Some fast facts about habitats

- An **ORGANISM** is any living thing or life form, for example, a Herring.

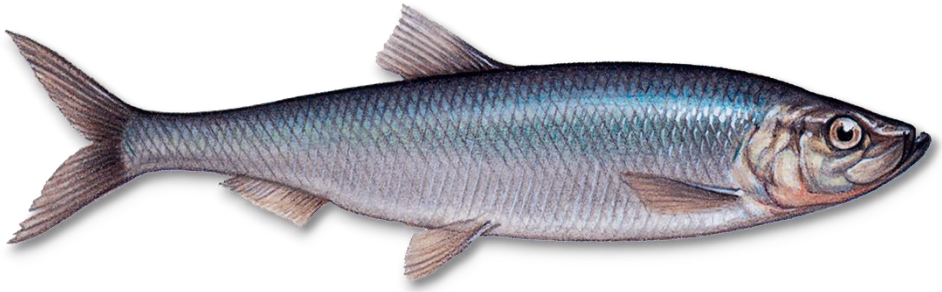

Figure 1. The Atlantic Herring (Clupea harengus).

(Image source: https://featurefoods.ca/pages/nutrition-health-benefits-feature-foods)

- A **HABITAT** is a place where an organism makes its home and where it lives.
- Herrings live in the sea, so the sea is their habitat.
- Habitats can be as small as a rainwater puddle or as large as an ocean.
- Many habitats are temporary; many change significantly over time.
- There are hundreds of thousands of different habitats worldwide.
- In Ireland, the standard system for classifying habitats is the **FOSSITT SCHEME** (see page 2). That scheme recognises 117 different habitats.
- In the European Union, the 1992 **HABITATS DIRECTIVE** is the legislative instrument that sets out goals that EU Member States must achieve to protect habitats. However, it is up to the individual Member States to devise their own domestic laws. **ANNEX 1** of the Habitats Directive lists 233 natural habitats that Member States are required to take measures to maintain or restore at a favourable conservation status (pages 3-4).
- Habitats on the South Wexford Coast are tabulated (pages 5-6), priority habitats are flagged (page 7), domestic wildlife legislation is listed (page 8), and the conservation status of habitats on the South Wexford Coast is assessed (pages 9-11).

Classification of Habitats in Ireland

The scheme devised in 2000 in a book authored by Dr Julie Fossitt for classifying habitats in Ireland is a hierarchical one involving three levels. Using code letters, the scheme identifies 11 broad habitat groups at level one (L1), 30 habitat subgroups at level two (L2), and 117 habitats at level three (L3) (https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf and https://heritagemaps.ie/documents/fossittclassification_heritagemaps.pdf).

