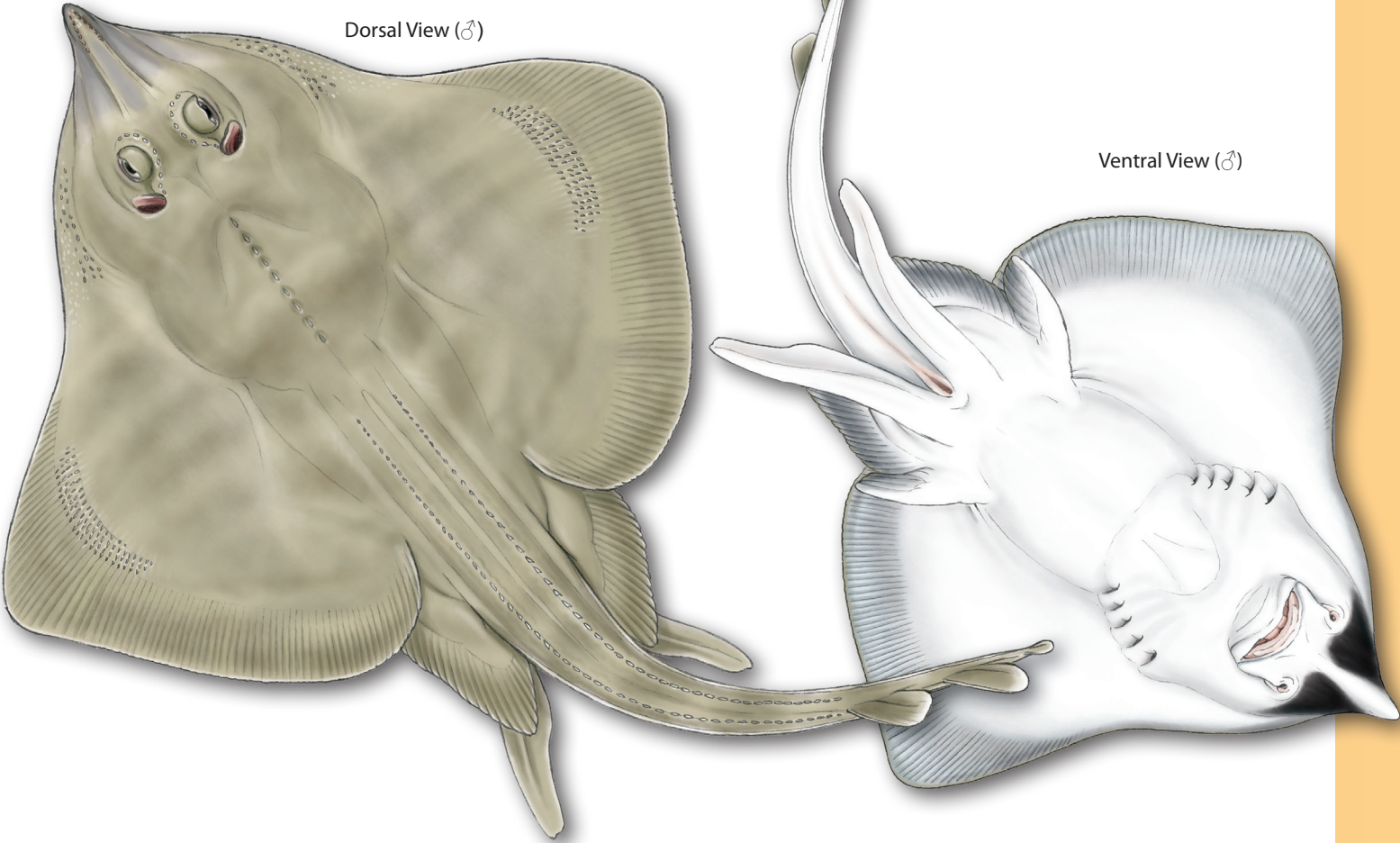


Dorsal View (♂)

Ventral View (♂)



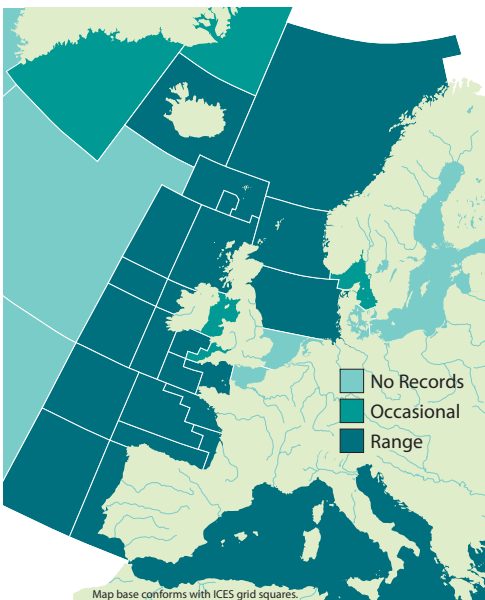
COMMON NAMES

Shagreen Ray, Shagreen Skate, Fuller's Ray, Fuller's Shagreen Ray, Raie-Chardon, Rough Flapper, French Ray, Raie Chardon (Fr), Raya Cardadora (Es), Razza Spinosa (It), Kaardrog (Ne).

