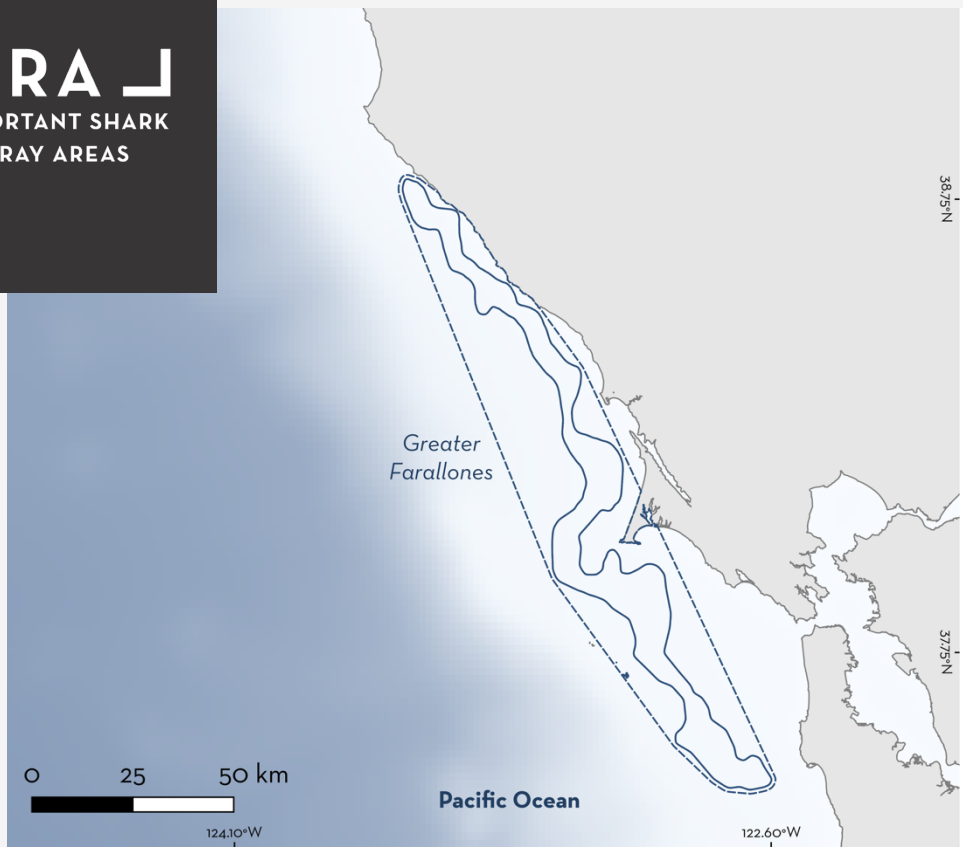
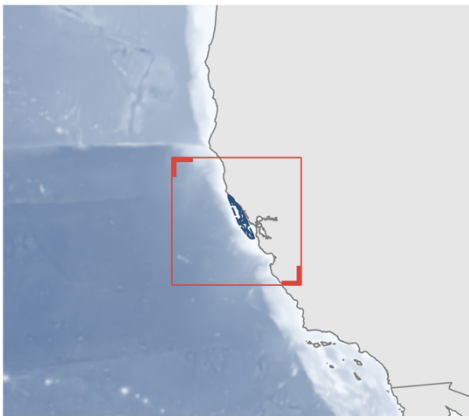
ISRA
IMPORTANT SHARK AND RAY AREAS





Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

GREATER FARALLONES ISRA

North American Pacific Region

SUMMARY

Greater Farallones is located in California, United States of America (USA). It is situated along the widest continental shelf on the west coast of the contiguous USA. The area is characterised by predominantly sandy substrates, with large underwater sand dunes, but also includes rocky and mixed substrates that support deep-sea corals and sponges. It is influenced by the California Current Upwelling System, one of the world's major coastal upwelling systems. Within this area there are: **range-restricted species** and **undefined aggregations** (California Skate *Caliraja inornata*).

CRITERIA

Criterion B – Range Restricted; Sub-criterion C5 – Undefined Aggregations

UNITED STATES OF AMERICA

55–115 metres

1,320.4 km²

DESCRIPTION OF HABITAT

Greater Farallones is located in California, United States of America (USA). It is situated along the widest continental shelf on the west coast of the contiguous USA. The area is characterised by predominantly sandy substrates, with large underwater sand dunes, but also includes rocky and mixed substrates that support deep-sea corals and sponges (ONMS 2024).

The area is influenced by the California Current Upwelling System, one of the world's major coastal upwelling systems and exhibits three oceanographic seasons: upwelling (April–June), relaxation (July–September), and storm season (December–February) (García-Reyes & Largier 2012). During upwelling, strong northwest winds drive nutrient-rich deep waters to the surface, enhancing primary productivity and supporting higher trophic levels, despite lower oxygen levels and increased acidity (ONMS 2024). This process underpins the region's high productivity and attracts migratory species. The area lies within a biogeographic transition zone, creating strong environmental gradients and high species diversity (ONMS 2024).

