - 81 mm		
Density in complete track (508 m)	0.006 /m ² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	3
Total number of oysters:					3
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.8.14 Poulgorm Bay, Roaringwater Bay

Co. Cork

Survey no. 127	Field code: MIO141 Timed Survey
Location	Poulgorm Bay
Bay name	Roaringwater Bay
Bay residence time (days)	6.05 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (40%)	Bedrock and boulders
Macro algae (30%)	<i>Ascophyllum nodosum</i>
Soft substrate (30%)	Mud
Presence oyster culture	Absent
Presence artificial structures	Yes (stone wall)
Date and time survey	29-7-2025 16:00
Time searched	00:35
Minutes to low tide	50 min. (after low tide)
GPS start	N51 32,931 W9 25,54
GPS end	N51 33.030 W9 25.557
Distance searched	415 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 402. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock overgrown by seaweeds and those consisting predominantly of mud.



Fig. 403. Survey track (blue line). No feral Pacific oysters were found.

5.8.15 Heir Island, Roaringwater Bay

Co. Cork

Survey no. 128	Field code: MIO152 Timed Survey
Location	Heir Island
Bay name	Roaringwater Bay
Bay residence time (days)	6.05 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (60%)	Sand
Presence oyster culture	Far (1.6 km)
Presence artificial structures	Yes (pier and harbour)
Date and time survey	1-8-2025 16:58
Time searched	00:40
Minutes to low tide	0 min. (during low tide)
GPS start	N51 29.983 W9 26.126
GPS end	N51 30.027 W9 25.478
Distance searched	1094 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 404. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock overgrown by seaweeds and those consisting predominantly of sand.

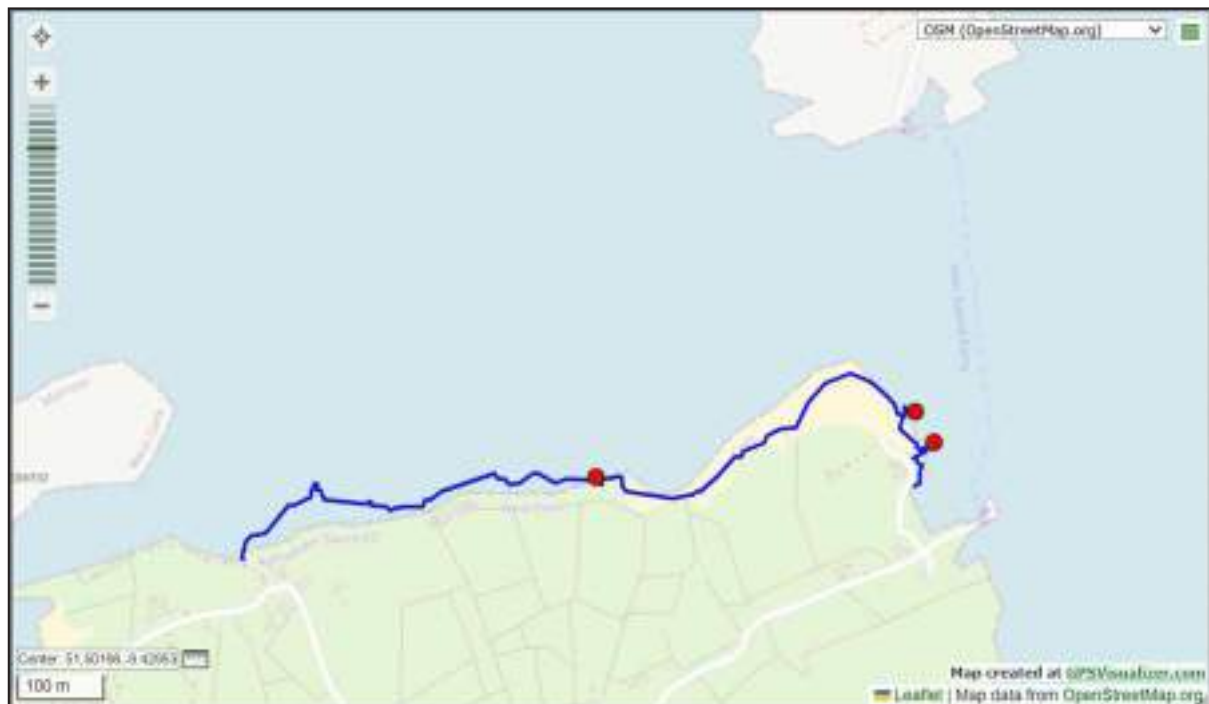


Fig. 405. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 406. Feral Pacific oyster, settled on bedrock.

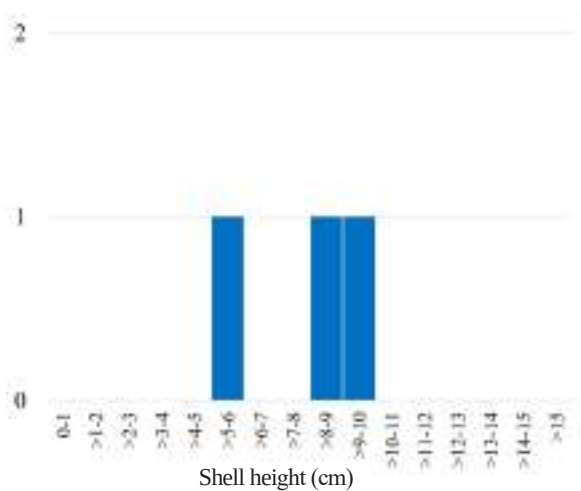


Fig. 407. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	16S sequence: AG_10320 (GenBank nr: PX583015); HRM typing: AG_10321 / AG_10322		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	53 mm - 94 mm		
Density in complete track (1094 m)	0.003 /m ² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	3
Total number of oysters:					3
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.8.16 Cunnamore Pier, Roaringwater Bay

Co. Cork

Survey no. 129	Field code: MIO144 Timed Survey
Location	Cunnamore Pier
Bay name	Roaringwater Bay
Bay residence time (days)	6.05 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (40%)	Bedrock, boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp.
Soft substrate (20%)	Sand with pebbles
Presence oyster culture	Far (1.9 km)
Presence artificial structures	Yes (pier and harbour)
Date and time survey	30-7-2025 14:50
Time searched	00:32
Minutes to low tide	28 min. (before low tide)
GPS start	N51 30.270 W9 25.458
GPS end	N51 30.464 W9 25.289
Distance searched	788 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster was found.	

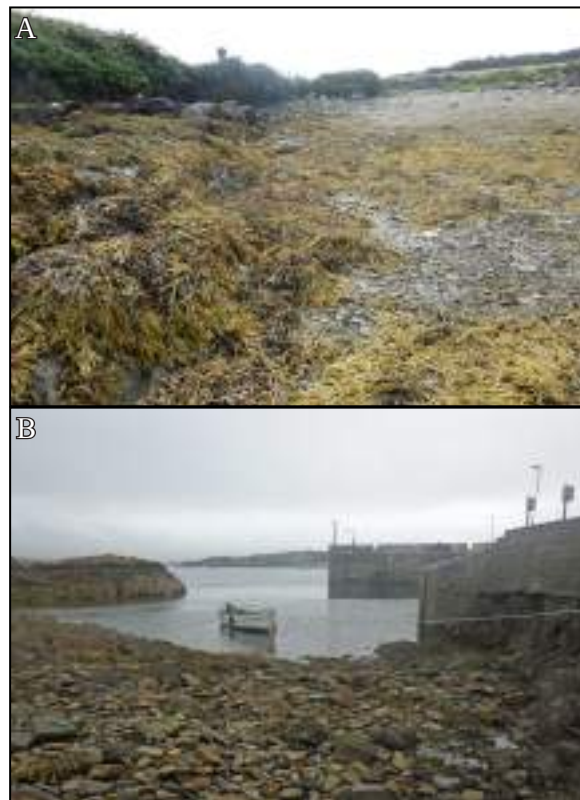


Fig. 408. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly of bedrock.



Fig. 409. Survey track (blue line). Three feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 410. Feral Pacific oyster, settled on bedrock.



Fig. 411. Flat oyster, loose on the substrate.

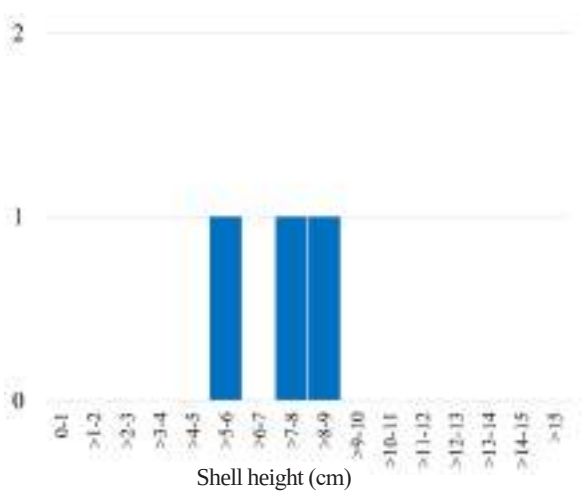


Fig. 412. Size-frequencies of Pacific oysters in 1 cm size intervals (n=3).

Molecular analyses	16S sequence: AG_10307 (GenBank nr: PX583008) AG_10309 (GenBank nr: PX583009); HRM typing: AG_10308		
<i>M. gigas</i> oysters measured	3		
Minimum / maximum size (mm)	58 mm - 89 mm		
Density in complete track (788 m)	0.004 /m² (n=3)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m²); Abundant (10-99/m²); Common (1-9/m²); Frequent (0.1-0.9/m²); Occasional (0.01-0.09/m²); Rare (< 0.009/m²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	3
Total number of oysters:					3
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.8.17 Turkhead, Roaringwater Bay

Co. Cork

Survey no. 130	Field code: MIO145 Timed Survey
Location	Turkhead
Bay name	Roaringwater Bay
Bay residence time (days)	6.05 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (40%)	Bedrock
Macro algae (60%)	<i>Ascophyllum nodosum</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (650 m)
Presence artificial structures	Yes (pier)
Date and time survey	30-7-2025 16:03
Time searched	00:30
Minutes to low tide	13 min. (after low tide)
GPS start	N51 30.408 W9 23.579
GPS end	N51 30.37 W9 23.843
Distance searched	538 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 413. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.



Fig. 414. Survey track (blue line). No feral Pacific oysters were found.

5.8.18 Baltimore Pier, Baltimore Harbour

Co. Cork

Survey no. 131	Field code: MIO151 Timed Survey
Location	Baltimore Pier
Bay name	Baltimore Harbour
Bay residence time (days)	6.05 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (80%)	Pebbles and boulders
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (2.1 km)
Presence artificial structures	Yes (pier)
Date and time survey	31-7-2025 15:35
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N51 29.296 W9 22.245
GPS end	N51 29.281 W9 21.908
Distance searched	546 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 415. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 416. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 417. Feral Pacific oyster, settled on a boulder.

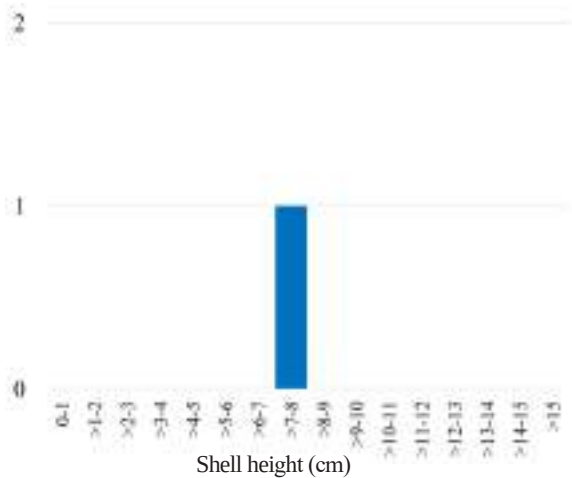


Fig. 418. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_10312 (GenBank nr: PX583012).		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	71 mm		
Density in complete track (546 m)	0.002 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.8.19 Lough Hyne Forest, Lough Hyne

Co. Cork

Survey no. 132	Field code: MIO150 Timed Survey
Location	Lough Hyne Forest
Bay name	Lough Hyne
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (90%)	Pebbles and boulders
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	Yes (pier, stone wall)
Date and time survey	31-7-2025 16:36
Time searched	00:30
Minutes to low tide	36 min. (after low tide)
GPS start	N51 30.387 W9 18.397
GPS end	N51 30.324 W9 18.473
Distance searched	220 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks: Four flat oysters (<i>Ostrea edulis</i>) were found loose on the substrate. The DNA of one specimen was sequenced (AG_10317, GenBank nr: PX462782).	



Fig. 419. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.



Fig. 420. Survey track (blue line). Five feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Four flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 421. Feral Pacific oyster, settled on a boulder.



Fig. 422. Flat oyster, loose on the substrate.

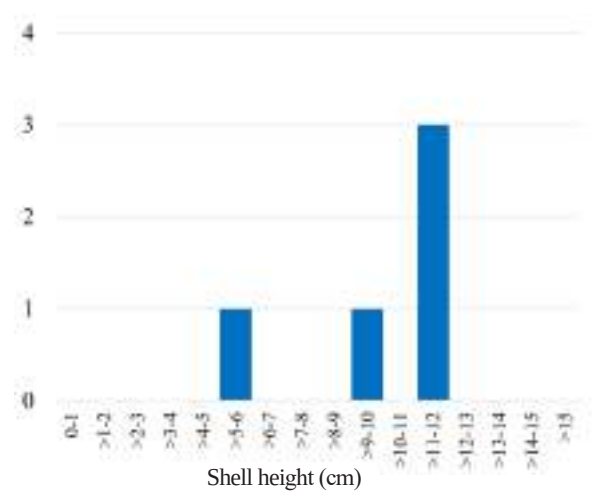


Fig. 423. Size-frequencies of Pacific oysters in 1 cm size intervals (n=5).