SYNONYMS

Raja fullonica (Linnaeus, 1758), *Raja chagrinea* (Shaw, 1804), *Betaraia fullonica* (Leigh-Sharpe, 1924).

DISTRIBUTION



Found in the east Atlantic from Murmansk in Russia to northern Morocco and out to Iceland. Also found in the western Mediterranean and out to the Islands of Madeira (Agustin, 2009). Within British waters it is most common in the Celtic Sea and off north-western Scotland (CEFAS, 2008).

APPEARANCE

- Maximum total length of 120cm.
- Pronounced snout.
- Upper surface plain ash grey.
- Some patterning of transverse dark bands.
- White lower surface, sometimes dark under snout.
- Rows of ~50 large thorns running down either side of midline.

The Shagreen Ray has a rhomboid-shaped disc with sharply angled outer corners and an obvious, pronounced snout (Agustin, 2009). The teeth are arranged into 58–68 rows in the upper jaw. These are pointed in both sexes (Clark, 1926).

The dorsal surface of the disc is entirely spiny with a row of 50 larger thorns on each side of the midline from the shoulder to the first dorsal fin. These rows are much less prominent on older individuals as they wear down over time. Around the inner margin of the eye there is a complete row of eight thorns and there are small thorns on the scapular. Generally there are between three and nine thorns running in a longitudinal row on the upper part of the head. There are no thorns between the close-set dorsal fins. The majority of the ventral surface of the disc is prickly, with the exception of the hind two-thirds of the pectoral fins (Whitehead *et al.*, 1986).

The colouration in adults is generally plain ash grey although there may be variable patterning of transverse dark bands. The ventral surface is always white. Unusually for an elasmobranch, the largest recorded male is larger than the largest recorded female, being 120cm and 111cm respectively (Agustin, 2009).

SIMILAR SPECIES

Amblyraja radiata, Starry Ray

Leucoraja circularis, Sandy Ray

Raja clavata, Thornback Ray

Raja microcellata, Small-eyed Ray (juv.) (not illustrated)

Leucoraja fullonica,
Shagreen Ray

Amblyraja radiata,
Starry Skate

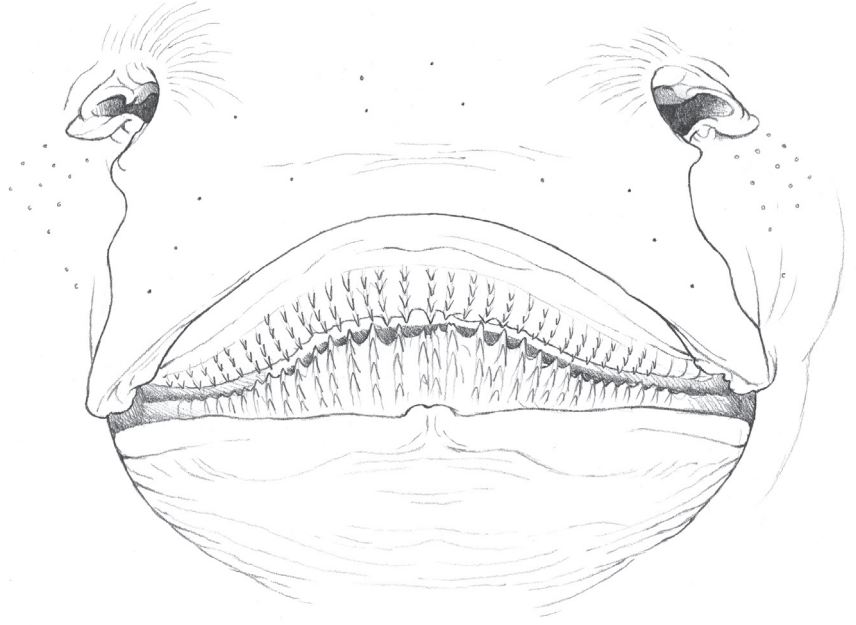
Leucoraja circularis,
Sandy Ray

Raja clavata,
Thornback Ray

(Not to scale)

TEETH

There are 58 (young)–68 (adult) rows of teeth in the upper jaw. These are pointed in both sexes (Clark, 1926).