L1	L2	L3	Description
F	Freshwater		
	FL	Lakes and ponds	
		FL1	Dystrophic lakes
		FL2	Acid oligotrophic lakes
		FL3	Limestone/marl lakes
		FL4	Mesotrophic lakes
		FL5	Eutrophic lakes
		FL6	Turloughs
		FL7	Reservoirs
		FL8	Other artificial lakes and ponds
	FW	Watercourses	
		FW1	Eroding/upland rivers
		FW2	Depositing/lowland rivers
		FW3	Canals
		FW4	Drainage ditches
	FP	Springs	
		FP1	Calcareous springs
		FP2	Non-calcareous springs
	FS	Swamps	
		FS1	Reed and large sedge swamps
		FS2	Tall-herb swamps
G	Grassland and marsh		
	GA	Improved grassland	
		GA1	Improved agricultural grassland
		GA2	Amenity grassland (improved)
	GS	Semi-natural grassland	
		GS1	Dry calcareous and neutral grassland
		GS2	Dry meadows and grassy verges
		GS3	Dry-humid acid grassland
		GS4	Wet grassland
	GM	Freshwater marsh	
		GM1	Marsh
H	Heath and dense bracken		
	HH	Heath	
		HH1	Dry siliceous heath
		HH2	Dry calcareous heath
		HH3	Wet heath
		HH4	Montane heath
	HD	Dense bracken	
		HD1	Dense bracken
P	Peatlands		
	PB	Bogs	
		PB1	Raised bog
		PB2	Upland blanket bog
		PB3	Lowland blanket bog
		PB4	Cutover bog
		PB5	Eroding blanket bog
	PF	Fens and flushes	
		PF1	Rich fen and flush
		PF2	Poor fen and flush
		PF3	Transition mire and quaking bog
W	Woodland and scrub		
	WN	Semi-natural woodland	
		WN1	Oak-birch-holly woodland
		WN2	Oak-ash-hazel woodland
		WN3	Yew woodland
		WN4	Wet pedunculate oak-ash woodland
		WN5	Riparian woodland
		WN6	Wet willow-alder-ash woodland
		WN7	Bog woodland
	WD	Highly modified/non-native woodland	
		WD1	(Mixed) broadleaved woodland
		WD2	Mixed broadleaved/conifer woodland
		WD3	(Mixed) conifer woodland
		WD4	Conifer plantation
		WD5	Scattered trees and parkland
	WS	Scrub/transitional woodland	
		WS1	Scrub
		WS2	Immature woodland
		WS3	Ornamental/non-native shrub
		WS4	Short rotation coppice
		WS5	Recently-felled woodland
	WL	Linear woodland/scrub	
		WL1	Hedgerows
		WL2	Treelines
E	Exposed rock and disturbed ground		
	ER	Exposed rock	
		ER1	Exposed siliceous rock
		ER2	Exposed calcareous rock
		ER3	Siliceous scree and loose rock
		ER4	Calcareous scree and loose rock
	EU	Underground rock and caves	
		EU1	Non-marine caves
		EU2	Artificial underground habitats
	ED	Disturbed ground	
		ED1	Exposed sand, gravel or till
		ED2	Spoil and bare ground
		ED3	Recolonising bare ground
		ED4	Active quarries and mines
		ED5	Refuse and other waste
B	Cultivated and built land		
	BC	Cultivated land	
		BC1	Arable crops
		BC2	Horticultural land
		BC3	Tilled land
		BC4	Flower beds and borders
	BL	Built land	
		BL1	Stone walls and other stonework
		BL2	Earth banks
		BL3	Buildings and artificial surfaces
C	Coastland		
	CS	Sea cliffs and islets	
		CS1	Rocky sea cliffs
		CS2	Sea stacks and islets
		CS3	Sedimentary sea cliffs
	CW	Brackish waters	
		CW1	Lagoons and saline lakes
		CW2	Tidal rivers
	CM	Salt marshes	
		CM1	Lower salt marsh
		CM2	Upper salt marsh
	CB	Shingle and gravel banks	
		CB1	Shingle and gravel banks
	CD	Sand dune systems	
		CD1	Embryonic dunes
		CD2	Marram dunes
		CD3	Fixed dunes
		CD4	Dune scrub and woodland
		CD5	Dune slacks
		CD6	Machair
	CC	Coastal constructions	
		CC1	Sea walls, piers and jetties
		CC2	Fish cages and rafts
L	Littoral (intertidal)		
	LR	Littoral rock	
		LR1	Exposed rocky shores
		LR2	Moderately exposed rocky shores
		LR3	Sheltered rocky shores
		LR4	Mixed substrata shores
		LR5	Sea caves
	LS	Littoral sediment	
		LS1	Shingle and gravel shores
		LS2	Sand shores
		LS3	Muddy sand shores
		LS4	Mud shores
		LS5	Mixed sediment shores
S	Sublittoral (subtidal)		
	SR	Sublittoral rock	
		SR1	Exposed infralittoral rock
		SR2	Moderately exposed infralittoral rock
		SR3	Sheltered infralittoral rock
		SR4	Exposed circalittoral rock
		SR5	Moderately exposed circalittoral rock
		SR6	Sheltered circalittoral rock
	SS	Sublittoral sediment	
		SS1	Infralittoral gravels and sands
		SS2	Infralittoral muddy sands
		SS3	Infralittoral muds
		SS4	Infralittoral mixed sediments
		SS5	Circalittoral gravels and sands
		SS6	Circalittoral muddy sands
		SS7	Circalittoral muds
		SS8	Circalittoral mixed sediments
M	MW	Marine water body	
		MW1	Open marine water
		MW2	Sea inlets and bays
		MW3	Straits and sounds
		MW4	Estuaries

Table 1. The Fossitt scheme for habitat classification in Ireland.

