# Farikede Area Conservation Action Plan 2026-2036











## Final Draft November 2025

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# 1. List of Acronyms

CAP Conservation Action Plan

EIA Environmental Impact Assessment

ERA Environmental Regulatory Authority

FCC Fuvahmulah City Council

ISRA Important Shark and Ray Area

IUCN International Union for Conservation of Nature

METT-4 Management Effectiveness Tracking Tool, version 4

MoTE Ministry of Tourism and Environment

MPA Marine Protected Area

NGO Non-Government Organisation

OCPP Ocean Country Partnership Programme

PAME Protected Area Management Effectiveness

PCA Protected and Conserved Area

SSC Species Survival Commission

UNESCO The United Nations Educational, Scientific and Cultural Organisation

# 2. Executive Summary

The Farikede Area, located in Fuvahmulah City Island Atoll in the southern Maldives, was officially designated as a Marine Protected Area (MPA) on 22 July 2020 under the Environmental Protection and Preservation Act (Law no. 4/93). Encompassing 6.37km², Farikede Area forms a core area and buffer zone of the Fuvahmulah UNESCO Biosphere Reserve and is classified as a Category 6 Habitat/Species Management Area, aligned with IUCN Category IV for sustainable use of natural resources.

Renowned globally as a premier dive site, the MPA hosts a rich diversity of threatened and endangered shark and ray species, including thresher sharks (*Alopias pelagicus*), oceanic manta rays (*Mobula birostris*), scalloped hammerheads (*Sphyrna lewini*), and whale sharks (*Rhincodon typus*). It also serves as a locally important habitat for reef shark species such as whitetip (*Triaenodon obesus*) and silvertip (*Carcharhinus albimarginatus*). Farikede is part of the Fuvahmulah Atoll Important Shark and Ray Area (ISRA), recognised by the IUCN Species Survival Commission (SSC) Shark Specialist Group in 2023. As part of this globally and locally significant network, Farikede holds exceptional ecological, economic, and cultural value. These include internationally important populations of threatened sharks and rays, the economic benefits generated through dive tourism, and the enduring social and cultural connections to traditional fishing practices. These values form the foundation of the Conservation Action Plan (CAP) and directly inform the long-term management objectives for the MPA.

Developed collaboratively by the Ministry of Tourism and Environment (MoTE), Fuvahmulah City Council (FCC), and the UK's Ocean Country Partnership Programme (OCPP), the CAP outlines a ten-year strategy (2026–2036) for managing Farikede. It supports the Protected Area Regulation (2018/R-78) and fulfills Article 12 requirements for site-specific management. The CAP was shaped through extensive stakeholder engagement from November 2024 to November 2025, including community consultations, surveys, and a validation workshop. It also draws on findings from a Protected Area Management Effectiveness (PAME) evaluation conducted during the same period.

To safeguard Farikede's key values and realise the vision of "a thriving ecosystem within Farikede Area that supports sustainable activities and advances understanding and appreciation of its unique biodiversity", five strategic objectives have been established, each supported by targeted management actions designed to achieve them.

- 1. The abundance and diversity of the endangered and threatened species including but not limited to shark and ray species that are known to regularly use the MPA is maintained at current levels or has increased.
- 2. The status of the coral reef is maintained at current levels or improved, to continue the supporting role it provides to the shark populations of the MPA and the local community.
- 3. Social and economic benefits provided by the MPA are reviewed, and recommendations around sustainable management will have been identified.

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- 4. The appropriate strategies and resource requirements have been identified, and will be in the process of being implemented, to support the equitable, inclusive and effective governance and management of the MPA.
- 5. Understanding of the MPA is improved at a local and national scale to support engagement with the local community and visitors to Maldives.

Monitoring will be essential to track the condition of Farikede's key values over time and assess progress toward management objectives. As a core area of the Fuvahmulah UNESCO Biosphere Reserve, Farikede's monitoring results will also contribute to UNESCO's periodic reviews and inform national reporting on the status of the Maldives' Protected and Conserved Areas (PCA) network. Management actions will be subject to ongoing evaluation to determine whether they are achieving the desired outcomes, addressing priority management needs, and meeting the objectives of the MPA. Annual reviews will assess whether activities have been implemented as planned and identify any challenges affecting delivery and resource allocation.

This CAP provides a clear roadmap for protecting Farikede's ecological integrity while ensuring long-term benefits for the local community and marine tourism.



# 3. Introduction

Farikede Area was established as a Marine Protected Area (MPA) under the Environmental Protection and Preservation Act (Law no. 4/93) on the 22nd of July 2020 and covers an area of 6.3675km². The MPA forms a core area of the Fuvahmulah UNESCO Biosphere Reserve in Fuvahmulah City, southern Maldives. It was designated as a Category 6 (Habitat/Species Management Area) to sustainably preserve and maintain the biodiversity and natural resources of Farikede, and to conserve the area such that it provides sustained benefits to the local community. Farikede is a globally recognised dive site due to the number of pelagic species that frequent the area including thresher shark (*Alopias pelagicus*), oceanic manta ray (*Mobula birostris*), scalloped hammerhead (*Sphyrna lewini*) and whale shark (*Rhincodon typus*).

This Conservation Action Plan (CAP) supports the Protected Area Regulation (2018/R-78) and together they set out how Fuvahmulah City Council (FCC) and partners will manage Farikede Area, as stipulated under Article 12 of the Protected Areas Regulation (2018/R-78). The CAP describes the vision and management objectives for Farikede, and how these will be achieved, outlining short, medium and long-term actions for the next ten years from 2026 to 2036.

The CAP has been developed with assistance from the Ministry of Tourism and Environment (MoTE), FCC, and the UK's Ocean Country Partnership Programme (OCPP)¹. Consultations with stakeholders and the local community were held throughout the development of the CAP from November 2024 to November 2025. Stakeholder engagement included focused meetings, online surveys and a validation workshop to help identify the key values of Farikede, develop an agreed vision and to determine priority management actions to help achieve the MPA's objectives. The CAP was also informed by a Protected Area Management Effectiveness (PAME) evaluation of Farikede Area that was completed between 2024 and 2025.

# 4. Description of Farikede Area

Farikede Area is designated as a Category 6 Habitat/Species Management Area under the national Maldives Protected Area Categories. This is the equivalent of the IUCN Protected Area Category IV. As well as forming a core area and buffer zone of the UNESCO Fuvahmulah Biosphere Reserve, the MPA is also included in the Fuvahmulah Atoll Important Shark and Ray Area (ISRA), recognised and delineated by the IUCN Species Survival Commission Shark Specialist Group in 2023 (IUCN SSC Shark Specialist Group, 2023).

<sup>&</sup>lt;sup>1</sup> The Ocean Country Partnership Programme (OCPP) is a bilateral technical assistance and capacity building programme that provides tailored support to countries to manage the marine environment more sustainably, including by strengthening marine science expertise, developing science-based policy and management tools and creating educational resources for coastal communities. The OCPP delivers work under three thematic areas: biodiversity, marine pollution, and sustainable seafood. Funding is provided through the overarching Blue Planet Fund (BPF) by the UK Department for the Environment, Food and Rural Affairs (Defra). The authors would like to thank and acknowledge Defra on behalf of the UK Government for the funding: project number GB-GOV-7-BPFOCPP in funding this work.