ECOLOGY & BIOLOGY

HABITAT

Very little is known of the ecology of the Shagreen Ray except that it is a demersal species found along continental shelves and inshore waters at depths of 30–550m (100–1,800ft) (Gibson *et al.*, 2006). Records of catches from longline fisheries suggest that it has a preference for rough ground (Stehmann *et al.*, 2000). It has been reported from Icelandic waters that a summer-time inshore migration occurs, more likely for feeding purposes than for spawning (Wheeler, 1969). Shagreen Rays are by no means abundant in inshore waters and are not common across any of their range (Ellis *et al.*, 2004).

EGGCASE

1. ~80mm in length (excluding horns).
 2. ~50mm in width (Whitehead *et al.*, 1986).
- Similar eggcase to the Small-eyed Ray, *Raja microcellata*.

DIET

It feeds on a variety of bottom dwelling species but most probably prefers fish and crustaceans (Zidowitz *et al.*, 2008). Mature individuals of both sexes have sharp teeth indicating no significant differences in diet between the genders (Stehmann *et al.*, 2000).

REPRODUCTION

Very little is known of the reproduction of the Shagreen Ray except that it is oviparous and that the eggcases measure about 80mm long (excluding horns) by 50mm wide (Whitehead *et al.*, 1986). When breeding and laying occurs, the development time of the embryos and the size of the young at birth has not been determined.

COMMERCIAL IMPORTANCE

There is no targeted fishery for the Shagreen Ray but it is caught and landed in multi-species trawls throughout its range and by longlines in the north (Gibson *et al.*, 2006; Serena, 2005).

THREATS, CONSERVATION, LEGISLATION

As with most species of European skate and ray, the current trends and status of the population are difficult to determine. There is definite potential for overfishing and CEFAS surveys have not recorded the species in the North Sea since 1998. It is still recorded by Scottish surveys though in small numbers and deeper than expected, such as along the edge of the continental shelf at around 200m (655ft) (Gibson *et al.*, 2006).

All rajids are managed under a Total Allowable Catch (TAC) system in EU waters. Between 1999 and 2005 the 6,060t TAC was reduced by 47% and by a further ~50% from 2005 to 2008 (ICES, 2008). Originally the TAC applied only to areas IIa and IV, however in January 2009 the TAC was extended to include ICES divisions IIa, IIIa, IV, VIa-b, VIIa-k, VII and IX. The table below gives a summary of the TAC's for the years 2004 to 2009.

ICES Division	2004	2005	2006	2007	2009	2009
IIa, IV	3,503	3,220	2,737	2,190	1,643	1,643
IIIa	N/A	N/A	N/A	N/A	N/A	68
VIa-b, VIIa-c, VIIe-k	N/A	N/A	N/A	N/A	N/A	15,748
VIIId	N/A	N/A	N/A	N/A	N/A	1,044
VIII, IX	N/A	N/A	N/A	N/A	N/A	6,423

(All figures in tons. European Union, 2009)

Since 2008 European countries have been required to record most skate and ray landings by species to give a clearer picture of the status of populations in EU waters (ICES, 2008). Some Sea Fisheries Committees (SFC) around the UK have byelaws which stipulate a minimum disc width (DW) for landed skates and rays, measured from the extreme tips of the pectoral fins. The SFC's which implement these and the details are shown in the table below.

SFC	DW (cm)	Other
Cumbria	45	Cannot land wings less than 22cm in their maximum dimension
Kent & Essex	40	Cannot land wings less than 19cm in their maximum dimension
Southern	40	Cannot land wings less than 20cm in their maximum dimension
South Wales	45	Cannot land wings less than 22cm in their maximum dimension
States of Guernsey	36	

(Cumbria SFC, Unknown; Kent & Essex SFC, Unknown; South Wales SFC, Unknown; Southern SFC, 2006; NFFO, 2004)

However, such localised management strategies are unlikely to be significant for the conservation of regional populations (Fowler *et al.*, 2005). Many recreational anglers return any sharks, skates and rays they catch alive and some angling clubs have begun tag and release programmes (Holt, 2005). As with most European skate and ray species, there is very little effective management in place to protect the Shagreen Ray.

IUCN RED LIST ASSESSMENT

Near Threatened (2008).

Data Deficient in Mediterranean.

HANDLING AND THORN ARRANGEMENT

- Handle with care.
- Row of strong thorns on midline.
- Row of thorns on head.
- Orbital thorns.



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