EU Habitats Directive: Annex 1

The European Union (EU) Habitats Directive was adopted by the European Commission in 1992, came into force in 1994, and was transposed into Irish legislation in 1997. The main aim of both the Habitats Directive and the resulting Irish legislation is to contribute towards the conservation of biodiversity. The most recent consolidated version of the Directive reflects all amendments up to 14 July 2025 and is available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043.

Annex 1 of the Directive lists 233 natural habitats that Member States are required to take measures to maintain or restore at a favourable conservation status and whose conservation requires the designation of Special Areas of Conservation SACs); these habitats are tabulated below (Table 2). EU habitats are arranged in nine categories and 32 sub-categories. Some EU habitats are flagged as 'priority habitats' meaning that they are habitats that are considered to be in danger of disappearing within the EU territory and require more significant conservation measures.

In Table 2, the EU official habitat name is followed by the 'short name' used in Ireland by the National Parks and Wildlife Service (NPWS) in Article 17 reporting. Codes used in the table below are as follows: EU = European Union, IE = Ireland, SWC = South Wexford Coast, Sub = Sub-category, Hab = Habitats, and Pri = Priority. There are many habitats on the South Wexford Coast (SWC); those featured in Table 2 are habitats chosen as qualifying interests of the seven SACs on that coastline.

Category			EU			IE		SWC	
No	**Official name**	**Short name**	**Sub**	**Hab**	**Pri**	**Hab**	**Pri**	**Hab**	**Pri**
1	Coastal and halophytic habitats	Coastal	6	28	7	14	1	12	1
2	Coastal sand dunes and inland dunes	Dunes	3	21	7	8	4	4	1
3	Freshwater habitats	Freshwater	2	20	3	8	1	0	0
4	Temperate heath and scrub	Heath	0	12	6	3	0	0	0
5	Sclerophyllous scrub (matorral)	Scrub	4	13	3	1	0	0	0
6	Natural and semi-natural grassland formations	Grassland	5	32	12	6	2	0	0
7	Raised bogs and mires, and fens	Bogs	3	12	6	8	4	0	0
8	Rocky habitats and caves	Rock	3	14	2	7	1	1	0
9	Forests	Forests	6	81	26	4	3	0	0
		Totals	**32**	**233**	**72**	**59**	**16**	**17**	**2**

Table 2. Numbers of habitats.

Interpretation. Guidance on the interpretation of habitat types is given in the Interpretation Manual of European Union Habitats (https://circabc.europa.eu/ui/group/3f466d71-92a7-49eb-9c63-6cb0fadf29dc/library/37d9e6d9-b7de-42ce-b789-622e9741b68f/details).

Reporting. Article 17 of the Directive requires each Member State to report to the European Commission every six years on the status of habitats in their administrative areas. The reports are known as 'Article 17 reports'. Ireland submitted Article 17 reports in 2007, 2013, 2019, and in December 2025, Ireland published its fourth assessment of the conservation status of the 59 EU Annex 1 habitats in three volumes (https://www.npws.ie/publications/article-17-reports/article-17-reports-2025). Volume 1 gives an overview, while Volume 2 and Volume 3 give details regarding habitats and species respectively.

List of 59 Annex 1 habitats recorded in Ireland.

