

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

WEST & NORTH TAHITI ISRA

New Zealand & Pacific Islands Region

SUMMARY

West & North Tahiti is located on the northwestern side of Tahiti in the Society Archipelago of French Polynesia. The area is characterised by the outer slope of the barrier reef surrounding the coast of Tahiti with coral reefs, sand patches, coral debris, pinnacles of hard corals, and steep drop-offs. The area is influenced by strong and shifting currents. It overlaps with the Tetiaroa, Moorea et Tahiti Marine Key Biodiversity Area. Within this area there are: **threatened species** (e.g., Blacktip Reef Shark *Carcharhinus melanopterus*); **reproductive areas** (Tiger Shark *Galeocerdo cuvier*); **resting areas** (Tawny Nurse Shark *Nebrius ferrugineus*); and **undefined aggregations** (e.g., Grey Reef Shark *Carcharhinus amblyrhynchos*).

CRITERIA

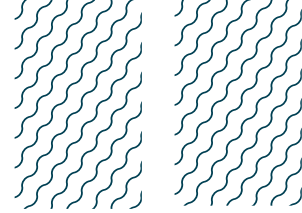
Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas; Sub-criterion C3 - Resting Areas; Sub-criterion C5 - Undefined Aggregations

FRENCH
 POLYNESIA

0-200 metres

17.05 km²





DESCRIPTION OF HABITAT

West & North Tahiti is located on the northwestern part of the island of Tahiti, in the Society Archipelago in French Polynesia. The area encompasses the Bay of Matavai to the northeast, the entrance of the Taunoa Pass, Papeete Pass, Taapuna Pass, Taipari Pass, and the Bay of Punaauia to the southwest. The area is characterised by the outer slope of the barrier reef surrounding the coast of Tahiti with coral reefs, sand patches, coral debris, pinnacles of hard corals, and steep drop off (Séguigne et al. 2023a). The area is influenced by strong and variable currents tidally influenced and sits within the oligotrophic oceanic system of the South Pacific Subtropical Gyre (Sauzède et al. 2020).

This area overlaps with the Tetiaroa, Moorea et Tahiti Marine Key Biodiversity Area (KBA 2024).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 200 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Three Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occur in the area. These are the Endangered Grey Reef Shark (Simpfendorfer et al. 2020a); and the Vulnerable Blacktip Reef Shark (Simpfendorfer et al. 2020b) and Tawny Nurse Shark (Simpfendorfer et al. 2021).

SUB-CRITERION C₁ – REPRODUCTIVE AREAS

West & North Tahiti is an important reproductive area for one shark species.

Visibly pregnant (i.e., with extended abdomens) Tiger Sharks and females with fresh mating scars are regularly recorded in the area (Begue 2017; C Séguigne pers. obs. 2024). A total of 1,027 Tiger Shark sightings were recorded between October 2012 and October 2017, with a total of 53 individuals' photo-identified by their dorsal fin during 544 scientific dives in the area (Begue 2017). Tiger Sharks were estimated to measure between <250–450 cm total length (TL), using laser photogrammetry. Size-at-maturity for this species is 226–305 cm TL for males and 250–350 cm TL for females (Ebert et al. 2021). Thus, most of the individuals were mature (64% of females, 100% of males) based on their sizes. The sex ratio (0.06:0.94, male: female) did not display any significant variation between years or between seasons with most of the individuals being females (94%; Begue 2017; Séguigne et al. 2023a). At least three pregnant Tiger Sharks, inferred from distended abdomens, were observed every year in the area during 2012–2017 (C Séguigne pers. obs. 2024). Further, several females (at least five individuals) with fresh mating scars were observed every year, especially during May–August. This seasonality of observations corresponds with the highest number of observed males, which had likely come to the area from the pelagic zone to mate (Begue 2017). In August 2013, a pre-copulatory behaviour was observed in the area (Begue 2017), further highlighting the importance of the area for mating. The total number of sightings of each individual over the six-year study ranged from 1–109 (mean = 16.1 ± 28.2 ; Séguigne et al. 2023a). The relative abundance of Tiger Sharks observed per dive was significantly higher during the austral winter (June–August) than in summer (Séguigne et al. 2023a). Up to eight Tiger Sharks were observed simultaneously (mean = 1.87 ± 1.30 SD) (Séguigne et al. 2023a). Additionally, from July 2011 to April 2018, a citizen science initiative