Molecular analyses	16S sequence: AG_10313 (GenBank nr: PX583013); AG_10316 (GenBank nr: PX583014) HRM typing: AG_10314 / AG_10315		
<i>M. gigas</i> oysters measured	5		
Minimum / maximum size (mm)	53 mm - 120 mm		
Density in complete track (220 m)	0.023 /m ² (n=5)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.100 /m ² (n=3)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	3
Pebble	loose	n.a.	loose	no	2
Total number of oysters:					5
Total number of “whole structure loose” oysters:					2
Total number of “loose” oysters with seaweed (>5cm)					0

5.8.20 Reen Pier, Castle Haven

Co. Cork

Survey no. 133	Field code: MIO157 Timed Survey
Location	Reen Pier
Bay name	Castle Haven
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (40%)	Pebbles and boulders
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (50%)	Mud with shells and pebbles
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	7-8-2025 11:17
Time searched	00:33
Minutes to low tide	37 min. (after low tide)
GPS start	N51 31.912 W9 9.967
GPS end	N51 32.119 W9 9.847
Distance searched	973 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	One flat oyster was found. The DNA was sequenced (AG_10329, GenBank nr: PX462783).



Fig. 424. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and those consisting predominantly of mud with some boulders on it.



Fig. 425. Survey track (blue line). Four feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.



Fig. 426. Feral Pacific oyster, settled on a old motor stuck in the mud.



Fig. 427. Flat oyster with macro algae attached.

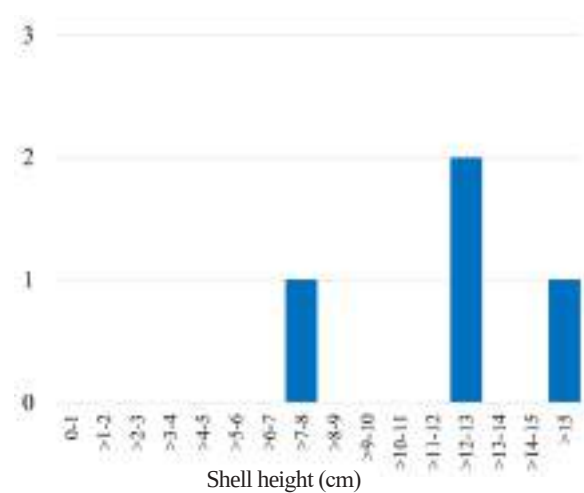


Fig. 428. Size-frequencies of Pacific oysters in 1 cm size intervals (n=4).

Molecular analyses	16S sequence: AG_10332 (GenBank nr: PX583018); HRM typing: AG_10330 / AG_10331 / AG_10333		
<i>M. gigas</i> oysters measured	4		
Minimum / maximum size (mm)	73 mm - 155 mm		
Density in complete track (973 m)	0.004 /m ² (n=4)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.100 /m ² (n=3)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	1
artificial structure (old outboard motor)	fixed	n.a.	fixed	n.a.	2
Pebbles	loose	n.a.	loose	yes (<i>F. vesiculosus</i>)	1
Total number of oysters:					4
Total number of "whole structure loose" oysters:					1
Total number of "loose" oysters with seaweed (>5cm)					1

5.8.21 Myross, Bunnaglanna Bay

Co. Cork

Survey no. 134	Field code: MIO156 Timed Survey
Location	Myross
Bay name	Bunnaglanna Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (30%)	Bedrock, boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (60%)	Mud with pebbles
Presence oyster culture	Absent
Presence artificial structures	Yes (ramp and stone wall)
Date and time survey	7-8-2025 10:39
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N51 31.694 W9 9.061
GPS end	N51 31.721 W9 8.977
Distance searched	1061 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks:	One flat oysters was found. The DNA of this specimen was sequenced (AG_10328).



Fig. 429. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock overgrown by seaweeds and those consisting predominantly of mud with pebbles.



Fig. 430. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

5.8.22 Keelbeg Pier, Glandor Bay

Co. Cork

Survey no. 135	Field code: MIO155 Timed Survey
Location	Keelbeg Pier
Bay name	Glandor Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Pebbles and boulders
Macro algae (20%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand with gravel
Presence oyster culture	Absent
Presence artificial structures	Yes (harbour)
Date and time survey	7-8-2025 9:25
Time searched	00:42
Minutes to low tide	35 min. (before low tide)
GPS start	N51 33.532 W9 8.386
GPS end	N51 33.520 W9 8.071
Distance searched	624 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	Yes
Remarks:	Two flat oysters were found loose on the sand. The DNA of one specimen was sequenced (AG_10336, GenBank nr: PX462784).



Fig. 431. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.

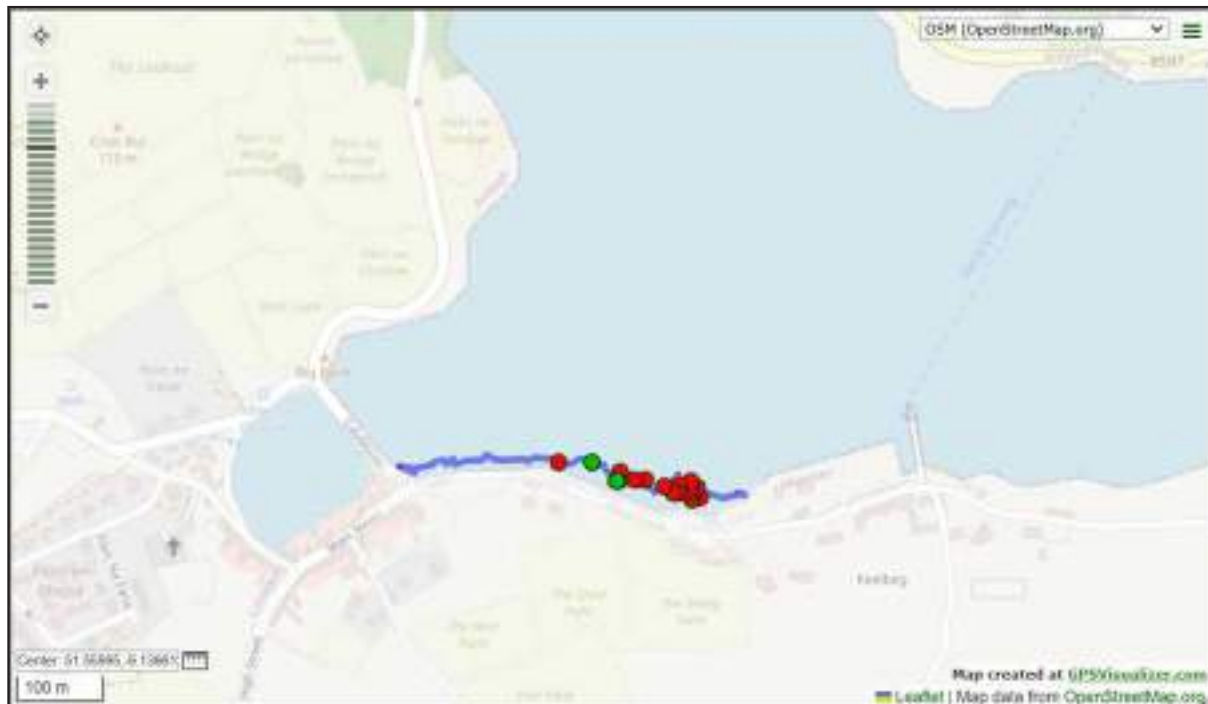


Fig. 432. Survey track (blue line). 15 feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found. Two flat oysters were found. Green circles indicate the locations where these flat oysters were found.



Fig. 433. Feral Pacific oyster, settled on a boulder.



Fig. 434. Flat oyster loose on the substrate.

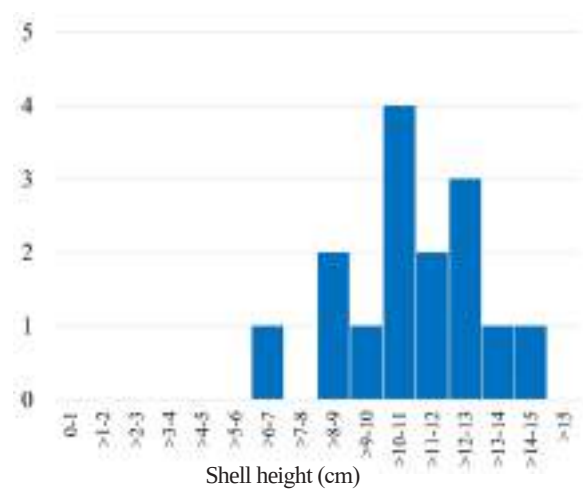


Fig. 435. Size-frequencies of Pacific oysters in 1 cm size intervals (n=15).

Molecular analyses	16S sequence: AG_10334 (GenBank nr: PX583019); HRM typing: AG_10335 / AG_10337-10346		
<i>M. gigas</i> oysters measured	15		
Minimum / maximum size (mm)	65 mm - 144 mm		
Density in complete track (624 m)	0.024 /m ² (n=15)	Occasional	Based on GPS locs
Highest density in 30 continuous meters	0.233 /m ² (n=7)	Frequent	Based on GPS locs
Highest density in 5 continuous meters	0.800 /m ² (n=4)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	10
Oyster shell	fixed	boulder	fixed	n.a.	1
Oyster shell	fixed	pebbles	loose	yes (<i>F. vesiculosus</i>)	1
Pebble	fixed	sand	loose	yes (<i>F. vesiculosus</i>)	2
Sand	loose	n.a.	loose	no	1
Total number of oysters:					15
Total number of "whole structure loose" oysters:					4
Total number of "loose" oysters with seaweed (>5cm)					3

5.8.23 Duneen Bay Beach, Duneen Bay

Co. Cork

Survey no. 136	Field code: MIO146 Timed Survey
Location	Duneen Bay Beach
Bay name	Duneen Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (80%)	Bedrock
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	30-7-2025 17:26
Time searched	00:00
Minutes to low tide	76 min. (after low tide)
GPS start	N51 34.738 W8 52.335
GPS end	N51 34.674 W8 52.177
Distance searched	410 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 436. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.



Fig. 437. Survey track (blue line). No feral Pacific oysters were found.

5.8.24 Blind Strand, Blindstrand Bay

Co. Cork

Survey no. 137	Field code: MIO147 Timed Survey
Location	Blind Strand
Bay name	Blindstrand Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Bedrock, boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (stone wall)
Date and time survey	30-7-2025 16:24
Time searched	00:30
Minutes to low tide	14 min. (after low tide)
GPS start	N51 36.600 W8 41.315
GPS end	N51 36.728 W8 41.364
Distance searched	386 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 438. General habitat: The habitat varied across the survey, specifically between areas of primarily dominated by bedrock overgrown by seaweeds and boulders near a stone wall.



Fig. 439. Survey track (blue line). No feral Pacific oysters were found.

5.8.25 Castlepark marina, Kinsale Bay

Co. Cork

Survey no. 138	Field code: MIO149 Timed Survey
Location	Castlepark marina
Bay name	Kinsale Bay
Bay residence time (days)	27.30 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	0-50 m
Hard substrate (70%)	Boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Far (2.1 km)
Presence artificial structures	Yes (marina)
Date and time survey	30-7-2025 14:10
Time searched	00:30
Minutes to low tide	80 min. (before low tide)
GPS start	N51 41.940 W8 30.880
GPS end	N51 41.649 W8 31.077
Distance searched	803 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 440. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.



Fig. 441. Survey track (blue line). No feral Pacific oysters were found.

5.8.26 Castletown, Oysterhaven Bay

Co. Cork

Survey no. 139	Field code: MIO148 Timed Survey
Location	Castletown
Bay name	Oysterhaven Bay
Bay residence time (days)	10.90 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	100-150 m
Hard substrate (60%)	Boulders and pebbles
Macro algae (10%)	<i>Fucus spp.</i>
Soft substrate (30%)	Mud
Presence oyster culture	Closeby (0 m)
Presence artificial structures	Yes (trestles)
Date and time survey	30-7-2025 15:00
Time searched	00:30
Minutes to low tide	55 min. (before low tide)
GPS start	N51 42.553 W8 26.534
GPS end	N51 42.347 W8 26.512
Distance searched	735 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 442. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders.



Fig. 443. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 444. Feral Pacific oyster, settled on a boulder.

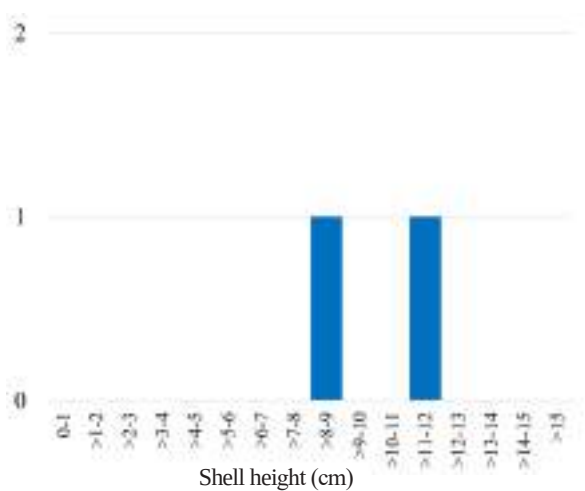


Fig. 445. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_10310 (GenBank nr: PX583010); AG_10311 (GenBank nr: PX583011);		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	83 mm - 115 mm		
Density in complete track (735 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.400 /m ² (n=2)	Frequent	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.8.27 American Pier, Cork Bay

Co. Cork

Survey no. 140	Field code: MIO154 Timed Survey
Location	American Pier
Bay name	Cork Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (60%)	Bedrock, boulders and pebbles
Macro algae (30%)	<i>Ascophyllum nodosum</i> and <i>Fucus spp.</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (7.5 km)
Presence artificial structures	Yes (ramp and marina)
Date and time survey	6-8-2025 11:00
Time searched	00:30
Minutes to low tide	20 min. (after low tide)
GPS start	N51 50.717 W8 18.699
GPS end	N51 50.583 W8 19.014
Distance searched	602 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 446. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and boulders.