Code	EU Habitats Directive Annex 1 habitat name
1110	Sandbanks which are slightly covered by sea water all the time
1130	Estuaries
1140	Mudflats and sandflats not covered by seawater at low tide
1150	Coastal lagoons*
1160	Large shallow inlets and bays
1170	Reefs
1180	Submarine structures made by leaking gases
1210	Annual vegetation of drift lines
1220	Perennial vegetation of stony banks
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts
1310	*Salicornia* and other annuals colonizing mud and sand
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
1410	Mediterranean salt meadows (*Juncetalia maritimi*)
1420	Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")*
2140	Decalcified fixed dunes with *Empetrum nigrum**
2150	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)*
2170	Dunes with Salix *repens* ssp *argentea* (*Salicion arenariae*)
2190	Humid dune slacks
3110	Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
3130	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
3140	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp
3150	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation
3160	Natural dystrophic lakes and ponds
3180	Turloughs*
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
3270	Rivers with muddy banks with *Chenopodion rubri* pp and *Bidention* pp vegetation
4010	Northern Atlantic wet heaths with *Erica tetralix*
4030	European dry heaths
4060	Alpine and Boreal heaths
5130	*Juniperus communis* formations on heaths or calcareous grasslands
6130	Calaminarian grasslands of the *Violetalia calaminariae*
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites)*
6230	Species-rich *Nardus* grasslands, on silicious substrates in mountain areas*
6410	*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
6510	Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)
7110	Active raised bogs*
7120	Degraded raised bogs still capable of natural regeneration
7130	Blanket bogs (if active bog)*
7140	Transition mires and quaking bogs
7150	Depressions on peat substrates of the *Rhynchosporion*
7210	Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae**
7220	Petrifying springs with tufa formation (*Cratoneurion*)*
7230	Alkaline fens
8110	Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and Galeopsietalia ladani)
8120	Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*)
8210	Calcareous rocky slopes with chasmophytic vegetation
8220	Siliceous rocky slopes with chasmophytic vegetation
8240	Limestone pavements*
8310	Caves not open to the public
8330	Submerged or partially submerged sea caves
21A0	Machairs*
91A0	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
91D0	Bog woodland*
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior**
91J0	*Taxus baccata* woods of the British Isles*

An asterisk (*) after a habitat name denotes that it is a priority habitat.

Table 3. List of the 59 Annex 1 habitats recorded in Ireland with priority habitats (16) highlighted yellow.

(Source: NPWS Article 17 reporting)

Habitats on the South Wexford Coast.

The South Wexford Coast supports a great diversity of habitats. The table below (Table 4) features the sub-set of 17 habitats from those listed in Annex 1 of the Habitats Directive (see page 3 above) and chosen as qualifying interests of the seven Special Areas of Conservation (SACs) that the South Wexford Coast supports. While a habitat may occur in a particular SAC, it is not tabulated below if it is not a qualifying interest of the SAC in question.

Category	Code	17 habitat short names (EU Annex 1 names are given in Table 3 above). Two priority habitats (*) are highlighted.	Hook Head	Bannow Bay	Ballyteige Burrow	Saltee Islands	Tacumshin Lake	Lady's Island Lake	Carnsore Point
Coastal	1130	Estuaries		✓	✓				
	1140	Tidal mudflats and sandflats		✓	✓	✓			✓
	*1150	Lagoons			✓		✓	✓	
	1160	Large shallow inlets and bays	✓			✓			
	1170	Reefs	✓			✓		✓	✓
Beaches and cliffs	1210	Drift lines		✓	✓		✓		
	1220	Vegetated shingle		✓	✓		✓	✓	
	1230	Vegetated sea cliffs	✓			✓			
Saltmarshes	1310	*Salicornia* mud		✓	✓				
	1330	Atlantic salt meadows		✓	✓				
	1410	Mediterranean salt meadows		✓	✓				
	1420	Halophilous scrub		✓	✓				
Sand dunes	2110	Embryonic shifting dunes		✓	✓		✓		
	2120	Marram dunes (white dunes)		✓	✓		✓		
	*2130	Fixed dunes (grey dunes)		✓	✓				
	2190	Humid dune slacks			✓				
Caves	8330	Sea caves				✓			

Table 4. Habitats that are qualifying interests of the seven SACs on the South Wexford Coast.