# 4.1. Location/ Oceanography

Farikede is located on the southwestern edge of Fuvahmulah (Figure 1). It consists of a spur and groove<sup>2</sup> reef that extends 2km from the shore as a gentle sloping coral reef between 10 and 15m in depth (IUCN SSC Shark Specialist Group, 2023) before it drops off into a plateau at 35 to 60m (PDF, 2022). The plateau then plunges into much deeper waters, believed to potentially reach depths of around 300m. However, the depth of the MPA is not definitely known due to a lack of bathymetry data.

Due to the isolated location of Fuvahmulah, with no landmasses nearby, Farikede is susceptible to large swells and strong currents which bring nutrient rich waters to the MPA. Oceanic currents and associated ocean upwellings are influenced by the northeast monsoon (Iruvai) from January to March and the southwest monsoon (Hulhan'gu) from May to November (Shankar et al. 2002; Anderson et al. 2011).

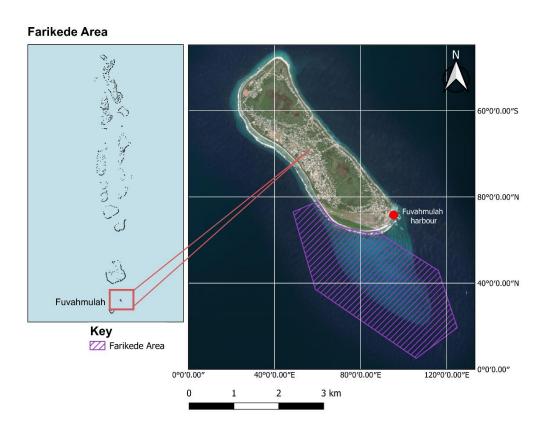


Figure 1. Map showing the location and boundary of Farikede Marine Protected Area, Fuvahmulah, Maldives

<sup>&</sup>lt;sup>2</sup> A spur and groove coral reef is a type of coral reef morphology that consists of parallel ridges (spurs) separated by troughs (grooves). They are found on the outside part of the coral reef that faces open ocean.

# 4.2. Marine Biodiversity

The coral reef at Farikede is a good example of an oceanic reef in Maldives. While the reef has not been extensively surveyed to identify the number of coral and associated reef species present, it does include various reef forms with diverse corals, such as soft coral, mushroom corals, and cabbage gardens (Dryden et al., 2020). The reef flat is subject to excessive wave energy resulting in parts being mostly rubble. However, this wave energy brings in colder ocean currents, thought to help protect the coral from increasing sea temperatures and potentially avoid the worst risks from coral bleaching. Compared to other coral reefs across Maldives, Farikede has experienced very little bleaching to date.

The reef supports a wide range of species and complex ecological interactions, reflected in the high abundance and diversity of large pelagic and reef-associated fish. Commonly observed species include great barracudas (*Sphyraena barracuda*), dogtooth tuna (*Gymnosarda unicolor*), yellowfin (*Thunnus albacares*) and skipjack tunas (*Katsuwonus pelamis*), giant trevallies (*Caranx ignobilis*), various grouper species (family *Serranidae*), wahoo (Acanthocybium solandri), snappers (family *Lutjanidae*), and the Napoleon wrasse (*Cheilinus undulatus*). Locally referred to as the Maahulhunbu Landaa, the Napoleon wrasse holds particular ecological significance due to its endangered global status on the IUCN Red List (Russell, 2004) and its role as a key indicator species. As such it is listed as a protected species under the National Species Regulation (2021/R-25) and is also protected under the General Fisheries Regulation of the Maldives (2020/R-75). Farikede is also one of the few places in the Maldives where ocean sunfish (*Mola mola*) are seen, mostly at the end of the south-west monsoon.

The MPA is an ecologically significant site for both pelagic and reef-associated shark species (Zerr, 2024). Over 17 species of sharks and rays (Table 1) are known to utilise the area for feeding, breeding, resting and cleaning (IUCN SSC Shark Specialist Group, 2023). Among the notable species observed are the critically endangered scalloped hammerhead (*Sphyrna lewini*), as well as the endangered pelagic thresher shark (*Alopias pelagicus*), whale shark (*Rhincodon typus*), oceanic manta ray (*Mobula birostris*), and grey reef shark (*Carcharhinus amblyrhynchos*)

# 4.3. Human Activities

#### 4.3.1. Dive Tourism

Farikede is a popular drift dive site for advanced and expert scuba divers to view pelagic shark species, particularly, thresher sharks at the cleaning station and schooling hammerheads. On average 67% of divers that stay on Fuvahmulah participate in diving activities at Farikede (Araujo et al., 2024) with the high season taking place from January to June. However, difficult dive conditions due to strong currents limit the number of days when diving can take place in the MPA. Resulting in an average 193 dive days per year (range 70-300 days, 53% of all days) (Araujo et al., 2024). The average dive group size taken to Farikede is 11.3 divers (range 4-20), with two dive guides per group on average (Araujo et al., 2024). Based on the current number of dive operators in Fuvahmulah (n=12), if conditions are good an average of 156 divers could potentially visit the MPA across one day, noting that some operators have more than one vessel and this does not

include liveaboards. Between December to April, liveaboards are present in Fuvahmulah with an average of 4-5 visiting at one time. Although, the extent to which the liveaboards use Farikede Area is not known.

## 4.3.2. Artisanal Fishing

In addition to dive tourism, Farikede is actively used by the local community for small-scale artisanal fishing, both for recreational purposes and subsistence. Fishing can occur year-round but is most common during the northeast monsoon (December to March), when calmer conditions allow for safer access to the reef. During this period, several boats (under 12 metres) may operate daily, targeting reef fish such as soldierfish, groupers, and snappers using low impact methods such as handlines, casting rods, reels, and jigs. Reef fish are occasionally taken as live bait for tuna fishing, and on exceptionally calm days, experienced free divers may hand-catch lobster and octopus. Some fishers also troll across and along the southern boundary of the MPA in deeper waters for pelagic species like barracuda, rainbow runners, tuna, and wahoo. Reef fishing typically occurs in the evening. The exact number of boats using the MPA and their fishing effort is not known but there is approximately 20 boats in total that reef fish from Fuvahmulah harbour and target various sites around the island.

## 4.3.3. Transport routes

Farikede is located at the south of Fuvahmulah island, approximately 0.50km from Fuvahmulah harbour at its closest point. Consequently, any vessels travelling to and from the harbour from the south are likely to transit through the MPA. This includes ferries, fishing vessels, liveaboards and dive boats. The ferry route to Addu City runs through the MPA four times a day (one return trip in the morning and a second return trip in the afternoon) seven days a week. On occasions when the waves are too large in the MPA, vessels will transit around the boundary of the MPA or sometimes travel north from the harbour and travel around the island instead for calmer conditions. However, this adds considerable time and expense to travel. Cargo ships are not likely to transit the MPA as they mostly originate from Malé, therefore they do not transit far enough south to enter the MPA.