through the Observers of the Polynesian Shark Observatory conducted 1,090 dives in the area (Séguigne et al. 2023b). Divers recorded the date, time, site location, species, visually estimated sizes, sex, and estimated/counted number of individuals (Séguigne et al. 2023b). Tiger Sharks were recorded on 576 dives (52.8%) (Séguigne et al. 2023b), with a total of 907 individuals sighted, showing the predictable and regular presence in the area. Tiger Sharks were present in the area year-round; however, sightings of several individuals on a dive (up to six) were more frequent during May to October (Séguigne et al. 2023a, b). Although one dive site in the area operated as a provisioning site for Grey Reef Sharks until October 2017, Tiger Sharks were still present after that, when provisioning stopped. During 45 dives conducted between January–April of that year (2018), divers observed 15 Tiger Sharks on 13 of the dives from January–March (Séguigne et al. 2023b), despite it being the low season for their presence in the area (Begue 2017; Séguigne et al. 2023a). Further, provisioning did not affect the frequency or residency of the individuals observed based on the overall low fidelity at the site and the lack of increased site fidelity over time (Séguigne et al. 2023a).

SUB-CRITERION C3 – RESTING AREAS

West & North Tahiti is an important resting area for one shark species.

Tawny Nurse Shark are regularly observed resting, laying at the seafloor, often in caves or crevices, and sometimes resting in large groups in the area (C Séguigne pers. obs. 2024). Sightings occurred year-round between 2011–2024 but large aggregations of up to nine individuals resting together are observed between March–August (C Séguigne pers. obs. 2024).

Between 2011–2018, a citizen science initiative through the Observers of the Polynesian Shark Observatory conducted 1,090 dives in the area (Séguigne et al. 2023b). Tawny Nurse Shark were recorded on 264 dives (24.2%) (Séguigne et al. 2023b), with a total of 379 individuals sighted, showing their predictable and regular presence in the area, however, behaviour was not recorded in this survey. Tawny Nurse Sharks were observed in the area year-round; however, sightings of aggregations (up to five individuals) were more frequent during March–August (Séguigne et al. 2023b). A total of 29 aggregations of 3–5 individuals (mean = 3.17) were recorded (Séguigne et al. 2023b). Additionally, since April 2024 a citizen science program started monitoring sharks in the area during recreational dives ($n = 71$ dives), with a total of 122 Tawny Nurse Sharks recorded during this period. Resting behaviour comprised 68% ($n = 48$ dives) of the observations with aggregations of up to nine individuals (C Séguigne unpubl. data 2024). Individuals resting were mainly adults inferred from visual size estimates (C Séguigne pers. obs. 2024) and a size-at-maturity of ~235 cm TL (Ebert et al. 2021). Overall, resting behaviour made up the bulk of observations during the day, which is typical of this primarily nocturnal hunter (Ebert et al. 2021).

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

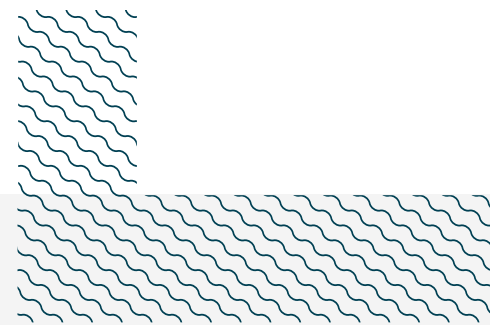
West & North Tahiti is an important area for undefined aggregations for two shark species.

From July 2011 to April 2018, a citizen science initiative through the Observers of the Polynesian Shark Observatory conducted 1,090 dives in the area (Séguigne et al. 2023b). Divers recorded the date, time, site location, species, visually estimated sizes, sex, and estimated/counted number of individuals during 50–60-minute dives (Séguigne et al. 2023b).

Between 2011–2018, Grey Reef Sharks were recorded on 885 dives (81.2%) (Séguigne et al. 2023b). Overall, 18,768 individuals were reported, including 869 instances (98.19% of the sightings) of between 3–76 individuals during a single dive (mean = 21.59 ± 11 SD) (C Séguigne unpubl. data 2024).

