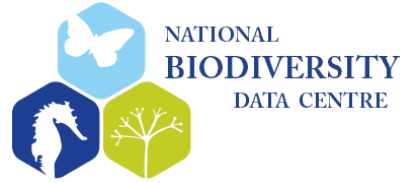




Comhshaol, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government



An inventory of elasmobranch databases for Irish waters

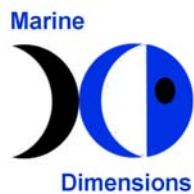
End of contract report
[NPWS contract refs.: BI 43/10]



(Photo: Hamish Currie)

Final Report (Revised)

**Marine Dimensions
May 2011**



Prepared by Sarah Varian, Marine Dimensions, on behalf of the National Biodiversity Data Centre and National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government

Acknowledgements

We are grateful to all the data providers interviewed during the course of this project for their enthusiasm and willingness to share information and data on Ireland's sharks and rays.

Summary

This review represents the first phase of a programme of compilation and digitisation work needed to establish an *All Ireland Elasmobranch Database*. An inventory of 29 data sources for Ireland's sharks and rays has been compiled, including standardised scientific surveys, commercial fishing catch returns, public sightings schemes and unpublished records of recreational captures. The practicalities of integrating such a diverse set of data have been assessed, with consideration of commercial sensitivities, data format and time associated with data extraction. It is envisaged that most of the data identified will be made available to the National Biodiversity Data Centre over the coming months, with a view to conducting a conservation assessment for elasmobranch species later in the year. Much of the data has also been found to be suitable for inclusion in the Data Centre's online mapping system, *Biodiversity Maps*, with issues around sensitivity being flagged.

Background

Ireland's waters contain a wide variety of sharks (39 species), skates and rays (32 species), and chimaeras (7 species) (Table 1), representing an important part of our marine biodiversity. However, two assessments of the status of European sharks and rays by the World Conservation Union has led to the classification of over one quarter (29%) as threatened with extinction (either Critically Endangered, Endangered or Vulnerable), with 20% of species assessed as data deficient (Table 1). This is related to the biology of many species of sharks and rays making them more vulnerable and susceptible to overfishing. Sharks and rays are generally slow growing and long lived, with females tending to reproduce later in life, often producing very few offspring. All these factors make it more difficult for a population to recover from periods of intensive fishing. Globally threatened species in Ireland include the Common Skate *Dipturus batis*, White Skate *Rostroraja alba*, Spurdog *Squalus acanthias*, Angel Shark *Squatina squatina*, Porbeagle Shark, *Lamna nasus*, (all classified as critically endangered by the IUCN), Gulper Shark *Centrophorus granulosus*, Leafscale Gulper Shark *Centrophorus squamosus* and Basking Shark *Cetorhinus maximus* (classified as vulnerable) (Varian, 2009). Considering the threatened status of elasmobranchs as a whole, there is now an urgent need to improve the quality and accessibility of information for this group in order to facilitate fisheries conservation management.

A recent position statement on sharks, skates and rays in Northern Ireland waters (commissioned by the Northern Ireland Environment Agency and conducted by the Agri-Food and Biosciences Institute) highlighted the need to collate and analyse data on elasmobranchs. This comprehensive review identified numerous potential sources of data for sharks and rays in Northern Ireland, including scientific surveys, published and unpublished records of recreational captures, public sightings schemes and anecdotal information from a diverse group of angling and fishing experts (Appendix I, Agri-Food and Biosciences Institute, 2009). Similarly, much of the information in the Republic is scattered

in nature, prompting the need for a single database or access point, where all information could be extracted to inform research planning and fisheries management decisions.

In response to this demand, a project has been set up by The National Biodiversity Data Centre with the aim of integrating Ireland's principal elasmobranch datasets into one common *All Ireland Elasmobranch Database*. The present review represents the first phase of this project, assessing potential elasmobranch data sources and establishing an inventory. The process of compilation and digitisation will then be completed by the Data Centre, with a view to making data available through the Centre's mapping system, *Biodiversity Maps*, which will incorporate a full marine mapping system with the release of the new version in May 2011. It is also hoped that the combined All Ireland Database will lead to a Red List assessment of Ireland's elasmobranch species.