# 5. Key Values of Farikede Area

# 5.1. Internationally Important Populations of Threatened Shark & Ray Species

As of 2023, Farikede has been internationally recognised as part of the Important Shark and Ray Area (ISRA) in Fuvahmulah and is nationally important for its vast range of threatened shark and ray species that use the site. To date, over 17 species of shark and ray have been observed in the MPA. Of these, two are listed as Critically Endangered, 10 as Endangered, four as Vulnerable and one as Near Threatened on the IUCN Red List<sup>3</sup>. Table 1 provides an overview of identified

<sup>&</sup>lt;sup>3</sup> IUCN Red List categories as of March 2025

species, based on observed sightings by dive operators and researchers. Note this is not an exhaustive list.

Table 1 IUCN Red List categories for shark and ray species observed in Farikede Area MPA.

IUCN Red List Category	Shark & Ray Species	Observed Presence*
Critically Endangered	Scalloped hammerhead shark (Sphyrna lewini)	October - May
	Ornate eagle ray (Aetomylaeus vespertilio)	Occasional sighting
Endangered	Grey reef shark (Carcharhinus amblyrhynchos)	Year-round
	Oceanic manta ray (Mobula birostris)	March-May
	Shortfin mako shark ( <i>Isurus oxyrinchus</i> )	One sighting
	Shorthorned pygmy devil ray (Mobula kuhlii)	Occasional sighting
	Sicklefin devil ray (Mobula tarapacana)	Occasional sighting
	Sicklefin lemon shark (Negaprion acutidens)	Occasional sighting
	Smalltooth sand tiger (Odontaspis ferox)	Occasional sighting
	Pelagic thresher shark (Alopias pelagicus)	Year-round
	Whale shark (Rhincodon typus)	December – April
	Spotted eagle ray (Aetobatus ocellatus)	Occasional sighting
Vulnerable	Silvertip shark (Carcharhinus albimarginatus)	Year-round
	Whitetip reef shark ( <i>Triaenodon obesus</i> )	Year-round
	Bull shark (Carcharhinus leucas)	Occasional sighting
	Silky shark (Carcharhinus falciformis)	Year-round
Near Threatened	Tiger shark (Galeocerdo cuvier)	Year-round

<sup>\*</sup>Based on diver observations of species sighted within Farikede Area this column provides an overview of the likelihood of encounters throughout the year. Note observed presence does not mean the species are not present in the area outside of these observations. It has also been observed that sightings are changing throughout the year due to the potential impacts of climate change. Further research is required to understand the residency of each species at Farikede.

The MPA is of particular importance for the following species of shark and ray:

- Regionally important cleaning station for endangered pelagic thresher shark: The
  waters of Farikede host one of only a few known sites in the Maldives and Western Indian
  Ocean where pelagic thresher sharks are observed at cleaning stations (IUCN SSC Shark
  Specialist Group, 2023).
- Nationally important oceanic manta ray hotspot: Fuvahmulah has been identified as an important location for oceanic manta ray in Maldives with 86% of national sightings recorded here (S Hilbourne unpubl. data 2023 cited in IUCN SSC Shark Specialist Group, 2023), of which Farikede is a hotspot.
- World's largest known aggregation of tiger sharks: Fuvahmulah is home to the world's largest known tiger shark aggregation with a total of 239 individual sharks identified in the area (Vossgaetter et al., 2024). Of these individuals, 84% are female and represent both juvenile, adults and pregnant adults. It is thought that the waters of Fuvahmulah provide suitable conditions for gestation. Farikede is a hotspot for tiger shark sightings compared to other reefs around Fuvahmulah. It is suggested that their association with the site may be due to its unique topography, compared to other areas around Fuvahmulah (Zerr, 2024).
- National hotspot for large, female whale sharks: Whale sharks sighted at Farikede are significantly larger than populations in other areas of Maldives with individuals measuring on average 770cm with estimates of larger individuals ranging between 850-1,400 cm in length compared to 567cm at South Ari Atoll (IUCN SSC Shark Specialist Group, 2023). Ninety percent of whale sharks encountered (where sex has been determined) are also female, which shows a high female sex bias compared to the rest of Maldives (South Ari 91% male sex bias (Perry et al., 2018) and accounts for 38% of entire female sightings in Maldives (MWSRP unpubl. Data 2023). Indicating that the MPA may be a potential aggregation site for female whale sharks. Based on local diver observations, sightings of whale sharks tend to involve different individuals, rather than repeated observations of the same specimen.
- Nationally important aggregations of critically endangered scalloped hammerheads: Seasonal aggregations of the critically endangered scalloped hammerhead (*Sphyrna lewini*) have been observed at the plateau reef in Farikede between October and May. Diver reports have consistently documentedschools ranging from 30 to60 inidividuals annually since 2016 (IUCN SSC Shark Specialist Group, 2023). However, it remains uncertain whether scalloped hammerheads inhabit the deeper waters surrounding Fuvahmulah year-round, as current observations are limited to shallower depths.
- Locally important resting and feeding area for reef sharks
   Reef sharks are the most abundant shark species at Farikede, where the structural
   complexity of the plateau, strong currents, and small sandy patches create ecologically
   significant habitat conditions, particularly for whitetip, grey, and silvertip reef sharks (Zerr,
   2024; IUCN SSC Shark Specialist Group, 2023). Silvertip sharks are more frequently
   observed at Farikede than at other locations around Fuvahmulah, with aggregations of over
   40 individuals documented (IUCN SSC Shark Specialist Group, 2023).

## 5.1.1. Coral Reef Supporting Habitat

The structural complexity of the coral reef and oceanic processes it is subjected to (strong currents) supports the abundance of shark species found within the MPA. The sloping reef's proximity to offshore habitats and persistent upwellings further align with known habitat preferences of grey and silvertip reef sharks, supporting both resting and feeding opportunities (Zerr, 2024; IUCN SSC Shark Specialist Group, 2023; Espinoza et al., 2014 and 2015).

## 5.2. Economic Value Associated with Dive Tourism

Farikede is a world class dive site due to the sheer abundance of pelagic shark species that can be observed in one dive. It is a key attraction for divers, offering a unique encounter not found elsewhere in the Maldives. As a result, the MPA contributes to the success of the dive tourism industry in Fuvahmulah which has undergone rapid expansion in recent years from one dive centre in 2013 to 11 in 2023 (Araujo et al., 2024). At the time of writing (November 2025) there were 12 active operators with several more in development. Based on estimated dive group sizes, frequency and 12 operating vessels it is estimated that Farikede Area potentially provides a direct economic value of 1,800,000 USD per year<sup>4</sup>.

## 5.3. Social and Cultural Value Associated with Fishing

Reef fishing in the MPA holds social and cultural significance, serving as both a cherished pastime and a connection to ancestral traditions. The reef flat within Farikede Area serves as a preferred fishing ground for the local community, where traditional methods, as described in section 4.3.2 are practiced. Catches are typically consumed by the fishers and their families or sold locally within the community.