Fig. 447. Survey track (blue line). Two feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 448. Feral Pacific oyster, settled on a boulder.

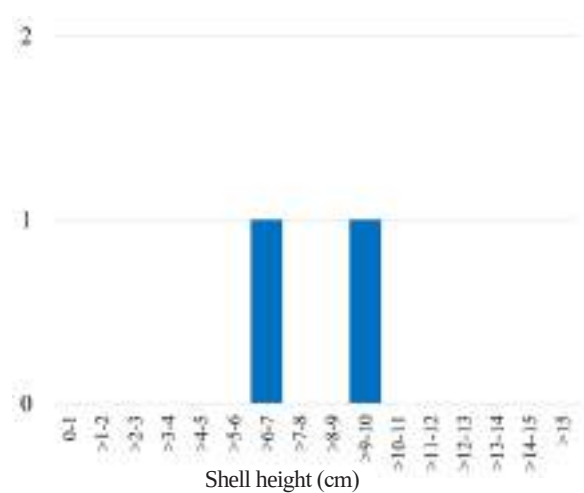


Fig. 449. Size-frequencies of Pacific oysters in 1 cm size intervals (n=2).

Molecular analyses	16S sequence: AG_10326 (GenBank nr: PX583016); AG_10327 (GenBank nr: PX583017)		
<i>M. gigas</i> oysters measured	2		
Minimum / maximum size (mm)	62 mm - 99 mm		
Density in complete track (602 m)	0.003 /m ² (n=2)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Bedrock	fixed	n.a.	fixed	n.a.	2
Total number of oysters:					2
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.8.28 Roche’s Point, Cork Bay

Co. Cork

Survey no. 141	Field code: MIO153 Timed Survey
Location	Roche's Point
Bay name	Cork Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (50%)	Bedrock and boulders
Macro algae (40%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Far (9 km)
Presence artifical structures	No
Date and time survey	6-8-2025 09:41
Time searched	00:30
Minutes to low tide	9 min. (before low tide)
GPS start	N51 47,679 W8 15,163
GPS end	N51 47,831 W8 15,197
Distance searched	431 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 450. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.

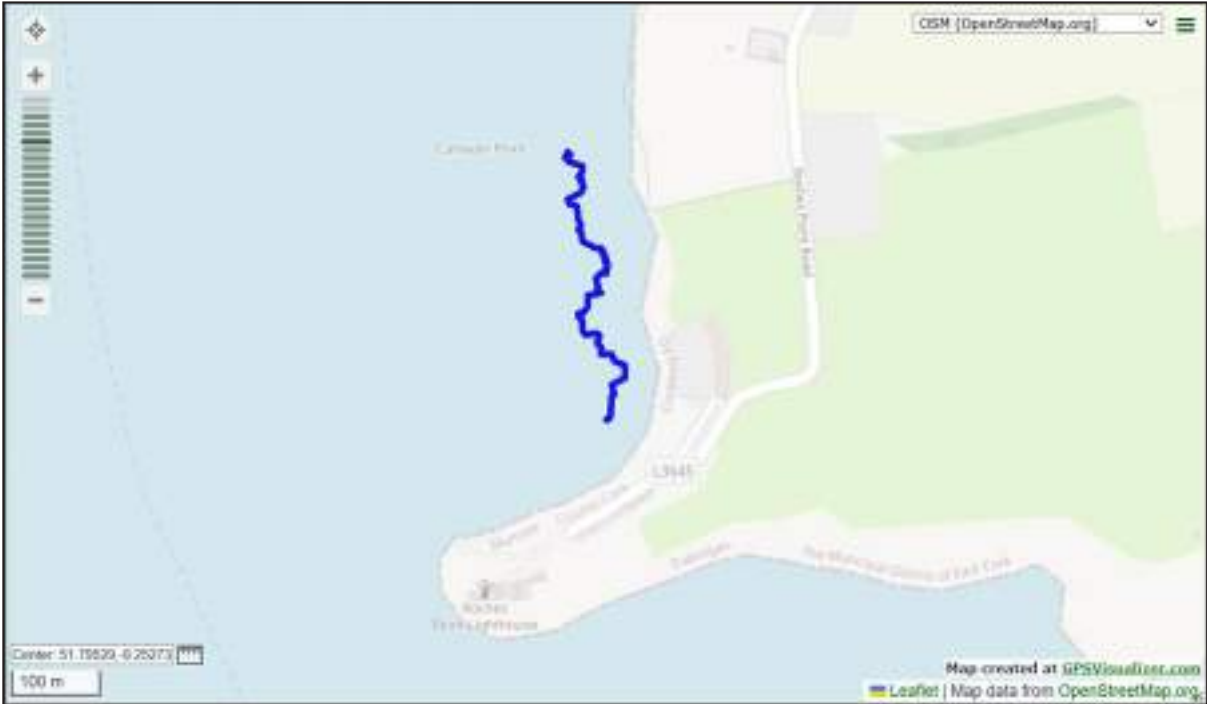


Fig. 451. Survey track (blue line). No feral Pacific oysters were found.

5.8.29 Youghal lighthouse, Youghal Bay

Co. Cork

Survey no. 142	Field code: MIO143 Timed Survey
Location	Youghal lighthouse
Bay name	Youghal Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (30%)	Bedrock
Macro algae (0%)	n.a.
Soft substrate (70%)	Sand
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	29-7-2025 16:13
Time searched	00:30
Minutes to low tide	23 min. (after low tide)
GPS start	N51 56.770 W7 50.570
GPS end	N51 56.484 W7 50.521
Distance searched	706 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 452. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and those consisting predominantly of sand.



Fig. 453. Survey track (blue line). No feral Pacific oysters were found.

5.9 County Waterford

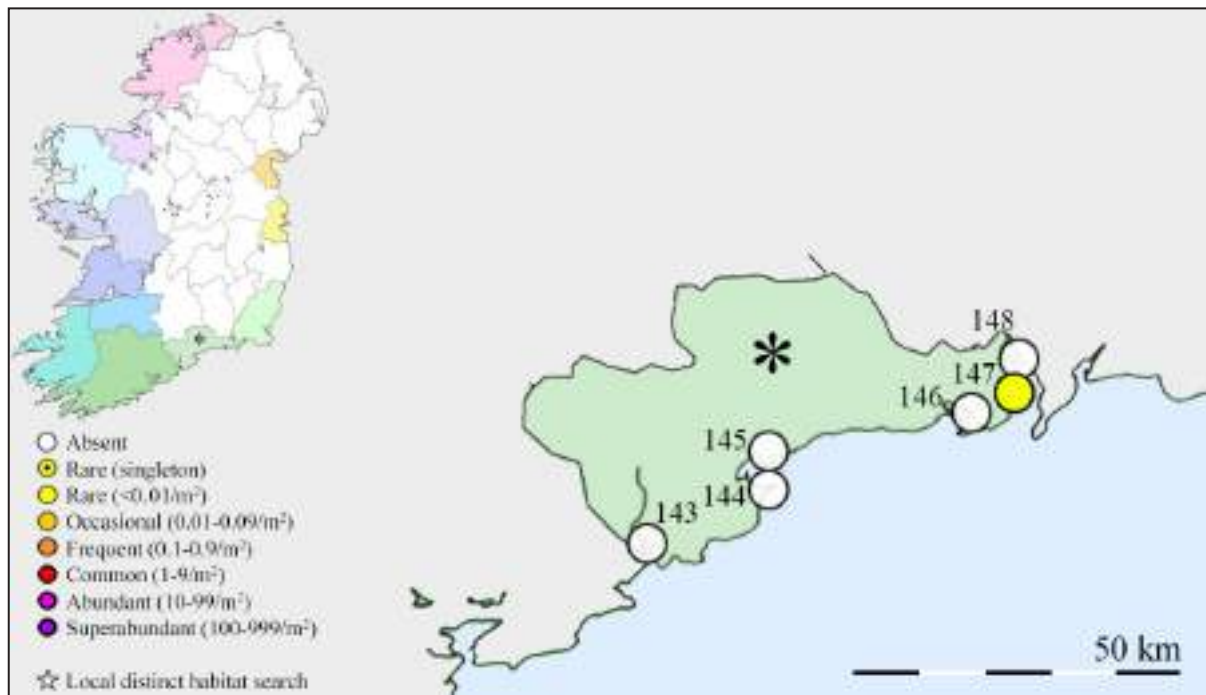


Fig. 454. Surveys in County Waterford

Between 2024 and 2025, 6 surveys were carried out in Co. Waterford, during which a total of 7 km of the shoreline was searched (Fig. 454). During only one of these surveys, on Woodstown Strand, Waterford Harbour (survey 147), 4 feral oysters were found. They had settled on boulders in the intertidal, close to an oyster farm. The shell sizes, which vary from 5 to 9 cm, imply that the feral oysters there represent different age groups and are, in fact, spawning. Kochmann *et al.* (2013), in 2009, also conducted a survey at this location but did not find feral oysters there or anywhere else in Co. Waterford. It remains uncertain when feral oysters have first become established in Co. Waterford.

5.9.1 Youghal Bridge, Youghal Bay

Co. Waterford

Survey no. 143	Field code: MIO142 Timed Survey
Location	Youghal Bridge
Bay name	Youghal Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (20%)	Boulders and pebbles
Macro algae (70%)	<i>Ascophyllum nodosum</i>
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (stone wall)
Date and time survey	29-7-2025 15:17
Time searched	00:30
Minutes to low tide	3 min. (before low tide)
GPS start	N51 58.698 W7 50.957
GPS end	N51 58.613 W7 50.388
Distance searched	662 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 455. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders overgrown with seaweeds.



Fig. 456. Survey track (blue line). No feral Pacific oysters were found.

5.9.2 Ballynagaul Beach, Dungarvan Bay

Co. Waterford

Survey no. 144	Field code: MIO090 Timed Survey
Location	Ballynagaul Beach
Bay name	Dungarvan Bay
Bay residence time (days)	5.19 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (40%)	Bedrock, boulders and pebbles
Macro algae (50%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand
Presence oyster culture	Closeby (450 m)
Presence artificial structures	Yes (pier)
Date and time survey	9-8-2024 14:40
Time searched	00:47
Minutes to low tide	3 min. (before low tide)
GPS start	N52 03.050 W7 33.966
GPS end	N52 03.042 W7 33.960
Distance searched	1810 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 457. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock overgrown by seaweeds.

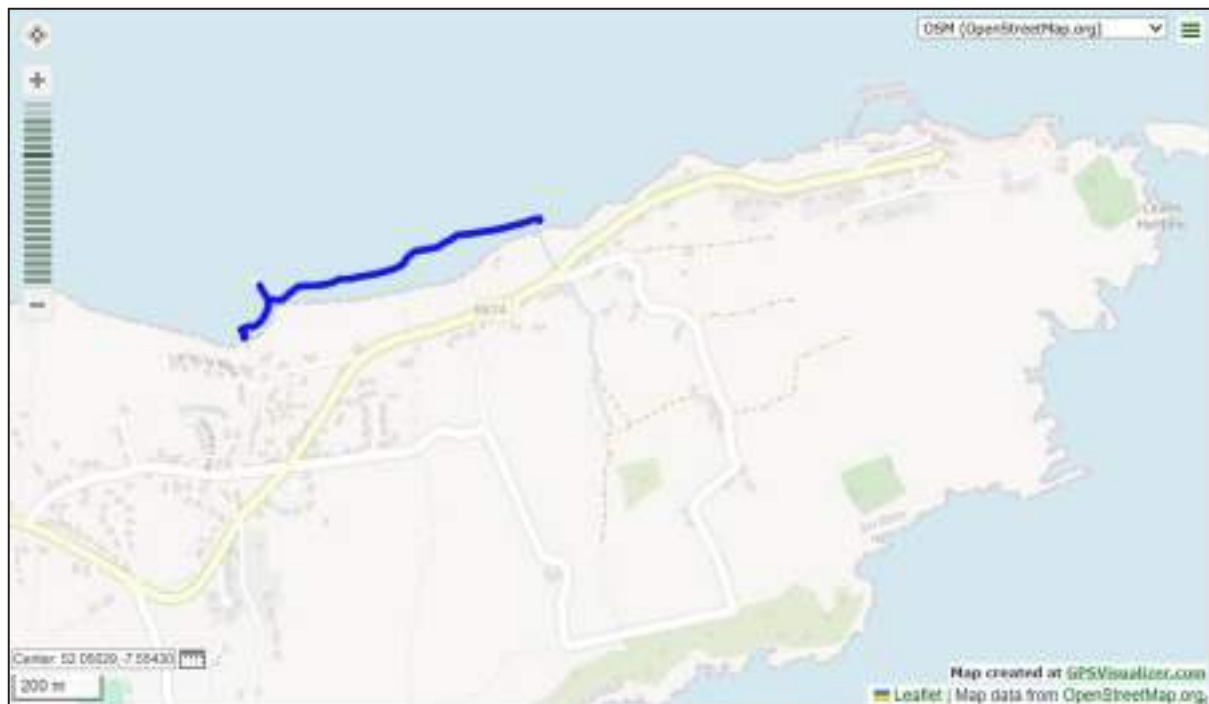


Fig. 458. Survey track (blue line). No feral Pacific oysters were found.