This Important Shark and Ray Area is benthic and subsurface and is delineated from 55–115 m based on the depth range of Qualifying Species in the area.

ISRA CRITERIA

SUB-CRITERION B – RANGE RESTRICTED

This area holds the regular presence of California Skate as a resident range-restricted species. The West Coast Groundfish Bottom Trawl Survey (WCGBTS) is conducted annually between May–July and August–October along the USA west coast between the USA-Canada border and the USA-Mexico border, at depths ranging from 55 to 1,280 m (Keller et al. 2017). The survey area is subdivided into ~12,000 equal-area grid cells, from which 188 cells are randomly selected each year within depth and latitudinal strata to ensure representative spatial sampling. All sharks and rays captured are sorted to species level (or the lowest possible taxonomic resolution) and weighed, and subsamples of selected species are measured. The trawl net used in the survey has a headrope measuring 25.9 m and a footrope measuring 31.7 m. Trawling is conducted during daylight hours at a target speed of 2.2 ± 0.5 knots, with a standard tow duration of 15 minutes (approximately 0.55 km) (Keller et al. 2017). Between 2011–2025, 8,386 tows were conducted in the entire survey area, of which 166 were within this area (2%) (NOAA NWFSC FRAM 2026).

California Skates were captured in 1,073 tows in the entire survey area (13.1% of total tows) at depths between 54–536 m. Within this area, the species was captured in 159 tows (95.8% of tows in this area) at depths between 56–112 m. The average catch-per-unit-effort (CPUE; number of individuals per square kilometre; ind/km^2) for tows with California Skate outside this area was 285.9 ind/km^2, while in this area it was 942 ind/km^2. The total number of individuals captured in all tows within this area was 2,417 (~14.6 per tow), while outside this area, 4,214 were captured (~0.5 per tow).

California Skates are restricted to the California Current Large Marine Ecosystem (LME) and the Gulf of California LME.

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Greater Farallones is an important area for undefined aggregations of one ray species.

The West Coast Groundfish Bottom Trawl Survey (WCGBTS) is conducted annually between May–July and August–October along the USA west coast between the USA-Canada border and the USA-Mexico border, at depths ranging from 55 to 1,280 m (Keller et al. 2017). The survey area is subdivided into ~12,000 equal-area grid cells, from which 188 cells are randomly selected each year within depth and latitudinal strata to ensure representative spatial sampling. All sharks and rays captured are sorted to species level (or the lowest possible taxonomic resolution) and weighed, and subsamples of selected species are measured. The trawl net used in the survey has a headrope measuring 25.9 m and a footrope measuring 31.7 m. Trawling is conducted during daylight hours at a target speed of 2.2 ± 0.5 knots, with a standard tow duration of 15 minutes (approximately 0.55 km) (Keller et al. 2017). Between 2011–2025, 8,386 tows were conducted in the entire survey area, of which 166 were within this area (2%) (NOAA NWFSC FRAM 2026).

California Skates were captured in 1,073 tows in the entire survey area (13.1% of total tows) at depths between 534–536 m. Within this area, the species was captured in 159 tows (95.8% of tows in this area) at depths between 56–112 m. The average catch-per-unit-effort (CPUE; number of individuals per square kilometre; ind/km^2) for tows with California Skate outside this area was 285.9 ind/km^2, while in this area it was 942 ind/km^2. The average number of individuals in a single tow with California Skate in this area was 15.2 (maximum = 128) and outside this area it was 4.6 (maximum = 50) for the same average area (0.02 km^2) (NOAA NWFSC FRAM 2026). The total number of individuals captured in all tows within this area was 2,417 (~14.6 per tow), while outside this area, 4,214 were captured (~0.5 per tow). Skates are often spatially aggregated and may be segregated by size and sex, with their distribution influenced by benthic habitat and depth, and occurring either in association with or independently of other skate species (Swain & Benoît 2006; Frisk 2010; Hoff 2010). They usually aggregate in high density areas where large catch quantities for these species occur (Bizzarro et al. 2014). Further information is required to understand the nature and function of these aggregations.

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QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
RAYS												
Caliraja inornata	California Skate	LC	17–671		X					X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Squalus suckleyi	North Pacific Spiny Dogfish	LC
RAYS		
Beringraja binoculata	Big Skate	LC
Caliraja rhina	Longnose Skate	LC
Caliraja stellulata	Pacific Starry Skate	LC
Tetronarce californica	Pacific Torpedo	LC

IUCN Red List of Threatened Species Categories are available by searching species names at www.iucnredlist.org Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.

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