<sup>&</sup>lt;sup>4</sup> Estimated value based on average dive group of 11 divers across 12 boats with an average dive price of 71 USD multiplied by 193 days in the year (average number of days Farikede may be accessible to dive) (Araujo et al., 2024). Figure doesn't include liveaboards or multiple boats owned by some operators.

# 6. Threats, Constraints & Opportunities

## 6.1. Threats

The key threats to the marine environment and associated biodiversity of Farikede Area have been identified by stakeholders and summarised below in order of impact, starting with those that pose the greatest threat. Action to mitigate high risk threats should be prioritised where possible.

#### **Climate Change**

Coral bleaching due to increased sea temperatures is seen as one of the greatest threats to the MPA and Fuvahmulah as a whole. Although Farikede's reefs have shown greater resilience than others across the Maldives, bleaching events in 2016 and 2020 still led to a loss in coral cover. Future bleaching episodes could severely impact reef-dependent species such as the pelagic thresher shark, potentially leading to declines that would negatively affect dive tourism. A degraded reef would also reduce fish populations, disrupt the wider ecosystem and threaten the livelihoods of the local fishing community. Broader oceanic changes, including reduced upwelling of nutrient-rich waters across the Indian Ocean (Harris et al., 2020), further compound the risks facing Farikede's reef ecosystem.

#### **Extraction of natural resources**

The MPA provides important fishing grounds for the local community who use low-impact fishing methods such as pole and line, trolling, handline, and free diving to collect by hand . However, there is no data available on fishing effort in the MPA to inform whether fishing is currently within sustainable limits. Bycatch of sharks is also a possibility, including deep sea shark species, but the extent to which sharks are accidentally caught and the impact on individual post-release survival is not known. Shark depredation (the partial or complete removal of a hooked fish by a shark from an angler's line before the line can be retrieved) is also an increasing concern reported by the local fishers in the area.

There are growing concerns about the sustainability of harvesting practices for species such as octopus, sea cucumber, and lobster in the area. Reports have highlighted instances of non-compliant methods, including collection of lobster while scuba diving and the use of chemical agents, which pose risks to the marine environment and biodiversity.

Illegal sand extraction along the shore boundary of the MPA is an occasional issue. FCC have guidelines in place to stop this activity however, there are difficulties in implementing and enforcing the guidelines therefore, sand extraction is an ongoing threat.

#### **Development activities around the MPA**

Future plans to develop Fuvahmulah airport and extend the length of the runway pose an uncertain threat to the MPA due to the airport's proximity to the site. There is a potential risk that expansion could fall within the boundary of the site and/or development activities could negatively impact the area through increased sedimentation and changes to ocean processes due to reclamation. However, development would be subject to Environmental Impact Assessments (EIAs) and necessary mitigation measures to reduce negative impacts on the MPA would be sought. Previous development, including the harbour and sea wall construction have resulted in changes to the hydrodynamics and sediment movement around the island. Diver reports indicate increased sedimentation on the reef and plateau in Farikede, which negatively affects coral health by smothering and reducing light availability for feeding.

#### Recreational activities and tourism

The number of divers using the MPA has increased over recent years due to an expansion in tourism on the island. Current levels are believed to be at sustainable levels with few negative impacts on marine life observed, although minor damage to the coral reef has been noted to occur due to divers accidentally kicking or grabbing hold of coral during strong currents. At other dive sites in Fuvahmulah, increased diver presence has been observed to alter pelagic thresher shark behaviour, with individuals spending less time at cleaning stations (personal communication, 26 September,2025). Similar disturbances could occur in Farikede if diver numbers are not carefully managed. To mitigate such impacts, Shark Diving Codes of Conduct have been developed in collaboration with dive operators to minimise impacts during interactions with sharks, including specific guidelines for thresher sharks. These include guidelines on dive group sizes and the use of strobes. However, while these codes help manage in-water conduct they do not currently include suggested limits on the overall daily number of divers visiting the MPA.

Diving at Farikede is technical with strong currents, subsequently, it is informally agreed that divers must be a minimum PADI Advanced level to visit the site. However, this guidance is not followed by all dive operators and could jeopardise the reputation of the MPA as a world-class dive site if an incident were to occur.

Diving practices at a nearby dive site outside the boundary of the MPA where tiger sharks are provisioned, may also potentially influence the behaviour of resident shark populations and other marine biodiversity within Farikede due to the high concentrations of large predatory sharks attracted to the area.

An emerging concern for the MPA is the potential impact of sport fishing along its boundary, typically involving 3-5m private speedboats or fishing vessels that troll or use rod and line. Although currently limited in scale and primarily catch and release, it remains an activity to monitor closely.

#### Boat traffic in and around the MPA

Farikede is situated in the southwest of Fuvahmulah, close to the harbour entrance, therefore vessels travelling to and from the harbour in this direction are likely to transit through the MPA, including the twice daily ferry to Addu City. Due to the strong currents in the area vessels tend to keep up speed when transiting the site for safety reasons. High travel speed could pose a collision risk with marine life such as manta rays on the surface and divers. This risk is reduced for divers as operators use a dive flag when in the water to highlight their location.

Additionally, despite anchoring being prohibited within the MPA (in any situation other than an emergency in which a person's life is in danger) it is known to occasionally take place and has been observed to cause damage to the coral and reef. There may be a lack of awareness around this rule

#### **Pollution**

A combination of inadequate waste management systems on Fuvahmulah, inappropriate disposal of organic waste close to the island from vessels and littering pose pollution risks to the marine environment generally, and this could include the Farikede Area.

## 6.2. Constraints

The following issues have been identified by stakeholders as constraints to the effective management of the MPA.

#### Governance

There is currently no staff, resources or funding allocated to undertake management and monitoring related to the MPA.

The police and other law enforcement officers are not fully aware of the regulations governing MPAs

#### **Community Awareness**

There is a critical gap in community awareness related to the MPA and a wider lack of understanding about the importance of protecting marine life.

#### **User Conflict**

In Farikede, there are conflicts between tourism operators and fishermen, both of whom seek to generate income and undertake leisure activities in the same areas.

# 6.3. Opportunities

Farikede Area offers a number of opportunities for the local community and visitors.

#### **Tourism**

Economic benefits from dive tourism, with tourists attracted to Farikede due to the unique opportunity of seeing several large charismatic pelagic shark species including the pelagic thresher shark, schooling hammerheads, and whale sharks. The designation of Fuvahmulah as a Biosphere Reserve provides an opportunity for greater tourism potential in the future. Greater use of Fuvahmulah's Biosphere Reserve status could also bring wider benefits to the community.

#### Research and education

Being one of the few known locations in Maldives to view several pelagic shark species at once, the MPA offers an ideal opportunity to study and learn more about these endangered and threatened species. Research will build international knowledge and understanding that could be used to advance efforts in saving these species from extinction. This research also presents an exciting opportunity for the local community and visitors to access and learn from cutting edge science and provides avenues to improve awareness about the MPA.