5.9.3 Ballinacourty Harbour, Dungarvan Bay

Co. Waterford

Survey no. 145	Field code: MIO091 Timed Survey
Location	Ballinacourty Harbour
Bay name	Dungarvan Bay
Bay residence time (days)	5.19 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (50%)	Pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand
Presence oyster culture	Far (1.2 km)
Presence artificial structures	Yes (pier)
Date and time survey	9-8-2024 15:45
Time searched	00:40
Minutes to low tide	45 min. (after low tide)
GPS start	N52 05.362 W7 34.303
GPS end	N52 04.894 W7 34.141
Distance searched	1622 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 459. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.

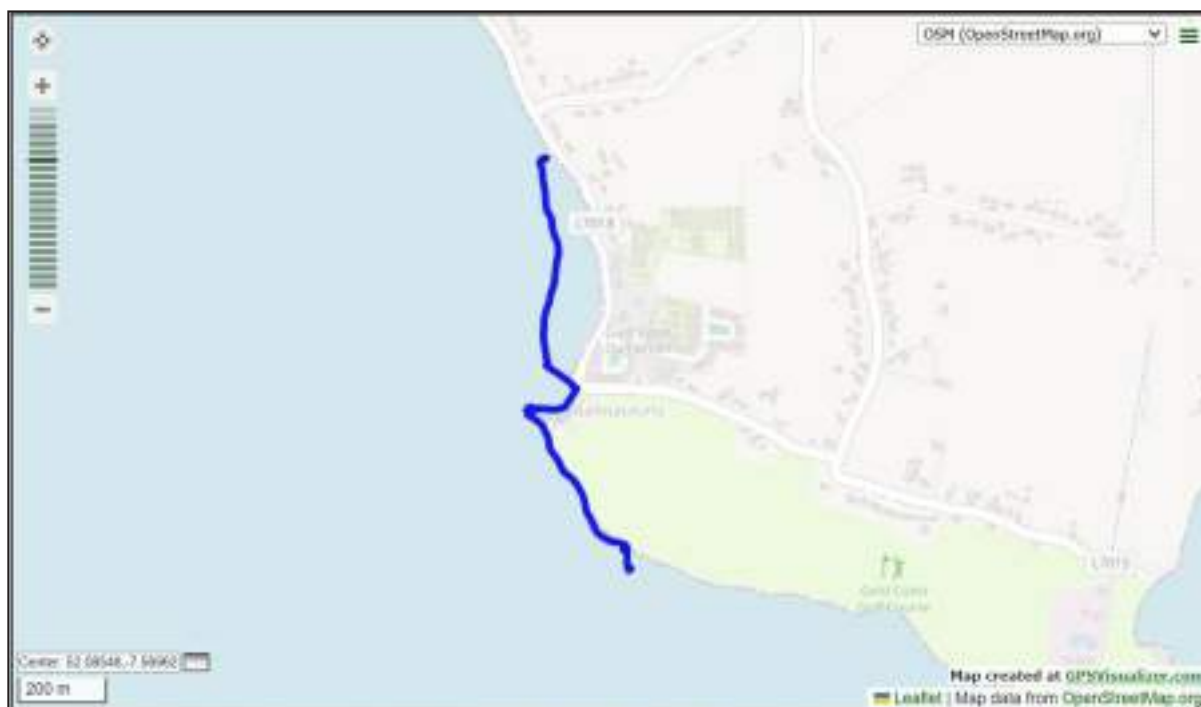


Fig. 460. Survey track (blue line). No feral Pacific oysters were found.

5.9.4 Tramore dunes and Back Beach, Tramore Bay

Co. Waterford

Survey no. 146	Field code: MIO162 Timed Survey
Location	Tramore dunes and Back Beach
Bay name	Tramore Bay
Bay residence time (days)	8.60 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (60%)	Pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	Sand with shells and pebbles
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	11-8-2025 12:23
Time searched	00:32
Minutes to low tide	20 min. (before low tide)
GPS start	N52 9,176 W7 4,994
GPS end	N52 9,351 W7 4,786
Distance searched	943 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 461. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.



Fig. 462. Survey track (blue line). No feral Pacific oysters were found.

4.9.5 Woodstown Strand, Waterford Harbour

Co. Waterford

Survey no. 147	Field code: MIO164 Timed survey
Location	Woodstown Strand
Bay name	Waterford Harbour
Bay residence time (days)	15.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Boulders
Macro algae (20%)	<i>Fucus</i> spp. and <i>Ulva</i> spp.
Soft substrate (50%)	Mud
Presence oyster culture	Closeby (100 m)
Presence artificial structures	No
Date and time survey	11-08-2025 14:11
Time searched	33 minutes
Minutes to low tide	0 min. (during low tide)
GPS start	N52 11.343 W6 58.965
GPS end	N52 11.192 W6 58.909
Distance searched	693 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 463. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders on mud.

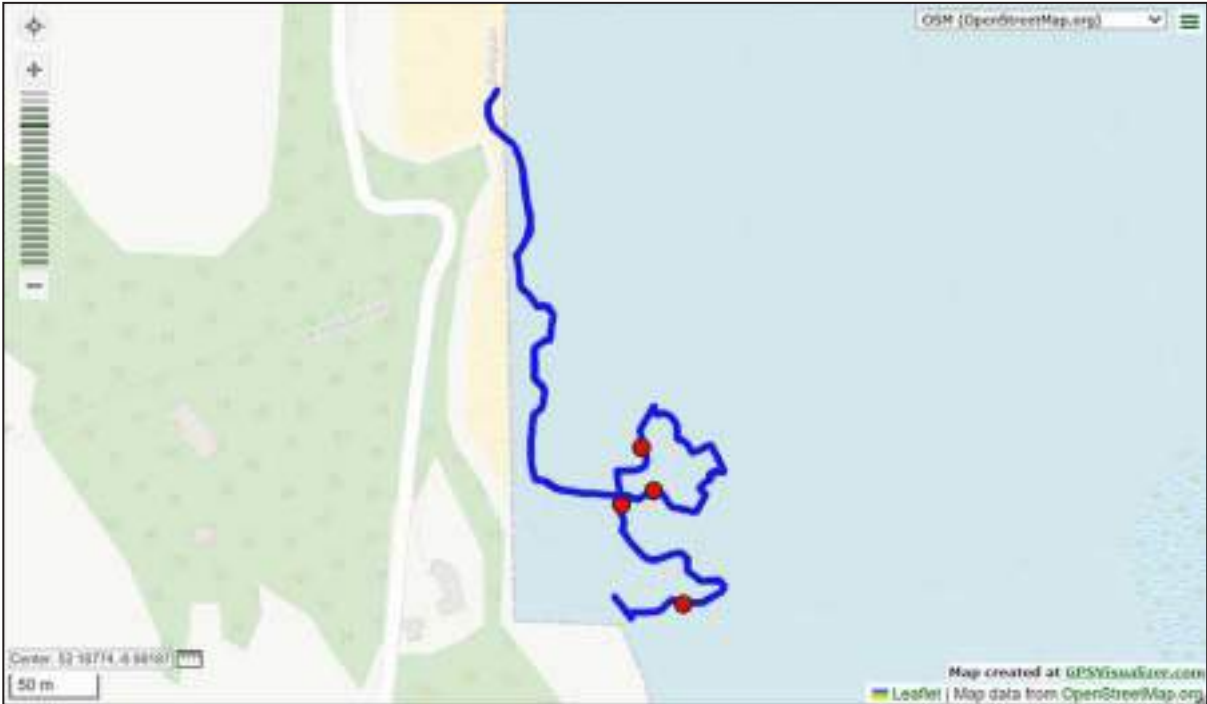


Fig. 464. Survey track (blue line). Four feral Pacific oysters were found. Red circles indicate the locations where these Pacific oysters were found.



Fig. 465. Feral Pacific oyster, settled on a boulder.

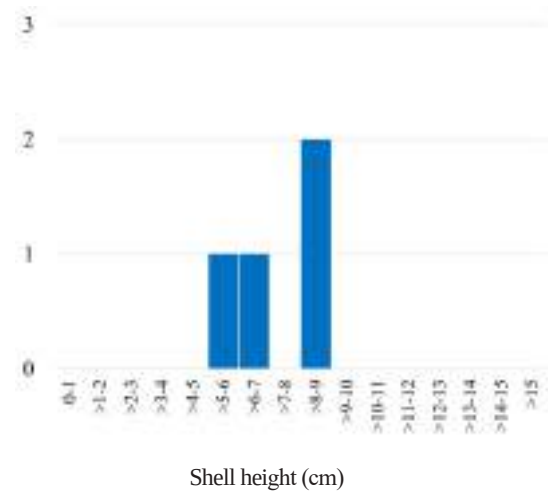


Fig. 466. Size-frequencies of Pacific oysters in 1 cm size intervals (n=4).

Molecular analyses	16S sequence: AG_10351 (GenBank nr: PX583021); HRM typing: AG_10349 / AG_10350 / AG_10351 / AG_10352		
<i>M. gigas</i> oysters measured	4		
Minimum / maximum size (mm)	60 mm - 89 mm		
Density in complete track (693 m)	0.006 /m ² (n=4)	Rare	Based on GPS locs
Highest density in 30 continuous meters	0.067 /m ² (n=2)	Occasional	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²): Abundant (10-99/m ²): Common (1-9/m ²): Frequent (0.1-0.9/m ²): Occasional (0.01-0.09/m ²): Rare (< 0.009/m ²): Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	Whole structure: loose / fixed	Attached macro-algae (>5cm)	Number of oysters
Boulder	fixed	n.a.	fixed	n.a.	4
Total number of oysters:					4
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.9.6 Passage East Beach, Waterford Harbour

Co. Waterford

Survey no. 148	Field code: MIO163 Timed Survey
Location	Passage East Beach
Bay name	Waterford Harbour
Bay residence time (days)	15.70 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (10%)	Fucus vesiculosus
Soft substrate (60%)	Sand
Presence oyster culture	far (3.5 km)
Presence artifical structures	Yes (water outlet)
Date and time survey	11-8-2025 13:28
Time searched	00:30
Minutes to low tide	15 min. (after low tide)
GPS start	N52 14,246 W6 58,294
GPS end	N52 13,93 W6 58,195
Distance searched	874 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 467. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders overgrown by seaweeds and those consisting predominantly of sand.

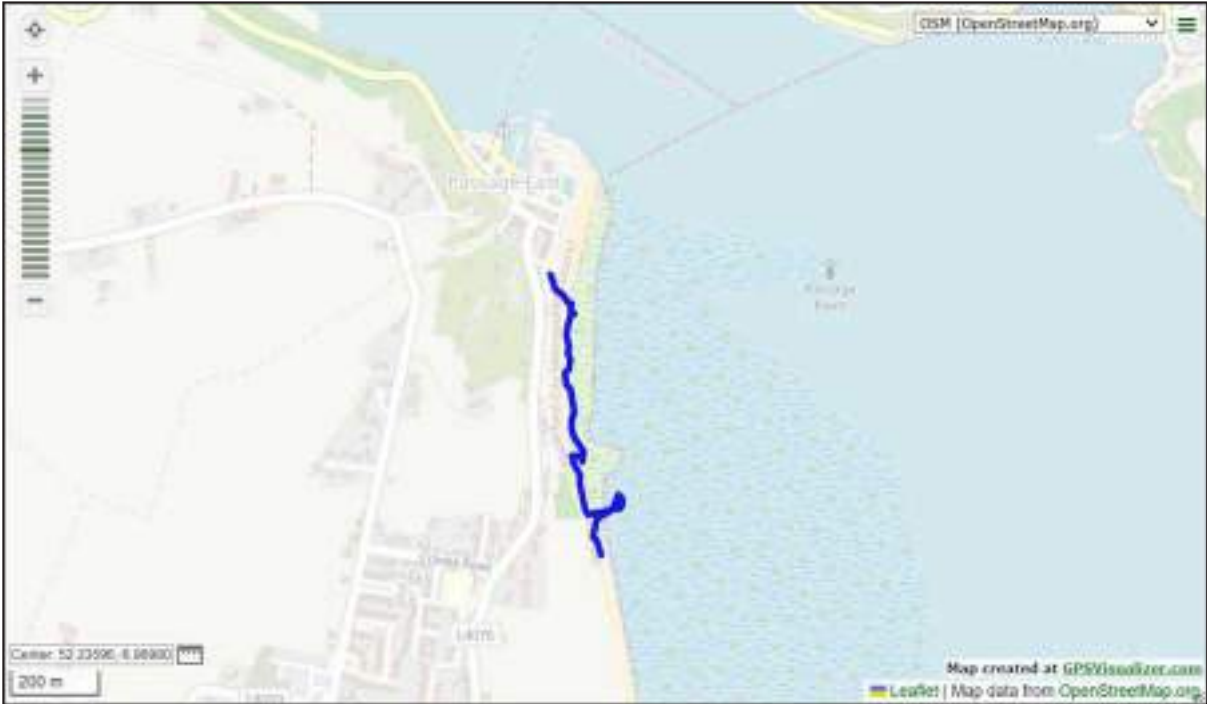


Fig. 468. Survey track (blue line). No feral Pacific oysters were found.

