

Dorsal View (♀)

Ventral View (♀)

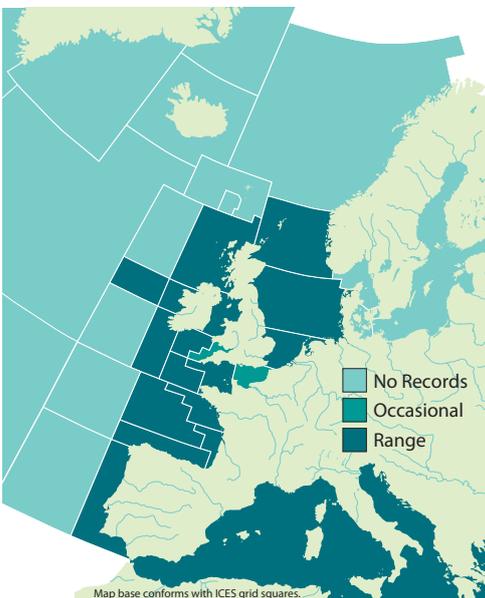
## COMMON NAMES

**Cuckoo Ray**, Cuckoo Skate, Pudding, Stars, Crownback, Butterfly Skate, Sandy Ray, Grootoogrog (Ne), Raie Fleurie (Fr), Kuckucksroche (De), Razza Cucolo (It), Raya Santiguosa (Es).

## SYNONYMS

*Raja naevus* (Duméril, 1865), *Raja circularis* (Couch, 1838) *Deltaraja naevus* (Leigh-Sharpe, 1924) *Raja quadrimaculata* (Risso, 1826).

## DISTRIBUTION



Found along coastlines throughout much of the northeast Atlantic and Mediterranean including northern Morocco, the British Isles and southern Norway (Gibson *et al.*, 2006). In the Mediterranean its range extends as far as Tunisia and western Greece (Whitehead *et al.*, 1986).

## APPEARANCE

- Up to 75cm total length.
- Light grey/brown dorsal surface.
- Large yellow and black eyespot on each pectoral fin.
- Ventral surface white.
- Four rows of thorns on tail, inner two continue onto back.

The Cuckoo Ray is easily identified by the black eye-spot that is present on each pectoral fin. These are large and marbled with yellow stripes making them extremely distinctive. The rest of the dorsal surface of the disc is light grey to brown and the ventral surface is white. There are rarely smaller, less distinct eyespots in addition (Whitehead *et al.*, 1986).

The dorsal surface of the disc is covered in small spines with the exception of the centre of the pectoral fins which are bare in adults. The ventral surface is smooth except for the prickly leading edges of the wings (Luna, 2009). Generally there are 9-13 thorns in a row around the inner margin of the eyes and a large triangle of thorns on the shoulder. Along the tail there are two rows of thorns on each side of the midline, the inner of which continues onto the back in adults (Whitehead *et al.*, 1986). The snout is short with the leading edges of the pectoral fins slightly concave (Serena, 2005). Males reach a maximum total length of 71cm and females 68cm (Luna, 2009).