(Source: https://www.npws.ie/protected-sites/sac)

See page 6 for links to both the habitats and the SACs. Note that 'Lagoons' and 'Fixed dunes (grey dunes)' are priority habitats (see page 7).

Habitats. For a description of any of the 59 Annex 1 habitats recorded in Ireland click either the habitat code number or the habitat name on page 3 at the following link:- https://www.npws.ie/sites/default/files/publications/pdf/article-17-report-2025-volume-1.pdf.

SACs. The Site Codes in Table 5 are links to the seven SACs on the South Wexford Coast.

No	SAC Site Name	SAC Site Code
1	Hook Head	IE0000764
2	Bannow Bay	IE0000697
3	Ballyteige Burrow	IE0000696
4	Saltee Islands	IE0000707
5	Tacumshin Lake	IE0000709
6	Lady's Island Lake	IE0000704
7	Carnsore Point	IE0002269

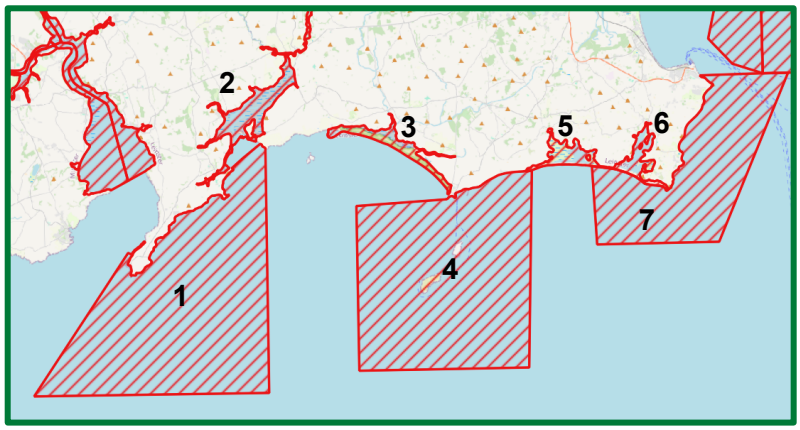

Table 5. Links to Special Areas of Conservation on the South Wexford Coast.