Objectives

The aims of this project are as follows:

- To provide an inventory of existing elasmobranch data sources for Irish waters.
- To review and assess the nature of available datasets, highlighting any restrictions that may be associated with data sharing.
- To establish a National Elasmobranch Database and map this on Biodiversity Maps

Methodology

Potential sources of elasmobranch data were investigated through correspondence and interviews with key personnel in a wide variety of organisations, including government agencies, NGOs, community enterprises and independent experts. A range of communication methods were used to interview data providers, including telephone, email and face to face interviews. A formal letter was also sent to data providers by the National Biodiversity Data Centre, outlining the project's aims and requirements (Appendix I). Attendance at the European Elasmobranch Association Conference in Galway also facilitated liaison with many key elasmobranch experts and data providers.

A number of variables were considered with respect to each dataset when corresponding with data providers, eg. data type, geographical coverage, number of records and obstacles to data sharing. Practicalities associated with accessing data were also assessed.

Results

Data sources

An inventory of 29 data sources for Ireland's sharks and rays has been compiled (Appendix II), including standardised scientific surveys, commercial fishing catch returns, public sightings schemes and unpublished records of recreational captures. General information on Ireland's elasmobranchs has also been highlighted, including a review of published and

unpublished scientific literature in Ireland compiled by Edward Farrell of the Irish Elasmobranch Group (Appendix III). A wide range of data was identified, with considerable variation in data format, scope and accessibility.

Data Format

Most of the data obtained through scientific surveys was found to be available in digital format (ie. SQL, Microsoft Access and Microsoft Excel), although some recreational fishing data still exist as hard copies. The Inland Fisheries Ireland Sportfish Tagging Programme data, an important 40 year dataset, is in the process of being digitised. This work, which is focusing on six key elasmobranch species, is due to be completed in early 2011.

Data Scope

There is considerable variation in the scope of data available, with the number of records in individual databases ranging from 350 to 45,000. Although some survey data are restricted to geographical area (eg. PhD projects frequently focus on regional surveys), most of the national survey data has been collected according to habitat type. For example, the Marine Institute Groundfish Survey obviously targets demersal fish species, whereas the Deep Water Survey focuses on deep water habitats; the Inshore Seine Net Survey Data and Eggcase Sightings Scheme focus on shallow inshore nursery areas etc.

Data accessibility

Data accessibility was found to depend on the following:

(i) Time taken to extract data

In the case of some of the larger datasets, there may be labour issues relating to time taken to extract data for particular species. For example, the Marine Institute Groundfish Survey contains approximately 45,000 records (sampled from 2003-2009), 38,000 of which are records for Lesser Spotted Dogfish *Scyliorhinus canalicula*. The Marine Institute have stated that labour intensive data requests may incur a charge, which would be decided following an assessment of work required. There may also be difficulties in accessing data held in hard format in some instances, eg recreational fishing groups.

(ii) Commercial sensitivity

Some data collected through the commercial fishing industry, eg. Sea Fisheries Protection Authority logbook data and Marine Institute observer data (ie. discard and port sampling databases) have issues of confidentiality associated with providing information on fishing location. There may be restrictions in how the data may be viewed publicly or data may be aggregated on a broad geographic scale, eg. by ICES division. It is therefore important that any issues relating to accessibility are governed by the data sharing agreement between the data provider and the National Biodiversity Data Centre.

National Elasmobranch Database

Part of the contract with NPWS specified establishing a National Elasmobranch Database in which datasets become available to the Centre as part of the inventory. To date no datasets have been provided to the Data Centre, but it is envisaged that two could be available in the short term; Purse Search Ireland and the Irish Basking Sharks Sightings scheme. Contact will be made with both data providers to formally request a copy of their datasets and to use these as the first phase of development of the national database. The national database will be created in Recorder 6 and the data will be made available on line through *Biodiversity Maps*. The provision of the data through this portal will coincide with the release of the new version of *Biodiversity Maps*, incorporating an integrated marine and terrestrial mapping system. This is scheduled for release in May 2011.