## SIMILAR SPECIES

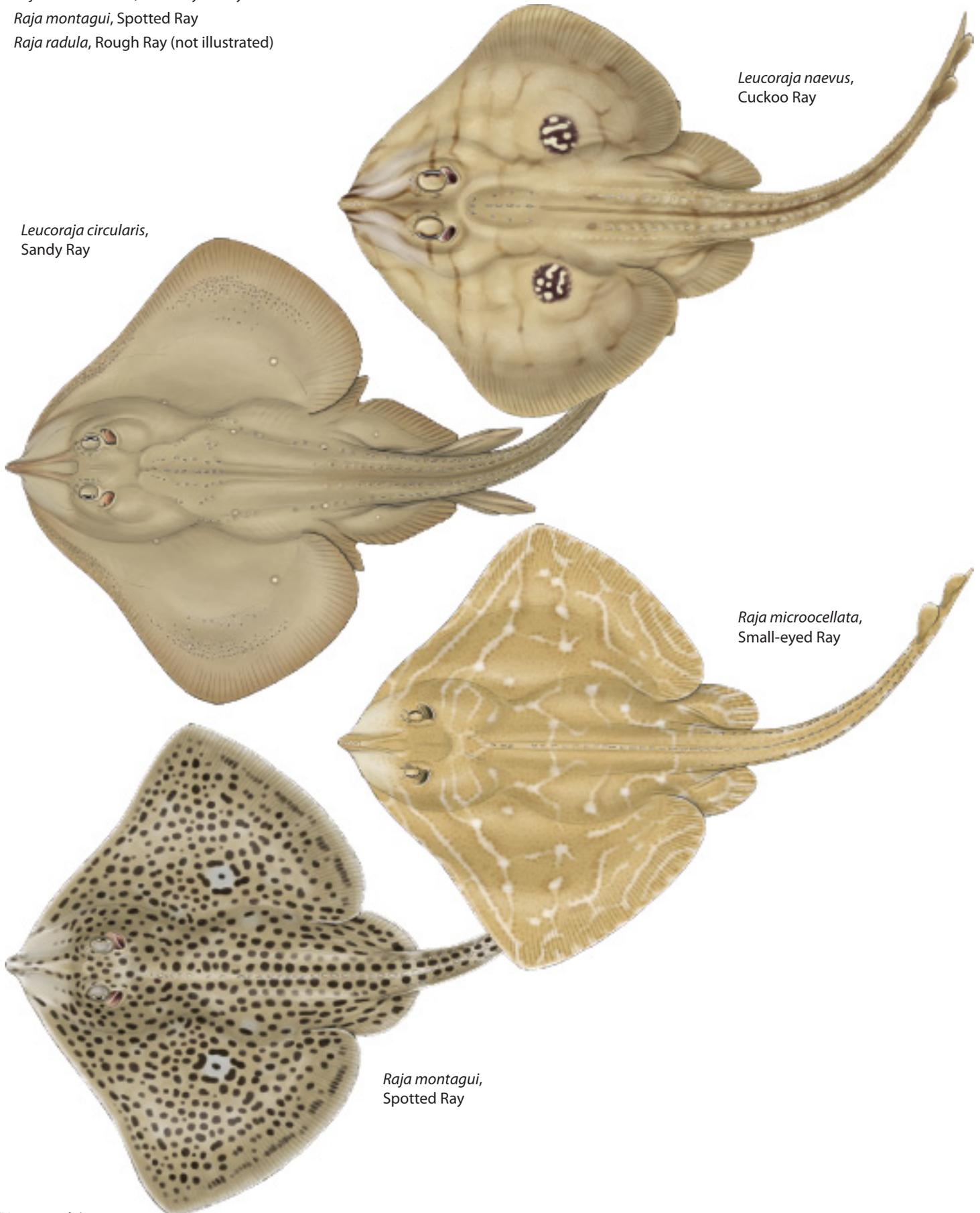
*Leucoraja circularis*, Sandy Ray

*Leucoraja melitensis*, Maltese Ray (not illustrated)

*Raja microocellata*, Small-eyed Ray

*Raja montagui*, Spotted Ray

*Raja radula*, Rough Ray (not illustrated)