5.10 County Wexford

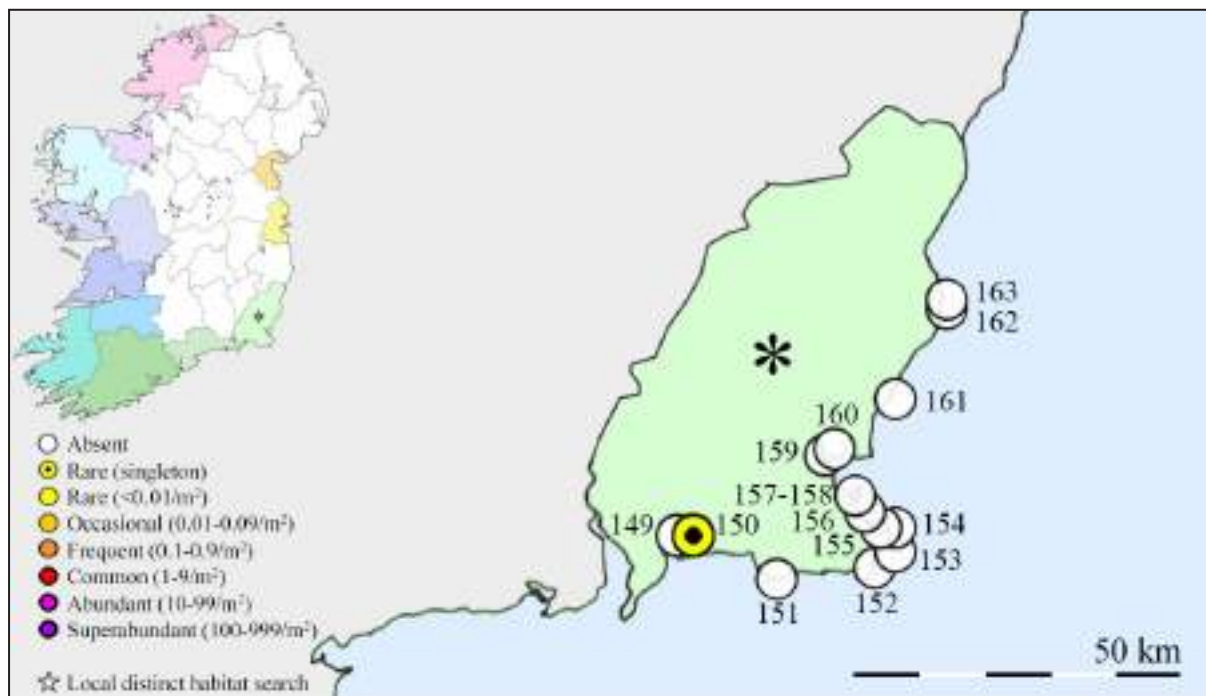


Fig. 469. Surveys in County Wexford

Between 2024 and 2025, 15 surveys were carried out in Co. Wexford, during which 16 km of the shoreline was searched (Fig. 469). During one of these surveys, i.e., in Bannow Bay (survey 150) an oyster was recorded that had attached itself to a regularly shaped oyster, which was not fixed and was situated in the sand next to the trestles of an oyster farm. Thus, it seemed probable that at least the latter oyster was one that came from a bag with oysters from the farm. The oyster that had settled on it, is here assumed to be a feral individual. However, it is possible that two individuals from a hatchery were discarded from an oyster bag because they were attached to each other. Even if this was a feral individual, it remains uncertain whether this signifies an established feral oyster population in Co. Wexford, or if it merely indicates the settlement of a single feral oyster. This oyster may or may not be capable of supporting a self-sustaining feral oyster population. In any case, it concerns a site where Kochmann *et al.* (2013) did not find any feral oysters in 2009 (Fig. 1). They also did not find any feral oysters elsewhere in Co. Wexford.

5.10.1 The Wreck of the Port Lairge, Bannow Bay

Co. Wexford

Survey no. 149	Field code: MIO158 Timed Survey
Location	The Wreck of the Port Lairge
Bay name	Bannow Bay
Bay residence time (days)	9.80 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150 m
Hard substrate (10%)	Boulders
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (80%)	Mud
Presence oyster culture	close (30 m)
Presence artificial structures	Yes (trestles)
Date and time survey	9-8-2025 12:47
Time searched	00:30
Minutes to low tide	22 min. (before low tide)
GPS start	N52 14.229 W6 48.113
GPS end	N52 14.560 W6 47.701
Distance searched	1032 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 470. General habitat: The habitat was consistent throughout the survey, primarily characterized by mud.



Fig. 471. Survey track (blue line). No feral Pacific oysters were found.

5.10.2 Newtown, Bannow Bay

Co. Wexford

Survey no. 150	Field code: MIO159 Timed Survey
Location	Newtown
Bay name	Bannow Bay
Bay residence time (days)	9.80 (Kochmann <i>et al.</i> , 2013)
Width of intertidal shore	>150
Hard substrate (20%)	Pebbles and boulders
Macro algae (10%)	<i>Ascophyllum nodosum</i> and <i>Fucus</i> spp.
Soft substrate (70%)	Mud with gravel and oyster shells
Presence oyster culture	Close (0 m)
Presence artificial structures	Yes (trestles)
Date and time survey	9-8-2025 13:55
Time searched	00:33
Minutes to low tide	0 min. (during low tide)
GPS start	N52 14.233 W6 46.459
GPS end	N52 13.932 W6 46.765
Distance searched	1061 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 472. General habitat: The habitat varied across the survey, specifically between areas of primarily pebbles and boulders overgrown by seaweeds and those consisting predominantly mud with empty oyster shells.



Fig. 473. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 474. Pacific oyster grown on top of another oyster shell. It is here assumed to be a feral individual, but this could also have been a discarded double from a hatchery.

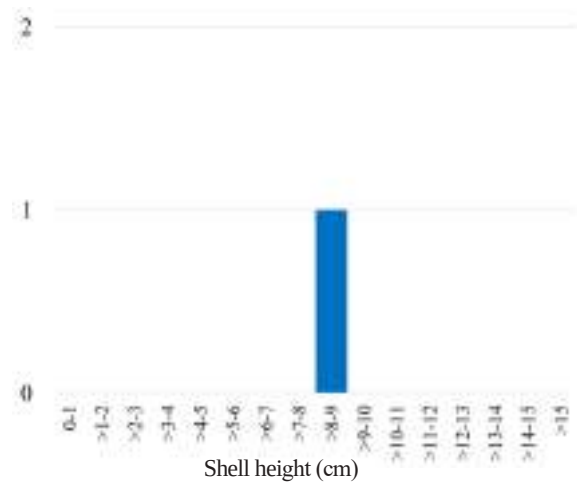


Fig. 476. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).



Fig. 475. Empty Pacific oyster shells.

Molecular analyses	16S sequence: AG_10348 (GenBank nr: PX583020).		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	88 mm		
Density in complete track (1061 m)	0.001 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Oyster shell	fixed	mud	loose	no	1
Total number of oysters:					1
Total number of "whole structure loose" oysters:					0
Total number of "loose" oysters with seaweed (>5cm)					0

5.10.3 Killmore Pier, Celtic Sea

Co. Wexford

Survey no. 151	Field code: MIO172 Timed Survey
Location	Killmore Pier
Bay name	Celtic Sea
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (50%)	Breakwater stones, Boulders and pebbles
Macro algae (40%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Far (5 km)
Presence artificial structures	Yes (marina, breakwater)
Date and time survey	23-8-2025 14:40
Time searched	00:36
Minutes to low tide	60 min. (after low tide)
GPS start	N52 10.359 W6 35.210
GPS end	N52 10.420 W6 34.960
Distance searched	583 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 477. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and pebbles overgrown with seaweeds and those consisting predominantly of breakwater stones.



Fig. 478. Survey track (blue line). No feral Pacific oysters were found.

5.10.4 Carne Pier, Saint Margret's Bay

Co. Wexford

Survey no. 152	Field code: MIO171 Timed Survey
Location	Carne Pier
Bay name	Saint Margret's Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (30%)	Boulders and pebbles
Macro algae (30%)	<i>Fucus</i> spp.
Soft substrate (40%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	23-8-2025 13:07
Time searched	00:35
Minutes to low tide	0 min. (during low tide)
GPS start	N52 11.887 W6 20.886
GPS end	N52 12.382 W6 20.637
Distance searched	1356 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 479. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders overgrown by seaweeds and those consisting predominantly of sand and pebbles.

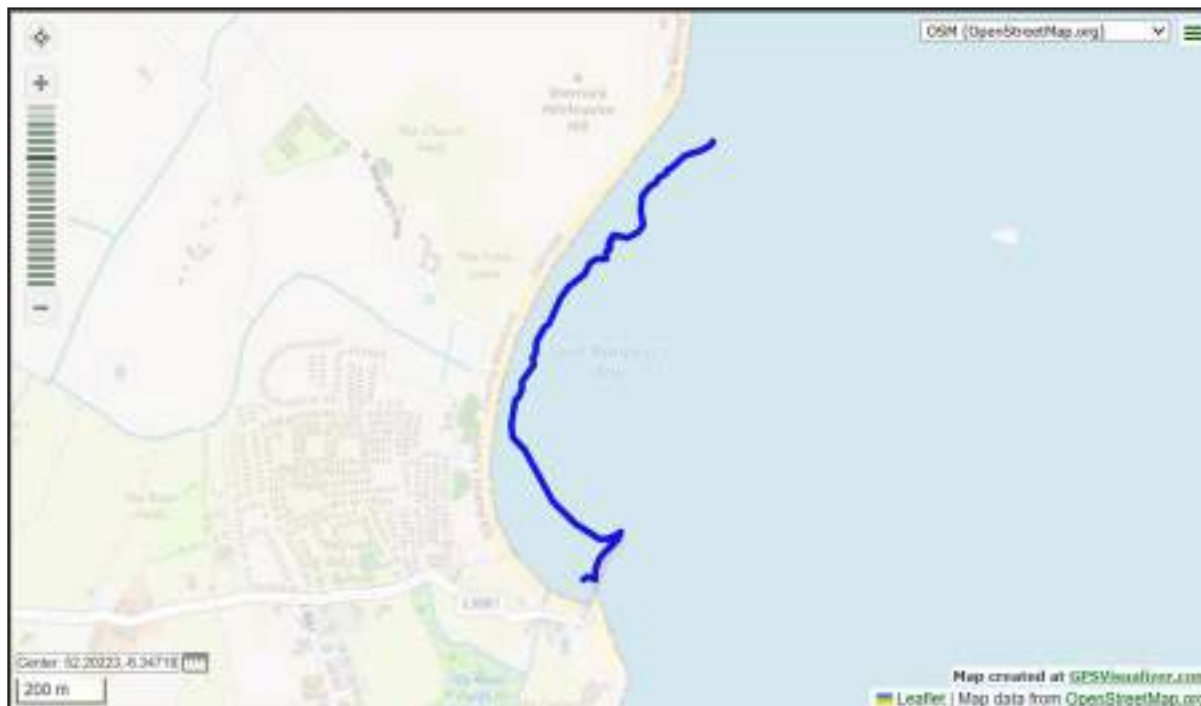


Fig. 480. Survey track (blue line). No feral Pacific oysters were found.

5.10.5 Saint Helens Pier, Irish Sea

Co. Wexford

Survey no. 153	Field code: MIO170 Timed Survey
Location	Saint Helens Pier
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	0-50 m
Hard substrate (60%)	Breakwater stones, Boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (30%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	22-8-2025 14:26
Time searched	00:38
Minutes to low tide	84 min. (after low tide)
GPS start	N52 13.721 W6 19.442
GPS end	N52 13.988 W6 19.406
Distance searched	862 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 481. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and boulders and those consisting predominantly of breakwater stones.

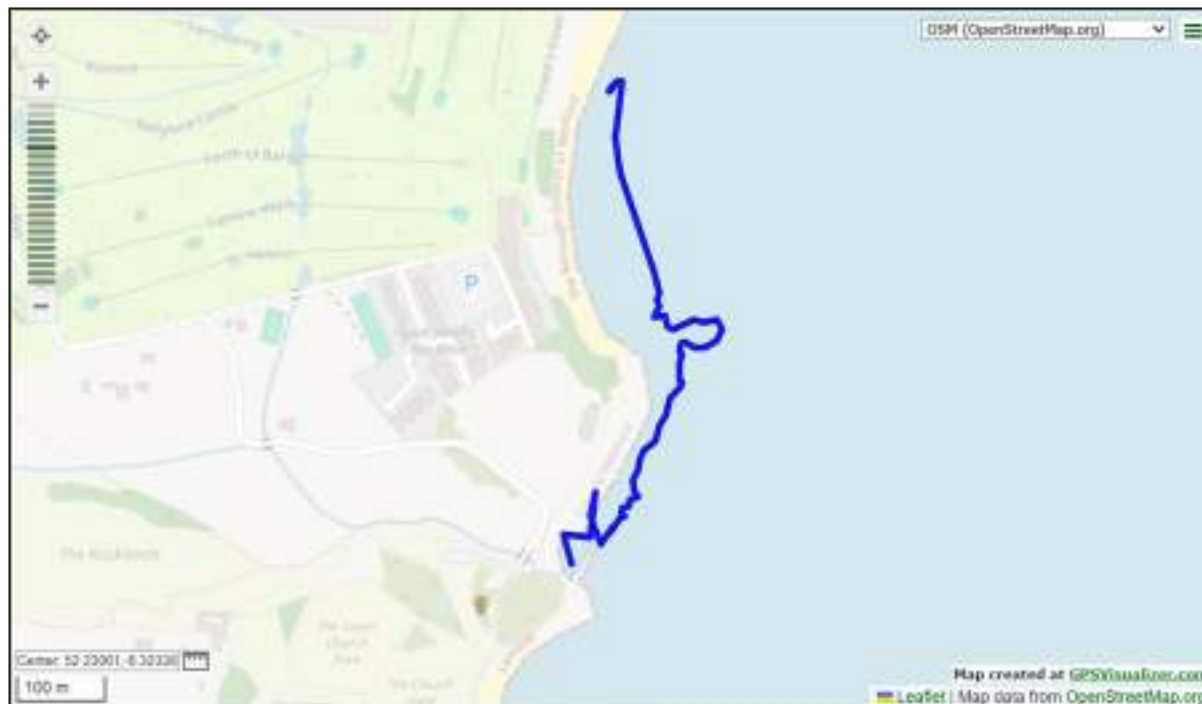


Fig. 482. Survey track (blue line). No feral Pacific oysters were found.