Visitors to the site also provide an opportunity for developing citizen-science programmes which can support the collection of long-term datasets.

#### **New partnerships**

The effective management and monitoring of the MPA will rely upon cross-sectoral partnerships between government and non-government bodies, working together to achieve the objectives of the site. The decentralised process in Maldives enables Fuvahmulah City Council to lead the management of the MPA, whilst drawing upon national expertise as required. The MPA also provides the opportunity to strengthen existing relationships and build new ones which will not only benefit the MPA but also wider local and national environmental management. It will also promote cross learning and understanding from different stakeholder views and experiences.

# 7. Governance

Farikede Area is managed by several organisations across government with monitoring and outreach efforts supported by dive operators and NGOs. Fuvahmulah City Council are ultimately responsible for the MPA with support from the MoTE and the ERA. The governance structure for the management of the site is summarised in Table 2.

Table 2 Organisations and their roles in supporting the management of Farikede Area

Organisation	Role & Responsibilities
Fuvahmulah Biosphere Reserve Advisory Committee (Consists of representatives from Fuvahmulah City Council, ERA, Ministry of Tourism and Environment, Diving Association of Fuvahmulah, Liveaboards sector, Fuvahmulah guesthouses)	Responsible for the implementation of the Conservation Action Plan. Lead day-to-day management operations including managing visitor use, and collection of social, economic and compliance monitoring data.  Provide advice to the Council on the management of the MPA.
Ministry of Tourism and Environment (Environment Management and Conservation Department)	Provide policy steer and technical support to ensure objectives of the MPA are obtained. And ensuring compliance with the objectives of a UNESCO Biosphere Reserve
Environmental Regulatory Authority (ERA)	Regulatory and enforcement authority.  Non-compliance with the MPA regulation is reported to and dealt with by the ERA.  Issue permits related to research and monitoring.  Support ecological monitoring e.g., reef check surveys
Maldives Police Service and Coast Guard	Can assist enforcement of MPA regulations.
Other – e.g., dive operators and NGO's	Can support monitoring, research and outreach activities.

## 7.1.1. Key Stakeholders

In addition to the key organisations that are responsible for the management of Farikede Area (Table 2) the following are key stakeholders of the site:

Stakeholders who directly use the site:

- Fuvahmulah fishing community small-scale fishing
- Fuvahmulah based dive operators dive trips and research
- Dive liveaboards dive trips
- NGOs undertaking research and education
- Transport services e.g., ferries

#### Other stakeholders:

- Fuvahmulah Community Over 9000 people live in Fuvahmulah (2022 Census) all of which indirectly benefit from the MPA. Some members of the community financially benefit from the MPA due to the tourism and fisheries it provides e.g., guest houses, gift shops and restaurants. Whilst others may use the MPA for recreational, educational or wellbeing purposes.
- Other NGOs not directly involved in the MPA.

# 8. Boundary and Permitted Activities

Farikede Area spans an area of 6.37km² and is divided into two zones under UNESCO Biosphere Reserve zoning: a 4.59km² core area and a 1.78km² buffer zone (Figure 2). The MPA boundary extends from the southwest shoreline of Fuvahmulah and out to sea, encompassing the reef plateau, with its furthest point located 2.98km offshore.

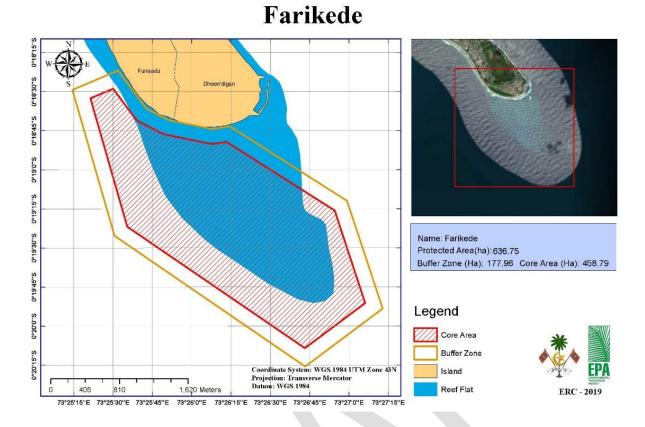


Figure 2. Map of Farikede Area boundary and zonations, as described in the Farikede Announcement.

Farikede is a multi-use MPA meaning some human activities that do not negatively impact the objectives of the MPA are allowed. This includes activities such as scuba diving and low impact fishing methods. The following list outlines activities that are prohibited in the MPA and apply to both the core and buffer zones:

#### **Actions prohibited in Farikede Area:**

- 1. Dropping anchor in any situation other than an emergency in which a person's life is in danger.
- 2. Capturing, taking, and killing birds from this area.
- 3. Removing or taking of rocks, sand, and coral rubble.
- 4. Dumping any type of waste in the area.
- 5. Any action of aquaculture/ mariculture.
- 6. Introducing any non native species
- 7. Dredging and reclamation.
- 8. Lightpooling (using any kind of lights to attract fish).

#### Actions allowed with special permission under an established guideline:

1. Tourists visiting the MPA<sup>5</sup>

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<sup>&</sup>lt;sup>5</sup> There is currently no visitation system in place, this wording originates from the Farikede Announcement. It will be up to Management Authorities to decide if a visitation permit system is pursued in the future.

#### 2. Research

Any research in the MPA must be approved prior to commencement by the ERA and the relevant permits provided. Guidance on the application process can be viewed on the <u>OneGov website</u>. If seeking to use drones in the MPA, permission from the Civil Aviation Authority and Maldives National Defence Force is required due to the MPA's proximity to Fuvahmulah airport.

#### **Guidelines for wildlife interactions:**

Under the Protected Species Regulation several guidelines for snorkel and dive interactions with protected species apply to the MPA to minimise human disturbance. Guidelines exist for:

- Whale sharks
- Manta rays
- Sea turtles

Voluntary guidelines for shark diving interactions have also been developed in collaboration with dive operators in Fuvahmulah alongside government. When diving in the MPA all divers should adhere to these <u>guidelines</u> which include specific codes of conduct for diving with thresher sharks and general guidance for diving with predatory sharks.

# 9. Vision

The vision for Farikede Area is for:

**Theme** 

A thriving ecosystem within Farikede Area that supports sustainable activities and advances understanding and appreciation of its unique biodiversity.

# 10. Management Principles

Management of Farikede Area will be guided by the national Protected and Conserved Areas (PCA) management principles (Table 3). The seven principles will aid decision-making, support sustainable development and collaboration between the management authorities and local communities and promote the incorporation of climate change considerations into management. To learn more about these principles please refer to <a href="Maldives National Framework for Management of Protected and Conserved Areas 2024-2029">Maldives National Framework for Management of Protected and Conserved Areas 2024-2029</a>.

Table 3 National management principles for protected and conserved areas in the Maldives

Management Principle

Overarching	Climate change aware management actions will consider monitoring and research to identify the predicted impacts of climate change on the values of the MPA to inform the development of adaptation strategies as part of an adaptive management framework.