*Leucoraja naevus*,  
Cuckoo Ray

*Leucoraja circularis*,  
Sandy Ray

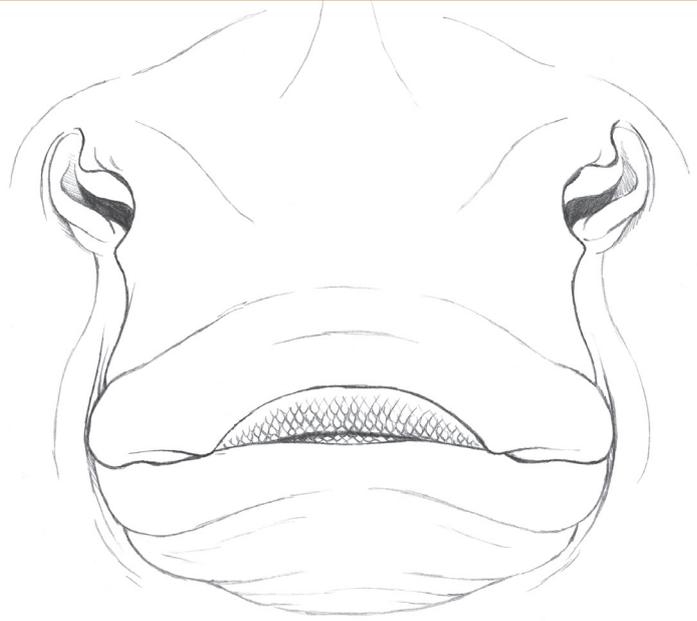
*Raja microocellata*,  
Small-eyed Ray

*Raja montagui*,  
Spotted Ray

(Not to scale)

## TEETH

The teeth are sharp cusped with 54–60 rows in the upper jaw (Farias *et al.*, 2005; Clark, 1926).



## ECOLOGY & BIOLOGY

### HABITAT

The Cuckoo Ray is a bottom dwelling species that is most commonly encountered around 200m (655ft), but can be found as shallow as 12m (40ft) or as deep as 290m (950ft) (Gibson *et al.*, 2006; Ellis *et al.*, 2005).

### EGGCASE

1. 50-70mm in length (excluding horns).
2. 30–50mm in width.
3. Delicate and rounded.
4. If unbroken, very long horns at top (Whitehead *et al.*, 1986).

Similar eggcase to the Spotted Ray, *Raja montagui*.

### DIET

Juvenile Cuckoo Rays feed mainly on small crustaceans such as *Lophogaster typicus* and Atlantic Mud Shrimps, *Solenocera membranacea*. Adults also feed on polychaetes and bony fish such as Smooth Sandeels, *Gymnammodytes semisquamatus* (Farias *et al.*, 2005). Studies using trawl discards have shown that Cuckoo Rays will scavenge when the opportunity arises (Olaso *et al.*, 2002).

### REPRODUCTION

The Cuckoo Ray reaches maturity at a length of around 60cm and an age of 4 to 5 years, and is known to mate throughout the year (Vaz *et al.*, 2006; Gallagher *et al.*, 2005; Whitehead *et al.*, 1986). It lays between 70 and 150 eggs a year which are deposited in sandy or muddy substrates (Luna, 2009). These eggcases measure 50-70mm long (excluding horns) and 31-39mm wide. The horns are extremely long with the anterior pair longer than the case (Whitehead *et al.*, 1986). The embryos take approximately eight months to develop and the hatchlings measure around 12cm in length (Serena, 2005). Juveniles congregate further offshore than most skate and ray young and are particularly abundant in the western Irish Sea and northern St. Georges Channel (Ellis *et al.*, 2005).



## COMMERCIAL IMPORTANCE

There is no targeted fishery for the Cuckoo Ray although it is an important bycatch species in mixed demersal fisheries throughout its range (Gibson *et al.*, 2006). Estimates from the French otter and twin trawl fleet in the Celtic Sea are that 50% of all Cuckoo Rays caught are discarded at sea (Pastors, 2002).

## THREATS, CONSERVATION, LEGISLATION

Due to its small size and higher reproduction rates, the Cuckoo Ray may be able to withstand fishing pressure better than the larger bodied species such as the Common Skate, *Dipturus batis*, and White Skate, *Rostroraja alba*. It is possible that increases in populations of small bodied species such as the Cuckoo Ray have masked the decline of the larger species in fisheries landing statistics (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).

## IUCN RED LIST ASSESSMENT

Least Concern (2008).

Near Threatened in Mediterranean.

## HANDLING AND THORN ARRANGEMENT

- Handle with care.
- Multiple rows of thorns on tail.
- 2 rows of thorns on body.
- Orbital thorns.



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