Aggregations (>2 individuals) were recorded in 2011 (n = 6 instances), 2012 (n = 65), 2013 (n = 60), 2014 (n = 160), 2015 (n = 168), 2016 (n = 203), and 2017 (n = 163) (Séguigne et al. 2023b). Although provisioning was occurring in the area until October 2017, aggregations of Grey Reef Sharks with up to 76 individuals (mean = 25.04) were observed after that period in November and December 2017 (n = 26 instances) and in 2018, until April (n = 43) when the survey ended (Séguigne et al. 2023b). Since provisioning stopped, recreational divers are observing them significantly less. However, rebreather divers report them on a regular basis in aggregations which can reach ~50 individuals at 40 m depth, while previously they were fed and observed between 12–20 m (Séguigne pers. obs. 2024). Additionally, in 2016 (July, August, and November) and in 2017 (July, August, and October), 80 baited remote underwater video station (BRUVS) surveys were placed along the outer reef within the area (Farabaugh et al. 2024). Grey Reef Sharks were recorded on seven of the deployments, with a maximum MaxN (maximum number of individuals of the species seen in a single frame) of two individuals (mean = 1.1 sharks) (Farabaugh et al. 2024). Female Grey Reef Sharks with mating scars are observed every year by recreational and technical divers in June (Séguigne pers. obs. 2024). Several pregnant females identified by distended abdomens and neonates with a visual inferred size of 60 cm TL were recorded between June and July at White Valley (one of the dive sites within the area) (Séguigne pers. obs. 2024). Further, neonates were also seen in Papenoo in October (C Séguigne pers. obs. 2024). Size-at-birth for the species is 45–64 cm TL (Ebert et al. 2021). Further information is required to confirm the nature and function of the aggregations for this species.

Between 2011–2017, Blacktip Reef Sharks were recorded on 914 dives (83.9%) (Séguigne et al. 2023b). Overall, 21,360 individuals were reported, including 890 instances (97.4% of the sightings) of between 3–41 individuals during a single dive (mean = 23.9 ± 12.23 SD) (C Séguigne unpubl. data 2024). Aggregations (>2 individuals) were recorded in 2011 (n = 6 instances), 2012 (n = 63), 2013 (n = 64), 2014 (n = 165), 2015 (n = 175), 2016 (n = 204) and 2017 (n = 170) (Séguigne et al. 2023b). Although provisioning was occurring in the area until October 2017, aggregations of Blacktip Reef Sharks with up to 41 individuals (mean = 34) were observed after that period in November and December 2017 (n = 27 instances) and between January–April 2018 (n = 43 instances) when the survey ended (Séguigne et al. 2023b). Additionally, in 2016 (July, August, and November) and in 2017 (July, August, and October), 80 BRUVS were deployed along the outer reef within the area (Farabaugh et al. 2024). Blacktip Reef Sharks were recorded on 72 of the deployments with a maximum MaxN of seven individuals (mean = 1.7 sharks) and with aggregations (more than three individuals) in 15 deployments (Farabaugh et al. 2024). Further information is required to confirm the nature and function of these undefined aggregations.



Acknowledgments

Clémentine Séguigne (IREMP) and Marta D Palacios (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2024 ISRA Region 10 - New Zealand and Pacific Islands workshop for their contributions to this process.

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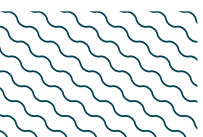
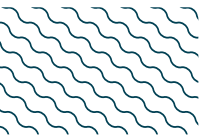
QUALIFYING SPECIES

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
SHARKS												
<i>Carcharhinus amblyrhynchos</i>	Grey Reef Shark	EN	0-280	X						X		
<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark	VU	0-100	X						X		
<i>Galeocerdo cuvier</i>	Tiger Shark	NT	0-1,275			X						
<i>Nebrius ferrugineus</i>	Tawny Nurse Shark	VU	0-70	X				X				

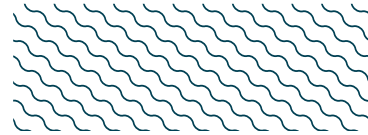
SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharhinus falciformis</i>	Silky Shark	VU
<i>Carcharhinus limbatus</i>	Blacktip Shark	VU
<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	CR
<i>Negaprion acutidens</i>	Sharptooth Lemon Shark	EN
<i>Triaenodon obesus</i>	Whitetip Reef Shark	VU
RAYS		
<i>Aetobatus ocellatus</i>	Spotted Eagle Ray	EN

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.



SUPPORTING INFORMATION



There are additional indications that this may be an important reproductive area for one shark species. Visibly pregnant Tawny Nurse Sharks were observed in the area between 2020–2024 during March–August (J Rouger pers. comm. 2024; C Séguigne pers. obs. 2024). Pregnant females ($n = 11$), inferred from distended abdomens, were observed in 2020 (May), 2021 (May), 2022 (June), 2023 (August), 2024 (March, April, May, June, August; J Rouger, P Kister, T Chand, L Lionnet & M Doublet pers. comm. 2024; C Séguigne pers. obs. 2024). Additionally, two Tawny Nurse Shark pups, inferred from their estimated size (both <120 cm TL) and having a light body colour, were sighted in September 2024 (L Lionnet & M Doublet pers. comm. 2024). Size-at-birth for the species is 40–60 cm TL (Ebert et al. 2021). Combined, these observations suggest pupping may occur seasonally in late winter. Further information is required to determine the importance of the area for the reproduction of the species.



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