5.10.6 Rosslare Harbour, Irish Sea

Co. Wexford

Survey no. 154	Field code: MIO169 Timed Survey
Location	Rosslare Harbour
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	0-50 m
Hard substrate (30%)	Bedrock and boulders
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (60%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (harbour)
Date and time survey	22-8-2025 13:25
Time searched	00:34
Minutes to low tide	25 min. (after low tide)
GPS start	N52 15.079 W6 19.911
GPS end	N52 14.720 W6 19.352
Distance searched	1768 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 483. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and those consisting predominantly of sand.



Fig. 484. Survey track (blue line). No feral Pacific oysters were found.

5.10.7 Small Boat Harbour, Irish Sea

Co. Wexford

Survey no. 155	Field code: MIO168 Timed Survey
Location	Small Boat Harbour
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	0-50 m
Hard substrate (70%)	Boulders
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (20%)	Sand and gravel
Presence oyster culture	Absent
Presence artificial structures	Yes (marina)
Date and time survey	22-8-2025 12:10
Time searched	00:55
Minutes to low tide	0 min. (during low tide)
GPS start	N52 15.179 W6 21.018
GPS end	N52 15.148 W6 21.097
Distance searched	913 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: One old shell of a Pacific oyster was found.	



Fig. 485. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders.



Fig. 486. Survey track (blue line). No feral Pacific oysters were found.

5.10.8 Rosslare Strand, Irish Sea

Co. Wexford

Survey no. 156	Field code: MIO167 Timed Survey
Location	Rosslare Strand
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	50-100 m
Hard substrate (30%)	Boulders
Macro algae (0%)	n.a.
Soft substrate (70%)	Sand with shells
Presence oyster culture	Absent
Presence artifical structures	Yes (poles)
Date and time survey	23-8-2025 11:53
Time searched	00:35
Minutes to low tide	83 min. (before low tide)
GPS start	N52 16.399 W6 23.107
GPS end	N52 17.081 W6 23.302
Distance searched	1527 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 487. General habitat: The habitat varied across the survey, specifically between areas of primarily boulders and those consisting predominantly of sand with shells and pebbles.



Fig. 488. Survey track (blue line). No feral Pacific oysters were found.

5.10.9 Warren lower, Wexford Harbour

Co. Wexford

Survey no. 157	Field code: MIO160 Timed Survey
Location	Warren lower
Bay name	Wexford Harbour
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (30%)	Pebbles and mussels
Macro algae (0%)	n.a.
Soft substrate (70%)	Sand with shells
Presence oyster culture	Far (1 km)
Presence artificial structures	Yes (tires and poles)
Date and time survey	10-8-2025 14:47
Time searched	00:48
Minutes to low tide	23 min. (before low tide)
GPS start	N52 18.202 W6 23.828
GPS end	N52 18.194 W6 23.876
Distance searched	1403 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 489. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand with pebbles and mussels.



Fig. 490. Survey track (blue line). No feral Pacific oysters were found.

5.10.10 Burrow, Wexford Harbour

Co. Wexford

Survey no. 158	Field code: MIO161 Timed Survey
Location	Burrow
Bay name	Wexford Harbour
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (20%)	Pebbles
Macro algae (10%)	<i>Fucus</i> spp and <i>Ulva</i> spp.
Soft substrate (70%)	Sand with shells
Presence oyster culture	Far (1.3 km)
Presence artificial structures	No
Date and time survey	10-8-2025 14:58
Time searched	00:44
Minutes to low tide	0 min. (during low tide)
GPS start	N52 18.194 W6 23.876
GPS end	N52 17.759 W6 23.973
Distance searched	1514 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 491. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand with pebbles and shells.

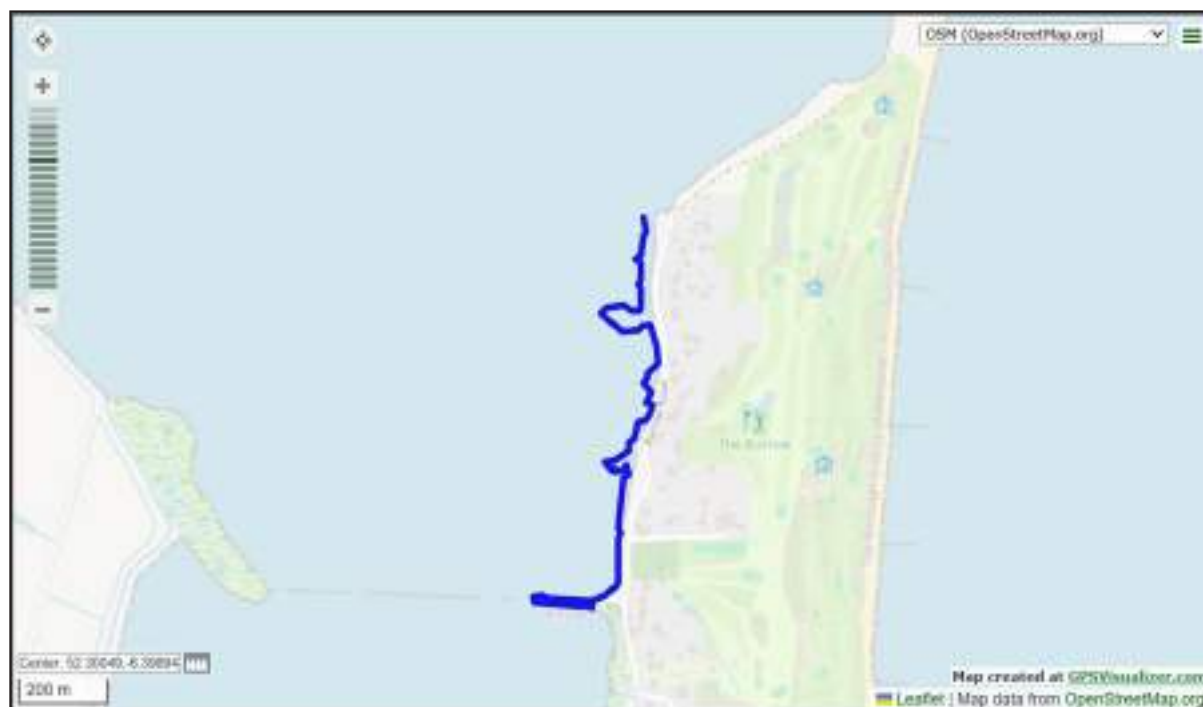


Fig. 492. Survey track (blue line). No feral Pacific oysters were found.

5.10.11 Wexford Bridge, Wexford Harbour

Co. Wexford

Survey no. 159	Field code: MIO093 Timed Survey
Location	Wexford Bridge
Bay name	Wexford Harbour
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (70%)	Pebbles
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Far (4 km)
Presence artifical structures	Yes (bridge and ramp)
Date and time survey	12-8-2024 16:41
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N52 20.580 W6 27.392
GPS end	N52 20.659 W6 27.168
Distance searched	946 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 493. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.



Fig. 494. Survey track (blue line). No feral Pacific oysters were found.

5.10.12 Ferrybank East, Wexford Harbour

Co. Wexford

Survey no. 160	Field code: MIO094 Timed Survey
Location	Ferrybank East
Bay name	Wexford Harbour
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (50%)	Breakwater stones
Macro algae (40%)	<i>Fucus vesiculosus</i>
Soft substrate (10%)	sand with gravel
Presence oyster culture	Far (4.2 km)
Presence artificial structures	Yes (breakwater)
Date and time survey	12-8-2024 16:43
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N52 20.671 W6 27.167
GPS end	N52 20.722 W6 27.068
Distance searched	461 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 495. General habitat: The habitat was consistent throughout the survey, primarily characterized by breakwater stones.



Fig. 496. Survey track (blue line). No feral Pacific oysters were found.

5.10.13 Ballyconnigar Beach, Blackwater Harbour

Co. Wexford

Survey no. 161	Field code: MIO166 Timed Survey
Location	Ballyconnigar Beach
Bay name	Blackwater Harbour
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (70%)	Breakwater stones
Macro algae (20%)	<i>Ulva</i> spp.
Soft substrate (0%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (breakwater)
Date and time survey	23-8-2025 15:29
Time searched	00:33
Minutes to low tide	18 min. (before low tide)
GPS start	N52 25.724 W6 19.761
GPS end	N52 25.874 W6 19.575
Distance searched	551 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Stones were covered in mussel seed.	



Fig. 497. General habitat: The habitat was consistent throughout the survey, primarily characterized by breakwater stones.

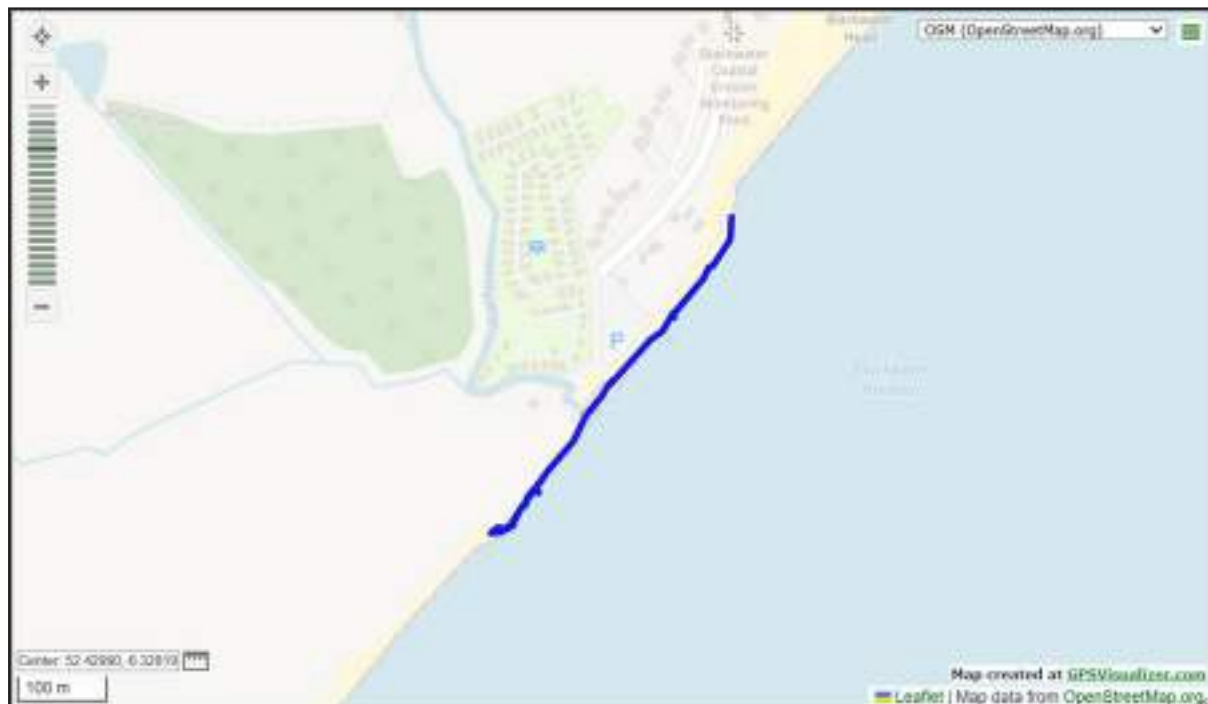


Fig. 498. Survey track (blue line). No feral Pacific oysters were found.

5.10.14 Cahore Beach, Irish Sea

Co. Wexford

Survey no. 162	Field code: MIO092 Timed Survey
Location	Cahore Beach
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	0-50 m
Hard substrate (90%)	Bedrock
Macro algae (10%)	<i>Fucus</i> spp.
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	10-8-2024 13:23
Time searched	00:32
Minutes to low tide	43 min. (after low tide)
GPS start	N52 33.717 W6 11.688
GPS end	N52 33.787 W6 11.640
Distance searched	909 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

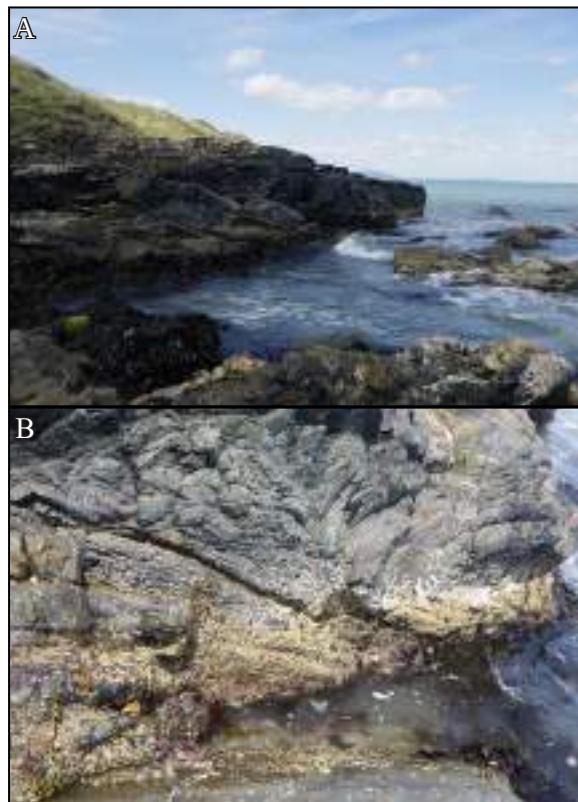


Fig. 499. General habitat: The habitat was consistent throughout the survey, primarily characterized by bedrock.

