

STINGRAYS

(Order: Myliobatiformes)

in Irish Waters

By Declan T. Quigley

STINGRAYS belong to a relatively large group of rays (Order: Myliobatiformes) which is currently represented by 183 known species. The majority of stingrays are benthic, found on mud and sand in shallow tropical and warm temperate waters but occasionally down to depths of 200m. Although they are mostly marine, they often enter estuaries and some tropical species are restricted to freshwater (South America, Africa & South-east Asia). Eleven species have been recorded from the Mediterranean Sea, eight of these from the North-east Atlantic and four of these from Irish waters (Table 1).

Relatively inactive fishes, stingrays are usually found partially concealed in sand or mud or slowly swimming over the bottom by undulating their large rounded pectoral fins. Food generally consists of a variety of bottom-living organisms, including crustaceans, molluscs, worms and small fishes. Stingrays are ovoviparous (embryos develop within the oviduct), producing a small number (2-9) of live young after a gestation period ranging from 4 to 12 months. The stingray's low fecundity makes them extremely vulnerable to overexploitation.

A number of morphological features distinguish stingrays from other rays. Apart from having relatively large brains (stingrays are regarded as quite intelligent fishes), all stingrays have one or more serrated caudal spines situated close to the base of their whip-like tails. These formidable spines, which can be up to 35cm long, are only used in self defence. Glandular tissue on the underside of the spine secretes excruciatingly painful venom. Although normally placid, injuries caused by threatened stingrays are relatively common in some parts of the world, albeit fatalities are considered to be relatively rare.

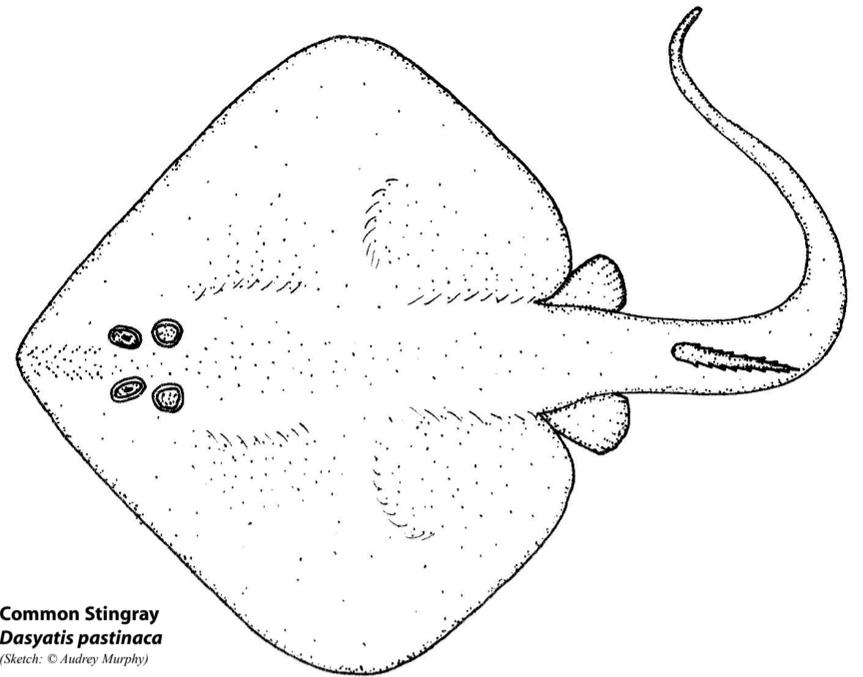
Following the recent highly publicised fatal injury of the wildlife conservationist Steve Irwin while filming stingrays on the

Great Barrier Reef, it was reported that only 17 fatalities had been recorded worldwide and only twice previously in Australia. Although the majority of stingray injuries result from people accidentally stepping on them in shallow water, it is likely that many stingray injuries and fatalities go unrecorded, especially in remote regions of the world. Columbian health authorities register more than 2000 cases of freshwater stingray (Family: Potamotrygonidae) injuries annually. Indeed, over a 5-year period in one small local hospital there were 8 deaths, 23 amputations of lower limbs, and 114 other cases where victims were unable to work for up to 8 months. In the US, about 1500 stingray injuries are reported annually. Although fatalities have not been recorded in European waters, it is likely that stingray injuries do occur but data appears to be lacking.

Common Stingray (*Dasyatis pastinaca*)

The common stingray (*D. pastinaca*) is a wide ranging species throughout the Eastern Atlantic, occurring from southern Norway southwards to the Mediterranean and Black Seas, and onwards via the Canaries to South Africa.