Conclusions

This review represents an important first step in the programme of compilation and digitisation work needed to establish an *All Ireland Elasmobranch Database*. A considerable amount of data has been identified as suitable for inclusion in the database and there is no doubt that future conservation assessments and scientific analyses will benefit from an integrated approach to data management. Much of the data is also suitable for use in the Data Centre's mapping system, *Biodiversity Maps*. However, there may be some cost associated with extracting the data.

Should issues surrounding cost and access to data become problematic, perhaps a cut-off date or threshold of datasets/record numbers should be set for when a red listing exercise could be done. Considering the vulnerable status of elasmobranchs as a whole, there is now an urgent need to improve the quality and accessibility of information for this group in order to facilitate fisheries conservation management.

Next steps

Accepting that there will be limitations to what can realistically be achieved in the short term due to constraints on human and financial resources available to this project, the next steps should include:

- The National Biodiversity Data Centre proactively meeting with key data providers to discuss acquisition of data and agree data sharing protocols.
- Develop a work programme to obtain copies of the identified datasets to compile into the National Elasmobranch Database
- When the database is complete, conduct a knowledge gaps assessment
- Develop an All-Ireland Red List

References

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Table 1. Irish Elasmobranch species list with global and Northeast Atlantic conservation status. Compiled by Declan Quigley, Sarah Varian and Eugenie Regan.

<i>Common name</i>	<i>Scientific name</i>	<i>Global status</i>	<i>Northeast Atlantic regional status</i>
Frilled Shark	CHLAMYDOSELACHIDAE (Frill Sharks) Chlamydoselachus anguineus	Near Threatened	
Sharpnose Sevengill Shark	HEXANCHIDAE (Cow Sharks) Heptanchias perlo	Near Threatened	
Bluntnose Sixgill Shark	Hexanchus griseus	Near Threatened	
Bramble Shark	ECHINORHINIDAE (Bramble Sharks) Echinorhinus brucus	Data Deficient	
Spurdog	SQUALIDAE (Spiny Dogfishes) Squalus acanthias	Vulnerable	Critically endangered
Gulper Shark	Centrophorus granulosus	Vulnerable	Critically endangered
Leafscale Gulper Shark	Centrophorus squamosus	Vulnerable	Endangered
Little Gulper Shark	Centrophorus uyato	Data Deficient	
Birdbeak Dogfish	Deania calcea	least concern	Vulnerable
Rough Longnose Dogfish	Deania mauili (hystricosa)	Data Deficient	
Black Dogfish	ETMOPTERIDAE (Lantern Sharks) Centroscyllium fabricii	least concern	Near Threatened
Greater Lantern Shark	Etmopterus princeps	Data Deficient	
Velvet Belly Lantern Shark	Etmopterus spinax	least concern	Near Threatened
Portuguese Dogfish	SOMNIOSIDAE (Sleeper Sharks) Centroscymnus coelolepis	Near Threatened	Endangered
Longnose Velvet Dogfish	Centroselachus crepidater	least concern	
Knifetooth Dogfish	Scymnodon ringens	Data Deficient	
Greenland Shark	Somniosus microcephalus	Data Deficient	
Little Sleeper Shark	Somniosus rostratus	Data Deficient	
Smallmouth Velvet Dogfish	Zameus squamulosus	Data Deficient	
Sharp-back Shark	OXYNOTIDAE (Rough Sharks) Oxynotus paradoxus	Data Deficient	
Darkie Charlie	DALATIIDAE (Kitefin Sharks) Dalatias licha	Near Threatened	Vulnerable
Monkfish or Angelshark	SQUATINIDAE (Angel Sharks) Squatina squatina	Critically Endangered	
Bigeye Thresher Shark	ALOPIIDAE (Thresher Sharks) Alopias superciliosus	Vulnerable	
Common Thresher Shark	Alopias vulpinus	Vulnerable	Near threatened
	CETORHINIDAE (Basking Sharks)		