Ecological	Ecosystem approach will be applied by ensuring management considers the ecological, social, cultural and economic values of the MPA, balancing the use of natural resources to maintain a functioning ecosystem as well as supporting the local community.
	Adaptive and evidence-based – management decisions will use best available information and knowledge gaps will be addressed through monitoring. Every 5 years a PAME evaluation will be undertaken to assess progress over time and to adapt management accordingly.
	Precautionary principle – where evidence is inconclusive the management authority will make best efforts to fill evidence gaps wiles also applying practical and proportionate precaution.
Social	Sustainable development – any activities within Farikede Area must have minimal impact on the marine environment and associated biodiversity, and must bring positive social, cultural and economic benefits.
	Collaborative – The management authority will work openly with stakeholders to foster a collaborative approach to the management of Farikede Area.
	Equitable – Inclusion and the equitable distribution of knowledge and resources is imperative to the management of Farikede Area. Effective communication with all stakeholders and the local community including women, youth and disadvantaged groups will support equal voices and opportunities during any decision-making processes.

# 11. Management Objectives and Actions

The management objectives and the actions described in this section provide an overview of the activities that will be undertaken over the next ten years to achieve the long-term vision of Farikede Area.

The objectives have been developed based on the key purposes for the establishment of the MPA as outlined in the announcement and stakeholder input to ensure that they are relevant to the MPA and the local community. By the end of this Conservation Action Plan in 2036, all objectives should have been achieved. Details on how the objectives can be achieved are set out in the action plan in section 11.2.

# 11.1. Objectives

1. The abundance and diversity of endangered and threatened species, including but not limited to shark and ray species that are known to regularly use the MPA is maintained at current levels or has increased.

- 2. The status of the coral reef is maintained at current levels or improved, to continue the supporting role it provides to the shark populations of the MPA and the local community.
- 3. Social and economic benefits provided by the MPA are reviewed, and recommendations around sustainable management will have been identified.
- 4. The appropriate strategies and resource requirements have been identified, and will be in the process of being implemented, to support the equitable, inclusive and effective governance and management of the MPA.
- 5. Understanding of the MPA is improved at a local and national scale to support engagement with the local community and visitors to Maldives.

## 11.2. Management Actions

The following tables outline management actions that are required to deliver each management objective and mitigate threats to the MPA (Section 6.1). Actions have been prioritised (high, medium, low) and given completion targets and outcome indicators to measure success. FCC are responsible for overseeing and co-ordinating efforts to achieve each action, with support from partner organisations as outlined in Table 2, Section 7.

Actions are based on the outputs of a management effectiveness evaluation using the METT-4 that the OCPP undertook with MoTE and Fuvahmulah Nature Park staff and stakeholder input through online surveys, meetings and workshops in 2024 and 2025.

Table 4 Management actions to achieve objective one for Farikede Area

Objective 1. The abundance and diversity of endangered and threatened species, including but not limited to shark and ray species that are known to regularly use the MPA is maintained at current levels or has increased.			
Management Action	Priority	Year	
<b>1.1.</b> Continue the phased implementation of shark diving codes of conduct.	High	1	
<b>1.2.</b> Undertake a carrying capacity study to understand sustainable dive limits for the MPA and incorporate into management.	High	1-2	
<b>1.3.</b> Improve awareness of vessel speed transiting the MPA and the potential impacts of speeding on marine life.	Medium	2-3	
<b>1.4.</b> Develop and implement a formalised citizen science sightings monitoring programme to collect absence/presence data for sharks, rays and other key threatened species in the MPA. Ensuring a collaborative approach with stakeholders and external scientists.	High	3-10	
<b>1.5.</b> Ensure that all key findings from ecological monitoring activities is utilised, reported and used to inform adaptive management.	High	3-10	
<b>1.6.</b> Develop and implement a permit system to allow data to be collected on the number of visitors using the MPA per month.	High	3	

<b>1.7.</b> Investigate potential shark bycatch rates within the MPA and raise awareness of safe release best practices.	High	4
<b>1.8.</b> Use local knowledge via interviews with fishers and the dive community to undertake proxy assessments of historical population numbers of threatened shark species in the MPA.		4
<b>1.9.</b> Investigate opportunities with NGOs, dive operators and researchers to establish population studies focused on key species including whale sharks and oceanic manta rays and explore suitable methodologies to build understanding of population dynamics and spatial use.	Medium	7
Indicators of Success		gets
<ul> <li>Population sizes of key shark and ray species that regularly use the MPA</li> <li>Level of understanding of key shark and ray species in the MPA</li> </ul>	Maintain or increase     Increase	

## Table 5 Management actions to achieve objective two for Farikede Area

Objective 2. The status of the coral reef is maintained at current levels or improved, to continue the supporting role it provides to the shark populations of the MPA and the local community

Management Action	Priority	Year
<b>2.1.</b> Raise awareness of sand extraction guidelines amongst the local community and continue ongoing enforcement efforts.	Medium	1
<b>2.2.</b> Raise awareness of the prohibition on anchoring within the MPA and the impacts anchoring has on corals with vessel users	High	2
2.3. Undertake a baseline condition assessment of Farikede focusing on the entire marine ecosystem, using standardised methods comparable to the rapid assessment undertaken in 2017/18 by IUCN and the Ministry of Environment.	High	2-3
<b>2.4.</b> Raise awareness of responsible waste management amongst Liveaboards and the local community including the effects of littering on the marine life of the MPA	Low	2
2.5. Review MPA boundary using species and habitat monitoring data to confirm whether it is suitable to meet its objectives	Medium	2-5
<b>2.6.</b> Ensure that all data collected from monitoring activities is utilised, reported and used to inform adaptive management.	High	3-10
<b>2.7.</b> Undertake annual monitoring of the coral reef using a standardised method in collaboration with local dive operators and NGOs.	High	4-10
2.8. Install SmartBuoys in the MPA to collect environmental data on oceanographic conditions e.g., sea temperatures	High	4-5
<b>2.9.</b> Undertake a reef resilience study of the coral reef to gain a greater understanding of the reef's resilience or vulnerability to climate change.	Medium	8-10
Indicators of Success	Target	s

Level of understanding of the coral reef	•	Increase
<ul> <li>Coral reef condition: extent and diversity</li> </ul>	•	Maintain or
		increase

#### Table 6 Management actions to achieve objective three for Farikede Area

Objective 3. Social and economic benefits provided by the MPA are reviewed, and recommendations around sustainable management will have been identified.

recommendations around sustainable management will have been identified.				
Management Action	Priority	Year		
<b>3.1.</b> Implement a socio-economic study to assess community benefits from the MPA, including the direct annual economic value to the community and wider benefits, identifying opportunities to further benefits. Repeat survey every three years to assess change over time.	High	3, 6, 9		
<b>3.2.</b> Develop and implement basic fisheries assessment protocols to collect data on fishing effort in the MPA to help understand and support the socio-economic benefits of the MPA.	High	3-10		
<b>3.3.</b> Undertake a review of current diving at the MPA and develop and implement recommendations to improve dive safety.	Medium	4		
<b>3.4.</b> Assess visitor satisfaction through implementation of long-term surveys with outgoing visitors to identify gaps in visitor needs. Explore options for improving the quality of visitor services based on survey results.	Medium	4-10		
<b>3.5.</b> Explore options for income diversification based on the results of the socio-economic study (action 3.1).	High	5-10		
<b>3.6.</b> Trial shark deterrents to be used when fishing in the MPA to reduce the impact of shark depredation on fish catch, and reduce the risk of shark bycatch.	Medium	6-7		
Indicators of Success		rgets		
<ul> <li>Understanding of socio-economic benefits provided by the MPA to the local community</li> <li>Level of visitor satisfaction</li> </ul>	• Increase			

#### Table 7 Management actions to achieve objective four for Farikede Area

Objective 4. The appropriate strategies and resource requirements have been identified, and will be in the process of being implemented, to support the equitable, inclusive and effective governance and management of Farikede Area.