Map of the South Wexford Coast

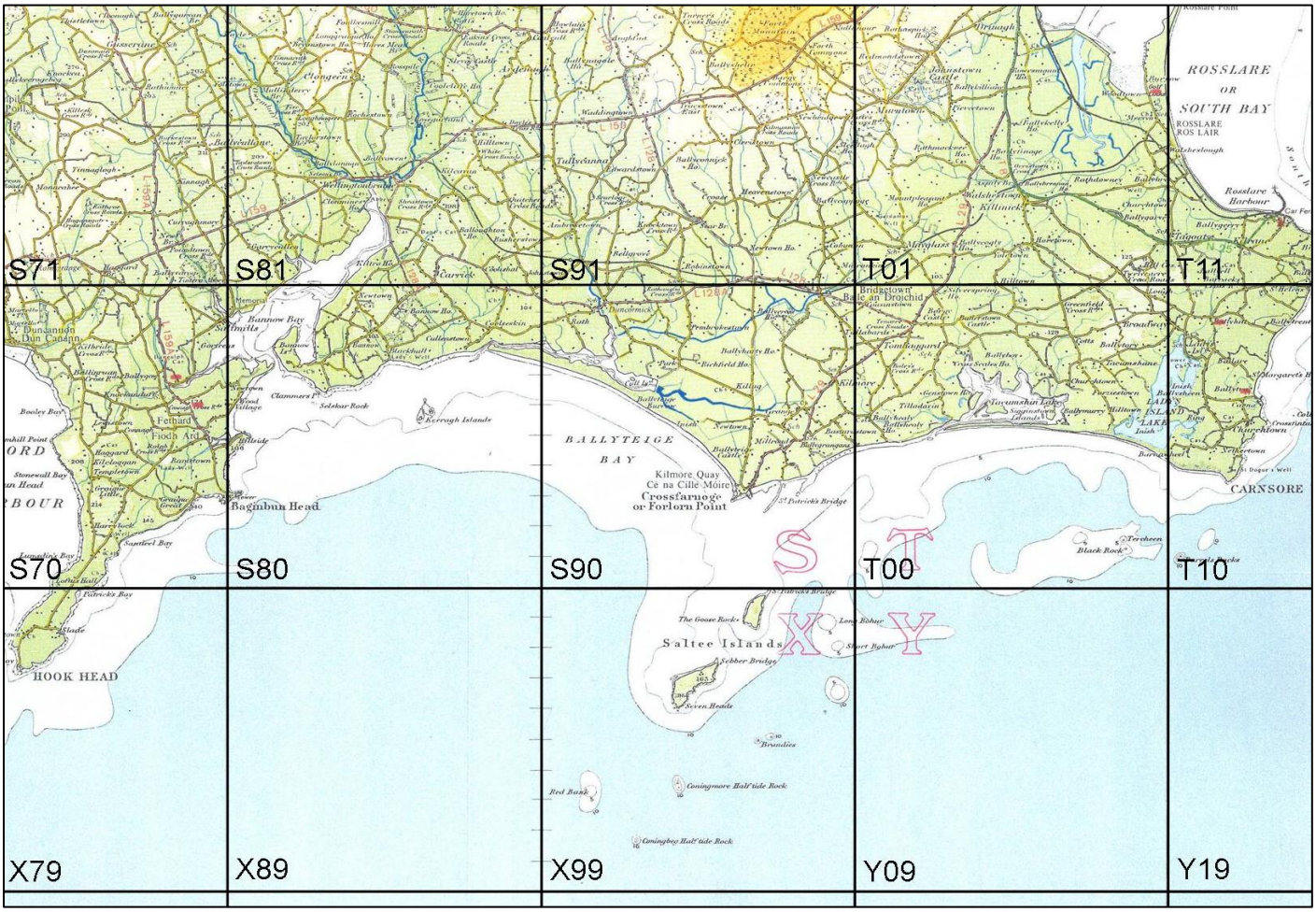

Figure 2. 10km squares on the South Wexford Coast.

(Base map source: Ordnance Survey Ireland, Discovery Series)

Priority habitats

Priority habitats are natural habitat types in danger of disappearance, and for which Member States have particular responsibility in view of the proportion of the habitat which falls within the territory of the European Union (Habitats Directive, Article 1).

Priority natural habitat types are indicated by an asterisk (*). Sixteen priority habitats occur in Ireland (Table 3) two of them on the South Wexford Coast: coastal lagoons (Code 1150) and grey dunes (Code 2130).

Coastal lagoons are located at three sites: Ballyteige Channels, Tacumshin Lake and Lady's Island Lake (Figure 3). Together, by area, these three waterbodies comprise about 29% of Ireland's coastal lagoon habitat resource and are consequently of high conservation importance. They also support an exceptionally high number of lagoonal specialists. Lady's Island Lake is the best-documented lagoon in Ireland and is regarded the largest and best example of a back-barrier sedimentary lagoon in the country.