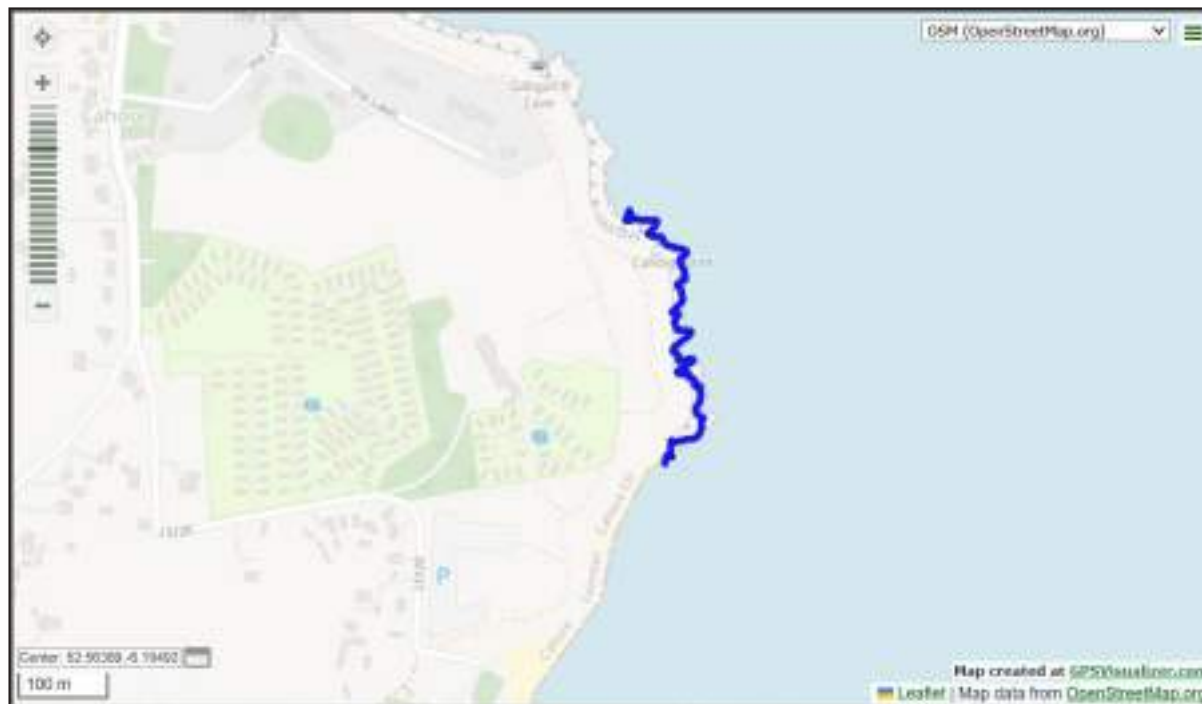


Fig. 500. Survey track (blue line). No feral Pacific oysters were found.

5.10.15 Cahore Pier, Irish Sea

Co. Wexford

Survey no. 163	Field code: MIO165 Timed Survey
Location	Cahore Pier
Bay name	Irish Sea
Bay residence time (days)	n.a. (open sea)
Width of intertidal shore	0-50 m
Hard substrate (80%)	Boulders and pebbles
Macro algae (0%)	n.a.
Soft substrate (20%)	Sand with pebbles
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	23-8-2025 16:47
Time searched	00:32
Minutes to low tide	27 min. (after low tide)
GPS start	N52 34.159 W6 12.172
GPS end	N52 34.697 W6 12.215
Distance searched	1119 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 501. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.

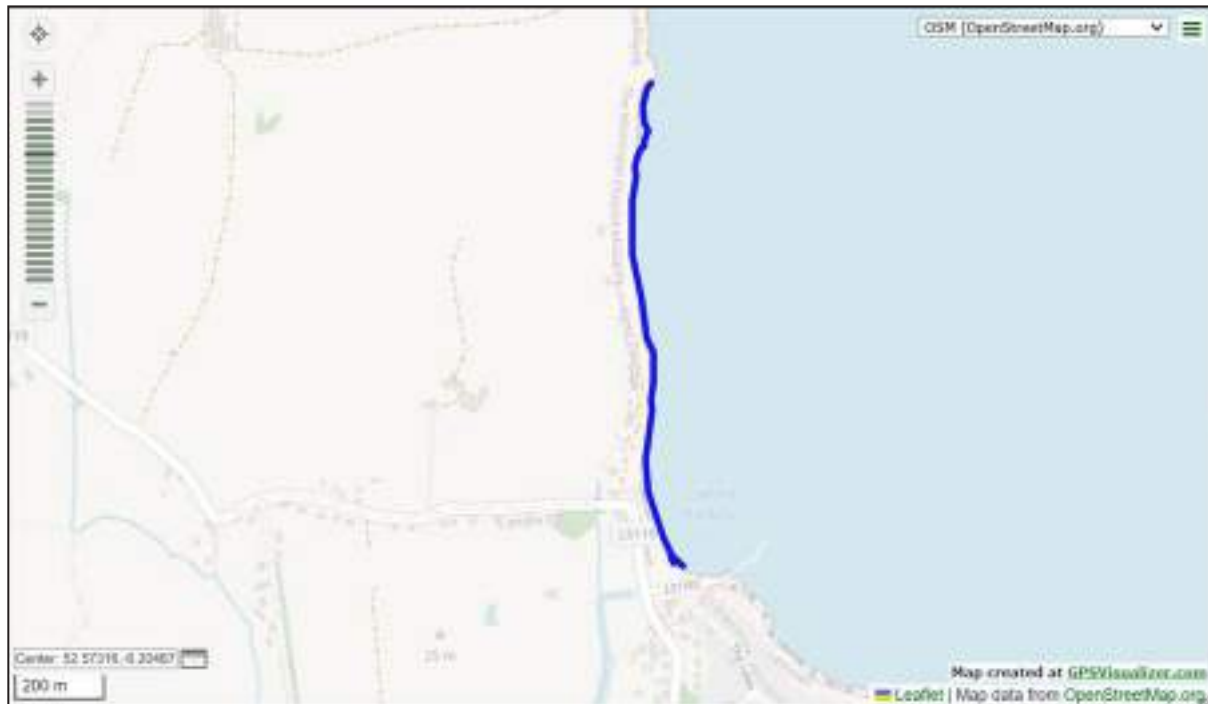


Fig. 502. Survey track (blue line). No feral Pacific oysters were found.

5.11 County Dublin

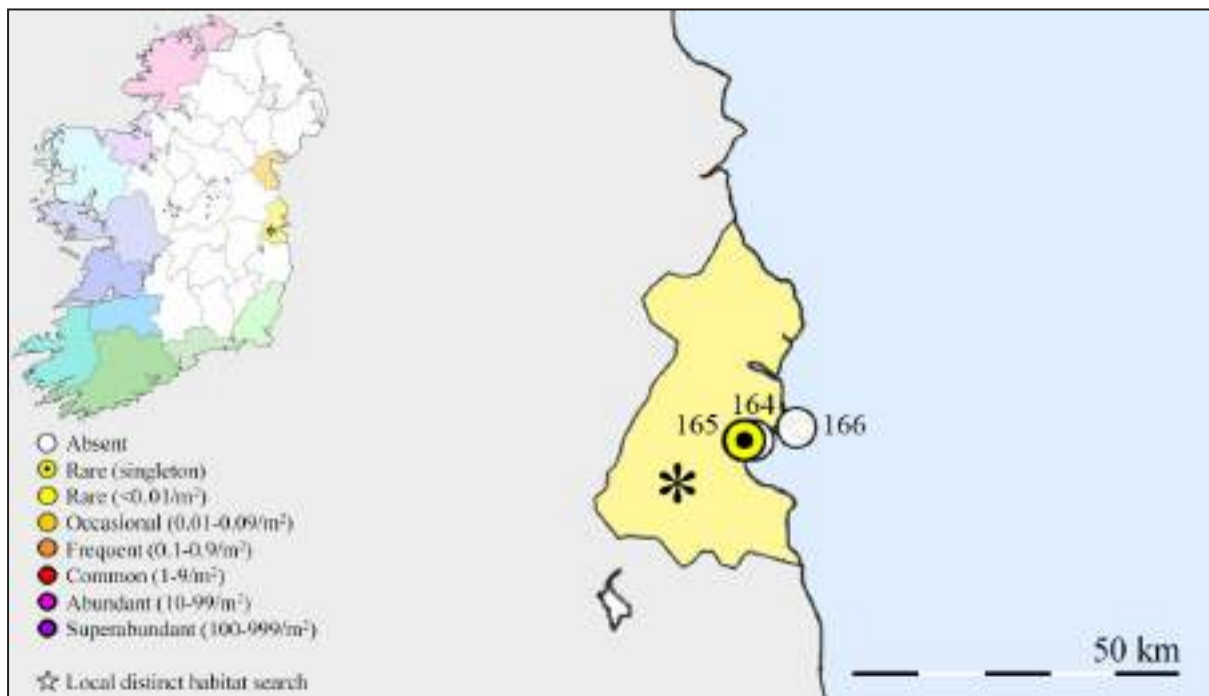


Fig. 503. Surveys in County Dublin

In 2025, 3 surveys were carried out in Dublin Port, in Co. Dublin, during which 3 km of the shoreline was searched (Fig. 503). During only one of these surveys at the most inland site (survey 165: Clontarf Outdoor pool), a single feral oyster was found. The approximately 11 cm large individual had settled on a car tire in the intertidal. Since only one specimen was found, it remains uncertain whether this signifies an established feral oyster population in Co. Dublin, or if it merely indicates the settlement of a single feral oyster in the port. This oyster may or may not be capable of supporting a self-sustaining feral oyster population. It therefore remains uncertain whether a feral Pacific oyster population has established itself in the port of Dublin, and if it has, for how long. Kochmann *et al.* (2013) in 2009 did not conduct any survey on the east coast of the Republic of Ireland, and Zwerksche *et al.* (2017) only searched several sites in Carlingford Lough (Fig. 1).

5.11.1 Clontarf Outdoor pool, Dublin Bay

Co. Dublin

Survey no. 164	Field code: MIO097 Timed Survey
Location	Clontarf Outdoor pool
Bay name	Dublin Bay
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (70%)	Artificial structure (concrete wall)
Macro algae (30%)	<i>Fucus vesiculosus</i>
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artifical structures	Yes (outdoor pool)
Date and time survey	13-7-2025 08:25
Time searched	00:30
Minutes to low tide	31 min. (after low tide)
GPS start	N53 21.605 W6 12.700
GPS end	N53 21.492 W6 11.736
Distance searched	1364 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: Concrete wall next to survey 165.	



Fig. 504. General habitat: The habitat was consistent throughout the survey, primarily characterized by a concrete wall.



Fig. 505. Survey track (blue line). No feral Pacific oysters were found.

5.11.2 Clontarf Outdoor pool intertidal, Dublin Bay

Co. Dublin

Survey no. 165	Field code: MIO096 Timed Survey
Location	Clontarf Outdoor pool intertidal
Bay name	Dublin Bay
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (30%)	Pebbles
Macro algae (10%)	<i>Ulva</i> spp.
Soft substrate (60%)	Mud
Presence oyster culture	Absent (n.a. m)
Presence artificial structures	Yes (old tires)
Date and time survey	13-7-2025 07:50
Time searched	00:30
Minutes to low tide	0 min. (during low tide)
GPS start	N53 21.541 W6 12.165
GPS end	N53 21.573 W6 12.694
Distance searched	858 m
Feral <i>M. gigas</i> settlement	Yes
<i>Ostrea edulis</i> presence	No
Remarks: Intertidal zone next to survey 164.	



Fig. 506. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles on mud.



Fig. 507. Survey track (blue line). One feral Pacific oyster was found. The red circle indicates the location where this Pacific oyster was found.



Fig. 508. Feral Pacific oyster, settled on an old tire.

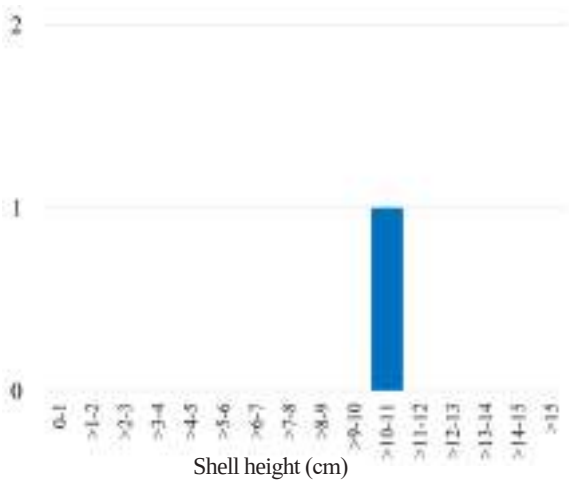


Fig. 509. Size-frequencies of Pacific oysters in 1 cm size intervals (n=1).