Management Action	Priority	Year
4.1. Update legal framework needed for the Farikede Area	High	1
4.2. Allocate staff to implement the management of the MPA	High	1

Objective 4. The appropriate strategies and resource requirements have been identified, and will be in the process of being implemented, to support the equitable, inclusive and effective governance and management of Farikede Area.

oncourt governance and management of Famous Area.				
Management Action	Priority	Year		
<b>4.3.</b> Develop an annual budget and secure funding to deliver MPA management	High	1-10		
<b>4.4.</b> Develop an annual operational plan to effectively implement the MPA management plan actions	High	1-10		
<b>4.5.</b> Once staff in place undertake regular staff training needs assessment and facilitate training as required	High	1-10		
<b>4.6.</b> Procure essential equipment to undertake management e.g., boat, health & safety seagoing equipment	High	2-3		
<b>4.7.</b> Explore sustainable financing mechanisms to support the implementation of management and monitoring in the future	High	2-4		
<b>4.8.</b> Ensure management actions are regularly reviewed by the Fuvahmulah Biosphere Reserve Advisory Committee to make sure they are fit for purpose	High	2-10		
<b>4.9.</b> Develop and implement a system to support the enforcement and compliance of MPA regulations	High	3-10		
<b>4.10.</b> Provide training to local law enforcement officers on the legislation and regulations of the MPA. Undertake refresher training as required.	High	3		
<b>4.11.</b> Undertake regular reviews of the MPA management plan (every 5 years using the METT-4) to support adaptive management and ensure that objectives are being met.	High	5,10		
<b>4.12.</b> Develop a central data depository to host all data linked to the MPA which is accessible to all.	Medium	5		
<b>4.13.</b> Explore use of remote technology to support compliance and enforcement	Medium	8		
Indicators of Success		Targets		
<ul> <li>Adoption and implementation of Farikede Conservation Action Plan</li> <li>Capacity of Management Authority</li> </ul>		rease		

#### Table 8 Management actions to achieve objective five for Farikede Area

Objective 5. Understanding of the MPA is improved at a local and national scale to support engagement; amongst the local community and visitors to Maldives

Support origination, difference foods community and violeto to malaryou			
Management Action	Priority	Year	
<b>5.1.</b> Hold regular consultation sessions with the local community to update them on MPA management actions and monitoring outcomes.	High	1-10	
<b>5.2.</b> Raise profile of scientific research undertaken at Farikede through attending scientific forums on the international platform and explore options to host conference in Fuvahmulah	High	1-10	

Objective 5. Understanding of the MPA is improved at a local and national scale to support engagement; amongst the local community and visitors to Maldives			
Management Action	Priority	Year	
<b>5.3.</b> Undertake a survey to establish a baseline of the local communities' awareness of Farikede Area and repeat survey every 4 years to measure any changes in awareness.	High	2, 6, 10	
<b>5.4.</b> Add information about the MPA to the Visit Fuvahmulah website and link to the national PCA website to improve accessibility and awareness of information related to the MPA	Medium	2	
<b>5.5.</b> Undertake local campaign to raise awareness of Fuvahmulah's Biosphere Reserve status and how Farikede is a core zone of the Biosphere Reserve (e.g., what does this mean for the local community and what are its benefits)	High	3	
<b>5.6.</b> Provide local sea users with a pocket-sized map to use at sea which provides information on the MPA boundary and rules.	Medium	4	
<b>5.7.</b> Develop and establish an information board at an appropriate location near the MPA to provide information about the site.	High	5	
<b>5.8.</b> Develop a business plan to support the development of a research centre based on Fuvahmulah that will provide educational outreach, visitor facilities and research opportunities.	Medium	5-6	
<b>5.9.</b> Collaborate with users of the MPA to raise awareness of the marine environment amongst the local community and visitors e.g., work with dive operators to include information about Farikede Area on their websites; hold MPA focused educational seminar with school children etc		5-10	
<b>5.10.</b> Build on existing programmes to integrate additional shark education and general marine environmental science related to the MPA into the local curriculum.		8-10	
<b>5.11.</b> Explore the viability and benefits of hosting a Shark festival to raise awareness of the importance of shark species at the MPA and across Fuvahmulah	Low	10	
Indicators of Success		Targets	
<ul> <li>Level of awareness of the MPA and Biosphere Reserve status amongst the local community and visitors</li> <li>Level of stakeholder engagement and satisfaction with management processes</li> </ul>		ease	

# 12. Compliance and Enforcement

# 12.1. Enforcement Powers and Responsibilities

The Protected Areas Regulation, provides the legal framework for Farikede MPA and outlines the following enforcement powers and responsibilities in relation to compliance within the MPA:

**Fuvahmulah City Council** – Raise awareness of rules and regulations, monitor the area (including visitor and resource usage) and record incidents of non-compliance. Report incidents that require escalation to the ERA.

**Environmental Regulation Authority (ERA)** – The ERA have powers conferred to them under the Protected Areas Regulation (Regulation No: 2018/R-78) to enforce/implement. ERA staff are not present on the ground in Fuvahmulah, therefore breaches in compliance are reported to the ERA to undertake further investigation and any compliance actions if needed.

**Ministry of Fisheries and Ocean Resources-** The Compliance Department of the Ministry of Fisheries and Ocean Resources can act on any non-compliance with the Fisheries Act and its accompanying regulations.

**Maldives Police** – The police have powers conferred to them under the Maldives Police Act No.34/2020. This allows them to implement environmental laws and regulations and investigate environmental crimes.

The national legislative framework enables the introduction of site-specific management measures, such as permit systems, enhanced enforcement, or user fees, under a formal Management Regulation to address threats to the MPA. If deemed necessary, such regulations could be developed and applied to Farikede.

## 12.2. Enforcement Approach

An intelligence-led risk-based enforcement approach will be adopted to ensure that the available resource is used as efficiently and as effectively as possible. Enforcement tools that are available include:

- o Education and outreach
- Verbal and written warnings
- Corrective action Fines (including a transparent, proportionate and consistent approach to the issue of fines), bans, confiscation etc

## 12.3. Reporting Non-Compliance and Complaints

Members of the public can report incidents of non-compliance of MPA rules and regulations to the Fuvahmulah Nature Park Hotline +960 7590059 or the ERA hotline +960 7980379 / office +960 333 5949

Complaints related to the MPA can be submitted via Fuvahmulah City Council's online Citizen Portal which can be accessed via the following address: <a href="https://afuncity.mv/">https://afuncity.mv/</a>. Alternatively, complaints can also be submitted via the Council's hotline +960 6860001.