Basking Shark	Cetorhinus maximus LAMNIDAE (Mackerel Sharks)	Vulnerable	Endangered
Shortfin Mako	Isurus oxyrinchus	Vulnerable	Critically endangered
Porbeagle	Lamna nasus	Vulnerable	Critically endangered
	SCYLIORHINIDAE (Cat Sharks)		
White Ghost Shark	Apristurus aphyodes	Data Deficient	
Iceland Catshark	Apristurus laurussonii	Data Deficient	
Ghost Shark	Apristurus manis	least concern	
Smalleye Catshark	Apristurus microps	least concern	
Blackmouth Dogfish	Galeus melastomus	least concern	
Mouse Catshark	Galeus murinus	least concern	
Lesser-spotted Dogfish	Scyliorhinus canicula	least concern	
Nursehound	Scyliorhinus stellaris	Near Threatened	
	PSEUDOTRIAKIDAE (False Cat Sharks)		
False Catshark	Pseudotriakis microdon	Data Deficient	
	TRIAKIDAE (Hound Sharks)		
Tope	Galeorhinus galeus	Vulnerable	Data Deficient
Starry Smooth Hound	Mustelus asterias	least concern	
	CARCHARHINIDAE (Requiem Sharks)		
Blue Shark	Prionace glauca	Vulnerable	
	TORPEDINIDAE (Electric Rays)		
Electric Ray	Torpedo nobiliana	Vulnerable	
	RAJIDAE (Skates & Rays)		
White Skate	Rostroraja alba	Endangered	Critically endangered
Longnosed Skate	Dipturus oxyrinchus	Near Threatened	
		Critically	
Blue Skate	Dipturus flossada (aka D. batis)	Endangered	
		Critically	
Flapper Skate	Dipturus intermedia (aka D. batis)	Endangered	
Norwegian Skate	Dipturus nidarosiensis	Near Threatened	
Kreff's Ray	Malacoraja krefftii	least concern	
Soft Skate	Malacoraja spinacidermis	least concern	
Richardson's Ray	Bathyraja richardsoni	least concern	
Spinytail Ray	Bathyraja spinicauda	Near Threatened	Least concern
Pale Ray	Bathyraja pallida	least concern	
Shorttail Skate	Amblyraja jenseni	least concern	
Arctic Skate	Amblyraja hyperborea	least concern	
Starry Skate	Amblyraja radiata	Vulnerable	Least concern
Bigelow's Ray	Rajella bigelowi	least concern	
Round Ray	Rajella fyllae	least concern	
Deep-water Ray	Rajella bathyphila	least concern	

Mid-Atlantic Skate	Rajella kukujevi	Data Deficient	
Ghost Skate	Rajella dissimilis	least concern	
Cuckoo Ray	Leucoraja naevus	least concern	
Sandy Ray	Leucoraja circularis	Vulnerable	
Shagreen Ray	Leucoraja fullonica	Near Threatened	
Thornback Ray	Raja clavata	Near Threatened	
Small-eyed Ray	Raja microocellata	Near Threatened	
Blonde Ray	Raja brachyura	Near Threatened	
Spotted Ray	Raja montagui	least concern	
Undulate Ray	Raja undulata	Endangered	
Blue Ray	Neoraja caerulea	Vulnerable	
	DASYATIDAE (Sting Rays)		
Common Stingray	Dasyatis pastinaca	Data Deficient	Near Threatened
Pelagic (Violet) Stingray	Pteroplatytrygon violacea	least concern	
	MOBULIDAE (Devil Rays)		
Devil Ray	Mobula mobular	Endangered	
	MYLIOBATIDAE (Eagle Rays)		
Eagle Ray	Myliobatis aquila	Data Deficient	
	CHIMAERIDAE (Shortnose Chimaeras or Ratfishes)		
Rabbitfish	Chimaera monstrosa	Near Threatened	
	Hydrolagus mirabilis	Near Threatened	
Pale Ghost Shark	Hydrolagus pallidus	least concern	
Small-eyed Rabbitfish	Hydrolagus affinis	least concern	
	RHINOCHIMAERIDAE (Longnose Chimaeras)		
Straightnose Rabbitfish	Rhinochimaera atlantica	least concern	
Bentnose Rabbitfish	Harriotta raleighana	least concern	
Smallspine Spookfish	Harriotta haeckeli	Data Deficient	
	Total	78 species	

Appendix I: Introductory letter sent by the National Biodiversity Data Centre to potential elasmobranch data providers.