Although the species has been recorded from all around the Irish coast, it seems to be more common, at least locally, in the south and south-west. Almost 84% of all the rod & line caught specimen common stingray (weighing ≥ 13.6 kg) recorded by the Irish Specimen Fish Committee (ISFC) since 1960 were captured in Tralee Bay. Although the species is regarded as unpalatable and is usually discarded by commercial fishermen, concerns have been expressed about the potential commercial overexploitation of the species in Irish waters. This hypothesis is not well supported by the fact that only 43 rod & line specimens have been recorded rather infrequently since 1960, including 56% of these over the last decade (Figure 1). Although anglers now generally



Common Stingray
Dasyatis pastinaca
(Sketch: © Audrey Murphy)

return their catch "alive", perhaps localised rod & line pressure may constitute a significant threat to the species too?

In northern European waters it has been observed that the stingray becomes noticeably more common during the summer and autumn months and that this may indicate a northward migration of the species. Although all of the ISFC specimens were taken between April and September, the species has been taken by commercial trawlers during the winter months when angling effort is significantly lower. Perhaps the species migrates further offshore during the winter months returning inshore during the summer?

The common stingray is one of the largest representatives of its group. It is reported to attain a maximum total length (TL) of 250cm. The world record rod & line caught specimen, weighing 201.4kg, was captured off the Azores in September 1999; the largest specimen caught on rod & line in Irish (and UK) waters, weighing only 33.2kg, was taken in Tralee Bay during May 1999. There is no evidence that the species breeds in Northern European waters.

Eagle Ray (*Myliobatis aquila*)

The eagle ray (*M. aquila*) has a distribution similar to the common stingray. While it has been recorded fairly frequently in UK waters, there are only 4 confirmed occurrences from Irish waters (Ardfry, Co Galway, 1800s; Timoleague, Co Cork, July 1888; Magilligan Bay, Co Derry, July 1958; and off Fastnet Rock, Co Cork, September 1965). It grows to a moderately large size; the UK rod & line record weighing 27.9kg was taken during 1989.

Violet Stingray (*Pteroplatytrygon violacea*)

The violet stingray (*P. violacea*) is the only member of the group that is exclusively pelagic. It is considered to be probably cosmopolitan in tropical and subtropical seas worldwide. Only two specimens have been recorded from Irish waters, both taken in albacore (*Thunnus alalunga*) surface drift-nets off the south-west coast (50° N, 14° W) prior to their banning during the late 1990s. The recognised world rod & line caught record, weighing only 6.2kg, was captured off Corsica during June 2001.

Devil Ray (*Mobula mobular*)

The devil ray (*M. mobular*) belongs to a small sub-family of stingrays that includes the gigantic zooplantophagous manta ray (*Manta birostris*) which can measure 8m in width and weigh 3 tonnes. In the Eastern Atlantic the devil ray is found southwards from northern Spain and Portugal, throughout the Mediterranean (but not the Black Sea), and onwards via the Canaries and Azores to Senegal and possibly strays into the North-Western Atlantic from New Jersey to Cuba. There is only one Irish (and Northern European) record; a single specimen was reported from the south coast of Ireland c1830. The latter specimen is on display in the Natural History Museum in Dublin.

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Common Name	Species Name	North-east Atlantic					Mediterranean
		Ireland	UK	France	Portugal	Spain	
Common Stingray	<i>Dasyatis pastinaca</i>	✓	✓	✓	✓	✓	✓
Eagle Ray	<i>Myliobatis aquila</i>	✓	✓	✓	✓	✓	✓
Violet Stingray	<i>Pteroplatytrygon violacea</i>	✓		✓	✓	✓	✓
Devil Ray	<i>Mobula mobular</i>	✓		✓	✓	✓	✓
Roughtail Stingray	<i>Dasyatis centroura</i>			✓	✓	✓	✓
Spiny Butterfly Ray	<i>Gymnura altavela</i>				✓	✓	✓
Bull Ray	<i>Pteromylaeus bovinus</i>				✓	✓	✓
Lusitanian Cownose Ray	<i>Rhinoptera marginata</i>					✓	✓
Forsskal's Stingray	<i>Himantura uamak</i>						✓
Round Stingray	<i>Taeniura grabata</i>						✓
Tortonese's Stingray	<i>Dasyatis tortonesei</i>						✓