Molecular analyses	16S sequence: AG_10219 (GenBank nr: PX582985).		
<i>M. gigas</i> oysters measured	1		
Minimum / maximum size (mm)	102 mm		
Density in complete track (858 m)	0.001 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 30 continuous meters	0.033 /m ² (n=1)	Singleton	Based on GPS locs
Highest density in 5 continuous meters	0.200 /m ² (n=1)	Singleton	Based on GPS locs
Superabundant (100-999/m ²); Abundant (10-99/m ²); Common (1-9/m ²); Frequent (0.1-0.9/m ²); Occasional (0.01-0.09/m ²); Rare (< 0.009/m ²); Singleton (n=1)			

Primary substrate	Primary substrate loose / fixed	Secondary substrate	whole structure: loose / fixed	Species macro algae (>5cm)	Number of oysters
Artificial (tire)	fixed	Mud	fixed	n.a.	1
Total number of oysters:					1
Total number of “whole structure loose” oysters:					0
Total number of “loose” oysters with seaweed (>5cm)					0

5.11.3 Sutton dinghy club, Dublin Bay

Co. Dublin

Survey no. 166	Field code: MIO095 Timed Survey
Location	Sutton dinghy club
Bay name	Dublin Bay
Bay residence time (days)	-
Width of intertidal shore	50-100 m
Hard substrate (20%)	Pebbles
Macro algae (20%)	<i>Fucus</i> spp.
Soft substrate (60%)	Sand with shells
Presence oyster culture	Absent
Presence artificial structures	No
Date and time survey	13-7-2025 07:11
Time searched	00:36
Minutes to low tide	23 min. (before low tide)
GPS start	N53 22.557 W6 06.175
GPS end	N53 22.788 W6 06.430
Distance searched	905 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks: A small natural mussel bed was present.	

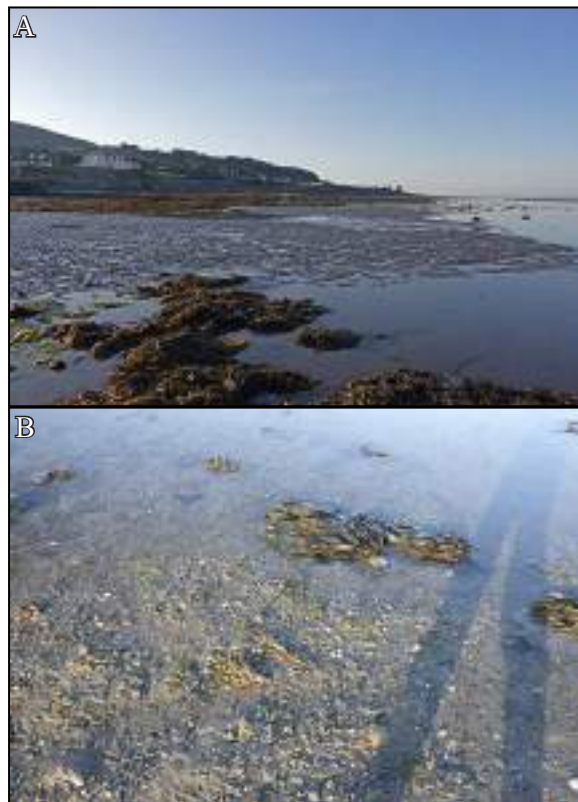


Fig. 510. General habitat: The habitat was consistent throughout the survey, primarily characterized by sand and shells.



Fig. 511. Survey track (blue line). No feral Pacific oysters were found.

5.12 County Louth



Fig. 512. Surveys in County Louth

In 2025, 5 surveys were carried out in Co. Louth, during which 4 km of the shoreline was searched (Fig. 512). During none of these surveys feral oysters were encountered. This is the only county surveyed in 2024 and 2025, with no feral oysters discovered, even though oyster farms were located adjacent to the survey tracks, e.g., in Carlingford Lough. There, Zwerksche *et al.* (2017) during their surveys in 2012 and 2013, did record “loose” Pacific oysters, but formed the hypothesis that they might not be feral oysters that had settled as larvae in the wild. Instead, they assumed they came from the oyster farms, which seems a more logical explanation. Kochmann *et al.* (2013) in 2009 did not conduct any survey in Co. Lough.

5.12.1 Salterstown Pier, Dundalk Bay

Co. Louth

Survey no. 167	Field code: MIO098 Timed Survey
Location	Salterstown Pier
Bay name	Dundalk Bay
Bay residence time (days)	-
Width of intertidal shore	0-50 m
Hard substrate (70%)	Bedrock and boulders
Macro algae (20%)	<i>Fucus</i> spp.
Soft substrate (10%)	Sand
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	13-7-2025 19:59
Time searched	00:34
Minutes to low tide	0 min. (during low tide)
GPS start	N53 52.744 W6 18.237
GPS end	N53 52.641 W6 18.842
Distance searched	825 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 513. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock and those consisting predominantly of sand with boulders.



Fig. 514. Survey track (blue line). No feral Pacific oysters were found.

5.12.2 Gyles Quay Pier, Dundalk Bay

Co. Louth

Survey no. 168	Field code: MIO099 Timed Survey
Location	Gyles Quay Pier
Bay name	Dundalk Bay
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (100%)	Boulders and pebbles
Macro algae (0%)	n.a.
Soft substrate (0%)	n.a.
Presence oyster culture	Absent
Presence artificial structures	Yes (pier)
Date and time survey	14-7-2025 8:25
Time searched	00:31
Minutes to low tide	15 min. (before low tide)
GPS start	N53 59.209 W6 14.373
GPS end	N53 59.239 W6 14.976
Distance searched	743 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-



Fig. 515. General habitat: The habitat was consistent throughout the survey, primarily characterized by boulders and pebbles.



Fig. 516. Survey track (blue line). No feral Pacific oysters were found.

5.12.3 East of Greenore Point, Carlingford Bay

Co. Louth

Survey no. 169	Field code: MIO100 Timed Survey
Location	East of Greenore Point
Bay name	Carlingford Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (70%)	Pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand with shells
Presence oyster culture	Closeby (10 m)
Presence artificial structures	Yes (trestles)
Date and time survey	14-7-2025
Time searched	00:38
Minutes to low tide	2 min. (after low tide)
GPS start	N54 01.579 W6 07.692
GPS end	N54 01.110 W6 07.629
Distance searched	1064 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

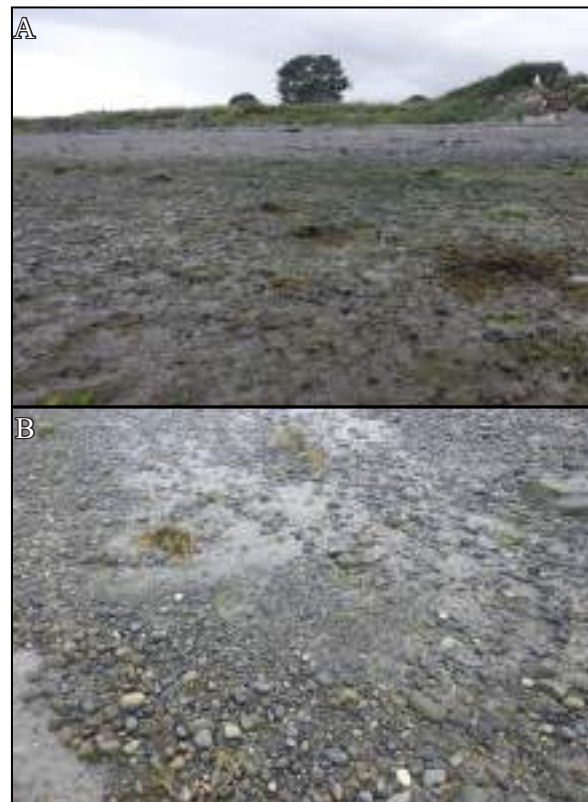


Fig. 517. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles.

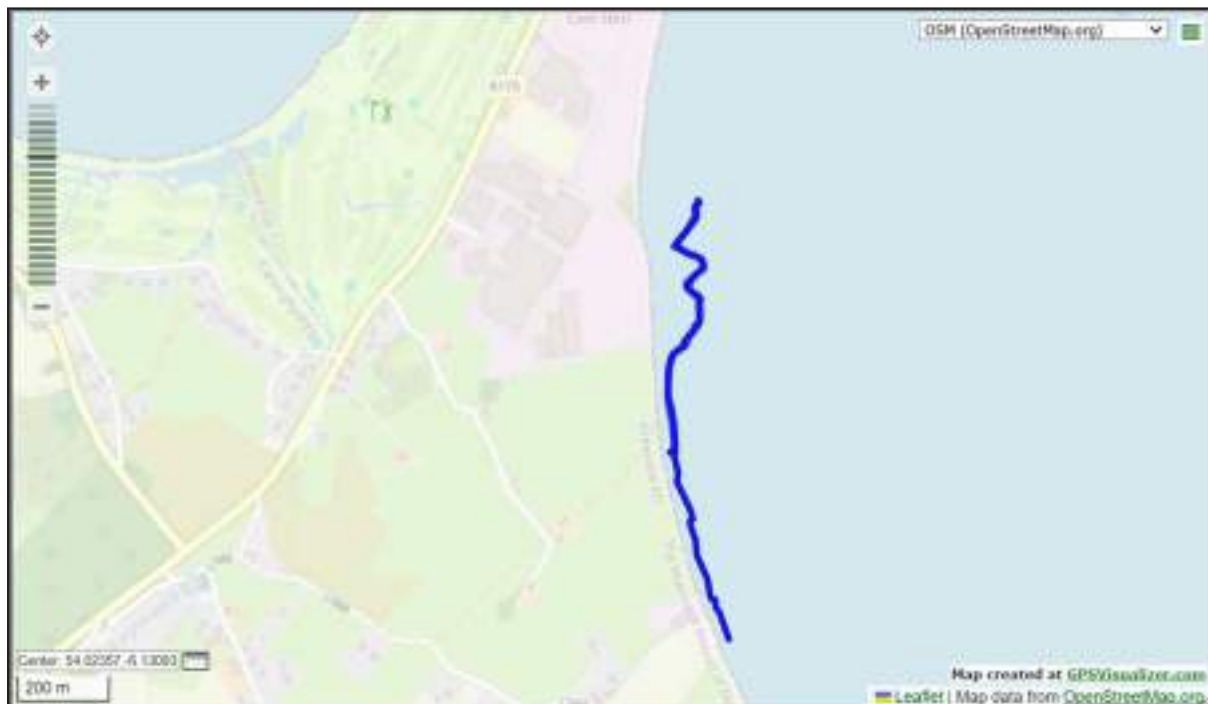


Fig. 518. Survey track (blue line). No feral Pacific oysters were found.

5.12.4 West of Greenore Point, Carlingford Bay

Co. Louth

Survey no. 170	Field code: MIO102 Timed Survey
Location	West of Greenore Point
Bay name	Carlingford Bay
Bay residence time (days)	-
Width of intertidal shore	>150 m
Hard substrate (60%)	Bedrock and boulders
Macro algae (20%)	<i>Ascophyllum nodosum</i> and <i>Fucus vesiculosus</i>
Soft substrate (20%)	Sand with shells
Presence oyster culture	Closeby (10 m)
Presence artificial structures	Yes (trestles)
Date and time survey	14-7-2025 9:52
Time searched	00:38
Minutes to low tide	72 min. (after low tide)
GPS start	N54 01.985 W6 09.411
GPS end	N54 02.280 W6 09.683
Distance searched	779 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	No
Remarks:	-

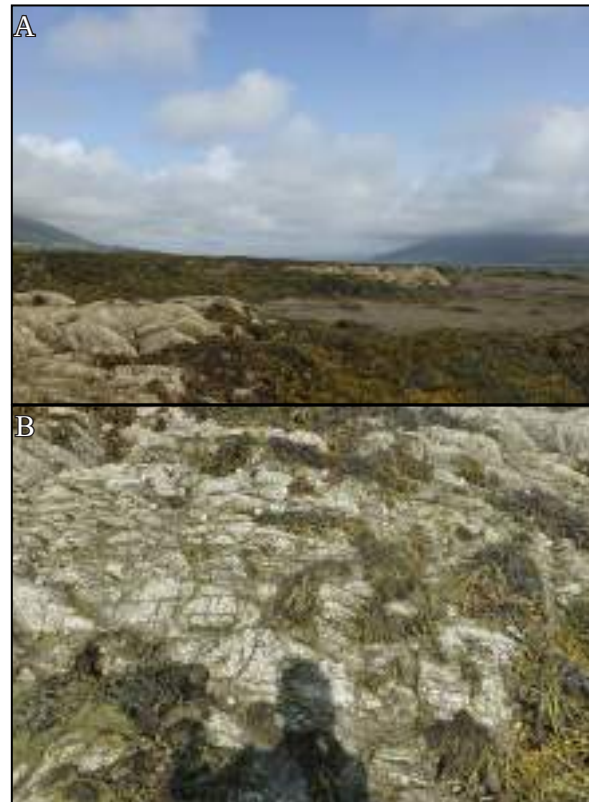


Fig. 519. General habitat: The habitat varied across the survey, specifically between areas of primarily bedrock those consisting predominantly of sand.



Fig. 520. Survey track (blue line). No feral Pacific oysters were found.

5.12.5 Carlingford Pier, Carlingford Bay

Co. Louth

Survey no. 171	Field code: MIO101 Timed Survey
Location	Carlingford Pier
Bay name	Carlingford Bay
Bay residence time (days)	-
Width of intertidal shore	100-150 m
Hard substrate (20%)	boulders and pebbles
Macro algae (10%)	<i>Fucus vesiculosus</i>
Soft substrate (70%)	sand with shells
Presence oyster culture	Closeby (100 m)
Presence artificial structures	Yes (pier)
Date and time survey	14-7-2025 9:03
Time searched	00:30
Minutes to low tide	23 min. (after low tide)
GPS start	N54 02.534 W6 10.788
GPS end	N54 02.538 W6 10.471
Distance searched	699 m
Feral <i>M. gigas</i> settlement	No
<i>Ostrea edulis</i> presence	Yes
Remarks: One flat oyster was found. The DNA was sequenced (AG_10224).	



Fig. 521. General habitat: The habitat was consistent throughout the survey, primarily characterized by pebbles and gravel. One specimen of *Ostrea edulis* was found loose on the substrate.



Fig. 522. Survey track (blue line). No feral Pacific oysters were found. One flat oyster was found. The green circle indicates the location where this flat oyster was found.

6. Literature

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