Dear Sir/Madam,

The National Biodiversity Data Centre is working with the Department of the Environment, Heritage and Local Government to conduct an inventory of Irish Elasmobranch Databases with a view to establishing a National Elasmobranch Database.

To this end, we would very much appreciate if you could fill in this table for your data:

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing

Once we have conducted the inventory, we would like to make formal requests for any Irish data.

The aim of the database is to improve the understanding of distribution and abundance of these mobile species specifically for reporting on the IUCN red listed species but also for disseminating the information to the general public. This information will be publically available for viewing through the Centre's online system, Biodiversity Maps <http://maps.biodiversityireland.ie/> and will follow the formatting of the NPWS Seals Database http://maps.biodiversityireland.ie/Datasets/DatasetDetails.aspx?datasetId=178&entryMode=DEFAULT_ENTRY.

If brought into the Irish Elasmobranch Database, the data will be publically accessible through Biodiversity Maps. Presentation of the data will not affect ownership rights associated with the dataset; data providers retain all rights to data. Requests for access to data at a finer resolution than displayed on the mapping system or requests for the raw data from third parties will not be provided without the permission of the data provider.

We have data sharing and data use agreements that set out the terms and conditions of the sharing of data, please see below.

<http://www.biodiversityireland.ie/wp-content/uploads/2009/11/Data-sharing-agreement-v.pdf>

http://www.biodiversityireland.ie/wp-content/uploads/2009/11/Data_Centre_data_use_agreement.pdf

Looking forward to hearing from you.

Best wishes,
Eugenie Regan and Sarah Varian

Dr. Eugenie Regan
National Biodiversity Data Centre
WIT West Campus,
Carriganore,
Co. Waterford,
Ireland.

Appendix II: Inventory of elasmobranch data sources for Irish waters.

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing
Irish Groundfish Survey (IGFS)	Marine Institute	SQL	All Irish coastal waters (excluding Irish Sea 07-09)	5000 ray, 40,000 shark	Graham Johnston, David Stokes	None, although some requests may be time consuming and incur a charge. Must comply with MI data policy.
Irish Deepwater Survey (IDWS)	Marine Institute	Microsoft Access – one per year	Deepwater NW of Donegal, shelf edge and Porcupine bank (-14.6671, 53.4501 - 8.7976, 58.2008)	2088 shark, 58 ray	Graham Johnston, Brendan O’Hea	None, although some requests may be time consuming and incur a charge. Must comply with MI data policy.
Irish Historical Deepwater Survey Programme	Marine Institute	Microsoft Access	Deepwater NW of Donegal, shelf edge and Porcupine bank	586 shark, 81 ray	Maurice Clarke	None, although some requests may be time consuming and incur a charge. Must comply with MI data policy.
Discard Database (observer data)	Marine Institute	SQL	All Irish commercial fishing areas	14,000 fishing events with 48,000 length records	Graham Johnston, Sara Jane Moore	May be time consuming. There are some issues around commercial sensitivity. Must comply with MI data policy.
Port Sampling Data (observer data)	Marine Institute	SQL (Proprietary format–STOCKMAN)	All Irish commercial fishing areas	700 age records for spurdog. 10 tope lengths. 8,800 ray records.	Grainne Ni Chonchuir	May be time consuming. There are some issues around commercial sensitivity. Must comply with MI data policy.