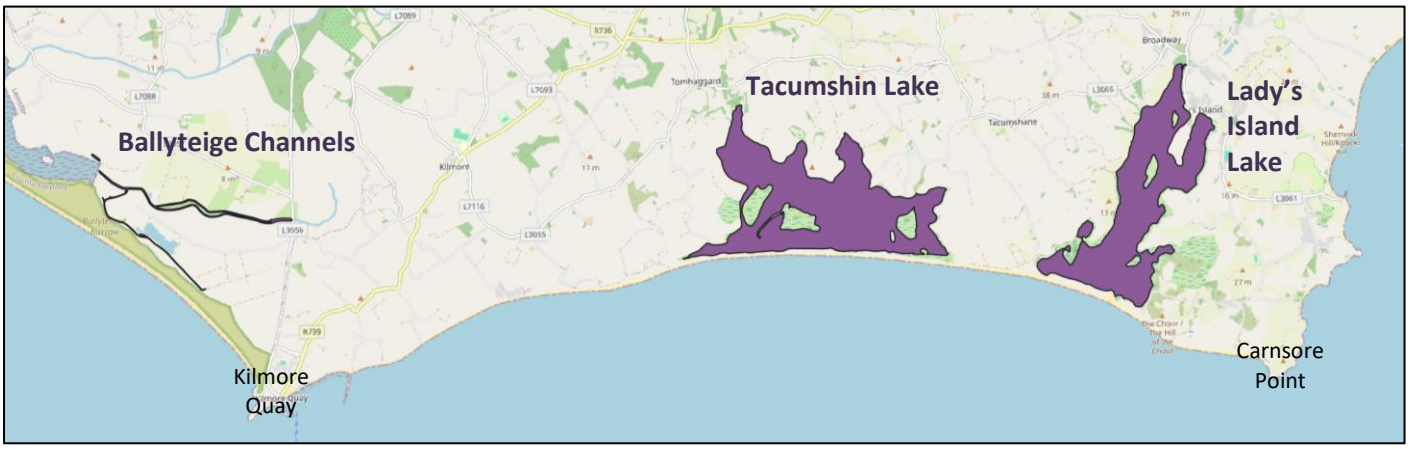

Figure 3. Coastal lagoons on the South Wexford Coast.

Grey dunes occur at four locations on the South Wexford Coast. Small areas of grey dunes are located at two sites at Bannow Bay (Grange and Bannow Island). Ballyteige Burrow is one of the largest and most impressive dune systems in south-east Ireland with extensive grey dunes, while the barriers separating the coastal lagoons at Tacumshin Lake and Lady's Island Lake from the Celtic Sea support smaller, more fragmented, and more hummocky grey dune habitat (Figure 4).

Figure 4. Grey dunes on the South Wexford Coast.

Core legislation

The most important pieces of core legislation, arranged by date, underpinning the protection of habitats in Ireland may be accessed via the following links (Table 6). Primary legislation is supplemented by a large number of Regulations, Orders, and other Statutory Instruments (SIs).

Year	Legislation
1976	Wildlife Act, 1976 (Number 39 of 1976)
2000	Wildlife (Amendment) Act, 2000 (Number 38 of 2000)
2010	Wildlife (Amendment) Act 2010 (Number 19 of 2010)
2011	European Communities (Birds and Natural Habitats) Regulations 2011 (Number 477 of 2011)
2012	Wildlife (Amendment) Act 2012 (Number 29 of 2012)
2013	European Communities (Birds and Natural Habitats) (Amendment) Regulations 2013. (Number 499 of 2013)
2015	European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015. (Number 355 of 2015)
2018	Part 3 of the Heritage Act 2018 (Number 15 of 2018)
2021	• Part 2, Chapters 3 and 4 of the Planning, Heritage and Broadcasting (Amendment) Act 2021 (Number 11 of 2021) • European Union (Birds and Natural Habitats) (Amendment) Regulations 2021 (Number 293 of 2021) http://www.irishstatutebook.ie/eli/2021/act/11/enacted/en/html
2023	Wildlife (Amendment) Act 2023 (Number 25 of 2023)
2024	Fourth National Biodiversity Action Plan

Table 6. The most important pieces of wildlife legislation, arranged by year.

For a list of currently available unofficial consolidations of the above legislation click on Consolidated Legislation. Click on the following links to see the full list of Statutory Instruments made under two Acts, listed by section of each Act: Statutory Instruments made under the Wildlife Act 1976 and Statutory Instruments made under the Wildlife (Amendment) Act 2000.