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing
Inland Fisheries Ireland Tagging Programme	Inland Fisheries Ireland	Microsoft Access	Irish coast and entire N. Atlantic and Mediterranean	35,571	Willie Roche	Data are property of IFI but are being collated and analysed by MI/IFI. Process not complete yet. Some data exist as hard copies.
Inland Fisheries Ireland Anglers' Logbook Programme	Inland Fisheries Ireland	Microsoft Excel	Irish coastal waters	710	Willie Roche	Data are property of IFI but are being collated and analysed by MI/IFI. Process not complete yet. Some data exist as hard copies.
Water Framework Directive Transitional Waters Survey	Inland Fisheries Ireland	Microsoft Excel	Irish coastal waters	To be determined	Tara Gallagher	None foreseen.
Recreational Fishing Data	Irish Federation of Sea Anglers	Hard copies and digital	Irish coastal waters	To be determined	Brian Cooke	Some data may only be available in hard format.
Specimen Fish Database	Irish Specimen Fish Committee	Final report document pdfs	Irish coastal waters	20 year database	Willie Roche	None foreseen.
Inshore Seine Net Survey	Galway Mayo Institute of Technology, Bord lascaigh Mhara	Digital	Irish coastal waters	In the process of being determined	Dave McGrath, Ian Lawlor	None foreseen.

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing
Fishing Industry Logbook Data	Sea Fisheries Protection Authority	Hard and digital	Irish waters: inshore and offshore	In the process of being assessed	Declan Quigley, Conor O'Shea	May be legal implications associated with making the data public. Data is currently limited due to lack of species records before 2009.
Tuna Fishery Observer Data	Bord Iascaigh Mhara	Hard and digital	Irish waters	In the process of being determined	Ronan Cosgrave	There are some issues around commercial sensitivity.
Elasmobranch Eggcase Sightings Scheme (Purse Search Ireland)	Marine Dimensions	Microsoft Excel	Irish coasts	Approximately 350	Sarah Varian	None foreseen.
Irish Basking Shark Sightings Scheme	Irish Basking Shark Study Group	Digital	Irish coastal waters	Approximately 800	Simon Berrow, Lucy Hunt	None foreseen.
Irish Marine Fish Species List	Declan Quigley	Microsoft Excel	Irish waters: inshore and offshore	n/a	Declan Quigley	None.
Smoothhound Database	University College Dublin	Microsoft Excel	Mainly east coast and Celtic Sea.	Approximately 900	Edward Farrell	None.

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing
Blue Shark, Spurdog and Lesser Spotted Dogfish PhD Database	National University of Ireland, Galway	Digital	Irish waters	In the process of being determined	Aaron Henderson	None foreseen.
Chimaera PhD Database	Trinity College Dublin	Digital	Irish waters	In the process of being determined	Emmet Jackson	None foreseen.
Ray Database	Trinity College Dublin	Digital	Mainly east coast.	In the process of being determined	Frank Jeal	None foreseen.
Northern Ireland Groundfish Survey Database	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	None, but data extraction may be time consuming.
Northern Ireland Nephrops Survey	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	None, but data extraction may be time consuming.
Northern Ireland Other Survey Data	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	None, but data extraction may be time consuming.
Northern Ireland Observed Trips Data	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	There are some issues around commercial sensitivity.

Survey title	Data holder	Database type	Geographic coverage	No. of records	Primary contact	Obstacles (if any) to data sharing
Northern Ireland Market Sampling Data	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	There are some issues around commercial sensitivity.
Northern Ireland Commercial Landings Fisheries Data	Agri Food and Biosciences Institute	Digital	Irish waters	In the process of being determined	Walter Crozier, Gary Burrows	There are some issues around commercial sensitivity.
Northern Ireland Basking Shark Sightings Data	Marine Conservation Society	Digital	Irish waters	In the process of being determined	Gary Burrows	None foreseen.
Blue Shark PhD Data	Queens University Belfast	Digital	Irish waters	In the process of being determined	Sean Fitzpatrick	None foreseen.
Miscellaneous	Irish Elasmobranch Group	Hard and digital	Irish waters	In the process of being determined	Edward Farrell	None foreseen.

**Appendix III: List of Elasmobranch related research conducted in Ireland to date.
Compiled by Edward Farrell, Irish Elasmobranch Group.**

Irish Elasmobranch Research

Peer reviewed articles

Farrell, E.D., Mariani, S. & Clarke, M.W. 2010. Reproductive biology of the starry smooth-hound shark (*Mustelus asterias*): geographic variation and implications for sustainable exploitation. *Journal of Fish Biology*, **77**: 1505-1525.

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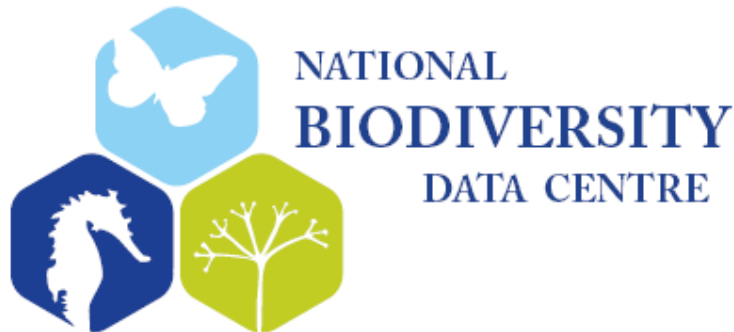
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Appendix IV: The National Biodiversity Data Centre's standard data sharing agreement



DATA SHARING AGREEMENT

I/we the undersigned submit a copy of our data on [insert details] to the National Biodiversity Data Centre.

This is done on the understanding that:

- The data will be secured and managed by the Centre according to best practice, and the data will be managed for the purpose of conserving biological diversity
- The data will be presented on the website of the National Biodiversity Data Centre at a resolution no finer than 1km square, or the lowest possible resolution for data only available at a lower resolution.
- Access to the data at that resolution will be freely available through the web services
- Sensitive data for selected species of conservation concern: [insert sensitive species] may not be displayed at greater than [insert agreed resolution] resolution.
- Presentation of the data will be accompanied by a request that if these data are used in a publication, either scientific or popular, due acknowledgement must be given by use of the following: 'Data from the [insert details (ref)] held by the National Biodiversity Data Centre, [date]'.
- Metadata will be submitted with the data setting
- The ultimate responsibility of the National Biodiversity Data Centre is the provision of data to further the conservation of biological diversity. This will involve providing appropriate access to the data for *bona fide* conservation-related uses to third parties, providing advice on appropriate use of the data set, providing advice on unwise or improper use of the dataset, and co-ordinating further development of the dataset with appropriate partners and with guidance from key data providers and users.

- The Data Centre provides the facility to display biodiversity data at the agreed resolution. Requests for access to data at a finer resolution from third parties will be forwarded by the Centre to the manager of the data set. Access to and provision of data to third parties to a finer resolution than set out in this agreement is entirely a matter for the data manager and/or the data owners.
- Presentation of the data on the Centre’s web site will not affect ownership rights associated with the dataset; data providers retain all rights to data.

Definitions

- **The National Biodiversity Data Centre:** The Centre run under a Service Level Agreement by Compass Informatics on behalf of the Heritage Council, and overseen by the Management Board established as a Committee of the Heritage Council, pursuant to Paragraph 9 of the Heritage Act (1995).
- **Biodiversity data:** primary data on specimens, observation, names, taxonomic concepts, and sites, and other related data on biodiversity diversity.
- **Metadata:** data describing the attributes and combinations of biodiversity data.
- **Data provider:** A custodian of data making it technically available. This may or may not be the data owner. If not they will have declared to the National Biodiversity Data Centre that they have permission to make the data available.
- **Data sharing:** The process of and agreements for making data freely and universally available on the Internet.
- **User:** Anyone who uses the Internet to access data through the National Biodiversity Data Centre’s web site.
- **Owner of data:** The legal entity possessing the right resulting from the act of creating a digital record. The record may be a product derived from another, possibly non-digital product, which may affect the right.
- **Sensitive data:** Any data that the provider does not want to make available, e.g. precise localities of endangered species.

Signed by

_____ Date: _____
 [insert name, title and organisation]

Signed by

_____ Date: _____
 Dr. Liam Lysaght, Director, National Biodiversity Data Centre