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Activities Requiring Consent (ARCs)

ARCs are 38 activities with a potential to damage habitats that may require the consent of the Minister for Housing, Local Government and Heritage before they may be conducted. It is an offence to carry out an ARC without prior consent. ARCs relevant to each individual Special Area of Conservation (SAC) are listed in the statutory instrument enabling the particular SAC (Table 5).

(Source: https://www.npws.ie/farmers-and-landowners/activities-requiring-consent)

Conservation Status

The conservation status of a habitat is defined in Article 1 of the Habitats Directive as the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species.

The National Parks and Wildlife Service (NPWS) assesses, and reports to the European Commission (EC) every six years, the conservation status of the 59 Annex 1 habitats that occur in Ireland. Conservation status is summarised below (Table 7) by three traffic light colours: Green (Favourable), Amber/Orange (Unfavourable-Inadequate), and Red (Unfavourable-Bad). Assessments are based on four parameters: (1) Range, (2) Area, (3) Structure and Functions, and (4) Future Prospects. Trends are added to indicate 'no change' (=), and 'declining' (↓). The conservation status is assessed at both a national level and a local level. Referenced sources are tabulated by date on pages 10 and 11. Greyed cells with question marks indicate an absence of data regarding conservation status.

Code	Short name (EU names are given in Table 3 above)	Ireland 2019b	Ireland 2025 + trend	Hook Head	Bannow Bay	Ballyteige Burrow	Saltee Islands	Tacumshin Lake	Lady's Island Lake	Carnsore Point
1130	Estuaries	↓	=		2020	?				
1140	Tidal mudflats and sandflats	↓	=		2020	?	?			?
*1150	Lagoons	↓	↓			2007b		2007b	2007b	
1160	Large shallow inlets and bays	↓	↓	2020			?			
1170	Reefs	=	=	2020			?		?	?
1210	Drift lines	↓	=		?	2013		?		
1220	Vegetated shingle	=	↓		?	2009		2018	2019a	
1230	Vegetated sea cliffs	=	=	?			?			
1310	*Salicornia* mud	=	↓		2012	2007a				
1330	Atlantic salt meadows	↓	↓		2012	2007a				
1410	Mediterranean salt meadows	↓	↓		2012	2007a				
1420	Halophilous scrub	↓	=		2012	2007a				
2110	Embryonic shifting dunes	=	↓		2012	2013		2018		
2120	Marram dunes (white dunes)	=	↓		2012 2009	2013		2018		
*2130	Fixed dunes (grey dunes)	↓	↓		2012 2009	2013				
2190	Dune slacks	↓	↓			2013				
8330	Sea caves	=	=				?			

Table 7. The conservation status of Annex 1 habitats in Ireland and on the South Wexford Coast.

A breakdown by subsite for habitats at Bannow Bay follows (Table 8).

Code	**Bannow Island** (pages 39 and 114)	**Clonmines** (page 54)	**Taulaght** (page 68)	**Saltmills** (page 82)	**Gorteens** (page 96)	**Fethard** (page 111)	**Grange** (pages 124 and 142)	**Overall**
1310								
1330								
1410								
1420								
2110								
2120								
2130								

Table 8. Conservation status of habitats at Bannow Bay.

(Source: NPWS, 2012)

Referenced sources

Assessments are sourced from the following publications. Note that the dates given are the dates of publication of the sources, not the dates of assessment.

2007a	McCorry, 2007a. In NPWS, 2014b: Related Publications. Available online at https://www.npws.ie/protected-sites/sac/000696.
2007b	Oliver, G. 2007b. Irish Lagoons: Conservation Status Assessment. Available online at http://www.irishlagoons.com/. Ballyteige Channels (pages 58-64)
2009	Ryle, T.; Murray, A.; Connolly, C.; and Swann, M. 2009. Coastal Monitoring Project 2004-2006. In NPWS, 2014a: Related Publications. Available online at https://www.npws.ie/sites/default/files/publications/pdf/Ryle_et_al_2009_Coastal_Monitoring_Project.pdf. Pages 176 and 185.
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Table 9. Sources referenced in Table 7 and Table 8.