# 13. Monitoring and Evaluation

# **13.1.** Monitoring

Monitoring is required to track the status and condition of the MPA's key values over time, and to help assess whether the management objectives are being met. As the MPA is a core area of Fuvahmulah UNESCO Biosphere Reserve, monitoring will also inform UNESCO's periodic reviews and contribute to wider national reporting on the status of Maldives' PCA network.

Several management actions listed in section 11.2 focus on the development of research and monitoring activities to collect data on the MPA's values. Currently, no active, regular monitoring of the reef takes place. A rapid assessment using a roaming methodology was undertaken in 2017/18 at 'Thresher Point', the limestone plateau within the MPA, but this provided limited data on the status of the coral reef across the whole site (Dryden et al., 2020). The initial step for any monitoring programme is to conduct an ecological baseline assessment. This data collection exercise provides the initial data upon which the status of the various ecological features is assessed. Subsequent monitoring (generally seasonally or annually depending on the species or habitat) is then conducted to acquire data from which any change in status, and thus the effectiveness of any implemented management actions, can be evaluated.

There are multiple active monitoring and research programmes that collect sightings and behavioural data for several species present in the MPA. Some local dive operators manage their own sightings databases to record species encountered during dive trips. Presence data for whale shark and oceanic manta ray encounters is also submitted to national research and monitoring projects run by Maldives Whale Shark Research Programme (MWSRP) and the Maldives Manta Conservation Programme, Manta Trust. Both organisations undertake annual field trips to Fuvahmulah, of 4-6 weeks duration, to survey oceanic manta ray and whale shark populations during peak season, including within Farikede Area. This data is not currently used to inform the management of the MPA but going forward should be utilised to help measure the 'Indicators of Success' associated with each objective in section 11.2.

Monitoring of the MPA should be undertaken collaboratively between:

**Fuvahmulah City Council/ Biosphere Reserve** who will oversee the coordination of monitoring efforts, lead day-to-day monitoring tasks, and monitoring efforts related to social and economic aspects.

ERA and MoTE who will support ecological surveys of the reef

**Local Dive Operators and NGOs** based on voluntary participation can support ecological surveys and sightings data collection for threatened shark and ray species.

'Appendix 1 – Basic Monitoring Plan' provides an overview of monitoring methods, metrics and the associated outcome indicators that they support.

## 13.2. Research

In addition to monitoring programmes that help to track progress towards achieving the management objectives of Farikede Area, focused research projects allow for a greater depth of understanding on the values of the MPA and how they interact and connect with the wider marine environment. At the time of writing the following organisations were actively undertaking research in Farikede Area:

- Fuvahmulah Dive School
- Maldives Manta Conservation Programme
- Maldives Whale Shark Research Programme (MWSRP)
- Miyaru Shark Programme
- Oceanic Nomad Divers
- Pelagic Divers Fuvahmulah

Table 9 presents identified research needs and ideas to address knowledge gaps for the values of the MPA. Priority topics are included as management actions in section 11.2. Future research projects should refer to this table and review ongoing research to help inform research priorities and avoid duplication of effort. All research within the MPA requires a permit from the ERA before it can commence (refer to section 8).

Table 9 Research ideas to address gaps in understanding to support the objectives of Farikede Area

Theme	Research topics
Coral reef ecosystem	Collect environmental data on oceanographic conditions using SmartBuoys (action 2.8)
	Undertake comprehensive mapping of the MPA, including detailed bathymetry
	Undertake a reef resilience study of the coral reef to gain a greater understanding of the reef's resilience or vulnerability to climate change (action 2.9)
Threatened sharks & rays	Investigate potential shark bycatch rates within the MPA and raise awareness of safe release best practices (action 1.7)
	Use local knowledge via interviews with fishers and the dive community to undertake proxy assessments of historical population numbers of threatened shark species in the MPA (action 1.8)
	Population studies for key species including whale shark and oceanic manta ray to build understanding of population dynamics and spatial use (action 1.9)
	Build upon Zerr, 2024 research through multiyear telemetry studies to understand migratory behaviours of reef and pelagic shark species, identify potential mechanisms behind aggregations and peak sightings and identify additional species that may not have been present during the period analysed.
Socioeconomic	Undertake a carrying capacity study to understand sustainable dive limits for the MPA and incorporate into management (1.2)
	Implement a socio-economic study to assess community benefits from the MPA and identify opportunities to further benefits (action 3.1)

Theme	Research topics
	Trial shark deterrents to be used when fishing in the MPA to reduce the impact of shark_predation on fish catch and reduce the risk of shark bycatch (action 3.6)

# 13.3. Management Effectiveness Evaluation

Evaluation of the Farikede Area CAP will determine whether management actions are achieving the desired outcomes, addressing priority management needs, and meeting the objectives of the MPA. Annual reviews, conducted by Fuvahmulah Biosphere Reserve staff in collaboration with key stakeholders, will determine whether activities have occurred as planned and will identify any issues affecting implementation and resource allocation.

The CAP will undergo a comprehensive Protected Area Management Effectiveness (PAME) review every five years using the Management Effectiveness Tracking Tool (METT) to evaluate management effectiveness. The evaluation will be completed through a consultation process with stakeholders and other interested parties. It will consider new evidence from scientific research and long-term monitoring and will assess the extent to which management actions have achieved the MPA objectives over the five-year period. The evaluation will review management actions completed, revise strategies and activities accordingly and, as appropriate, add new strategies and activities based on priority management needs and any new threats identified.

# 13.4. IUCN Green Listing Indicators Assessment

The CAP will undergo a comprehensive assessment of IUCN Green listing indicators every five years, together with the Management Effectiveness Tracking Tool (METT) to evaluate the site readiness for IUCN Green listing. The evaluation will be completed through a consultation process with stakeholders and other interested parties. It will consider new evidence from scientific research and long-term monitoring and will assess the extent to which management actions have achieved the MPA objectives over the five-year period. The evaluation will review management actions completed, revise strategies and activities accordingly and, as appropriate, add new strategies and activities based on priority management needs and any new threats identified.

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# 14.1. Appendix 1 – Basic Monitoring Plan

Table 10 Summary of monitoring methods and metrics to collect to measure progress towards reaching targets and indicators of success associated to the objectives of Farikede Area.

Objective 1. The abundance and diversity of endang to regularly use the MPA is maintained at current lev			oot limited to shark and ray species that are known
Indicators of Success	Target	Method	Metrics
<ul> <li>Abundance and diversity of key shark and ray species that regularly use the MPA</li> <li>Level of understanding of key shark and ray species in the MPA</li> </ul>	Maintain/ increase Increase	Photo id of encounters  Observation from patrols  Online permit system	<ul> <li>No. of individuals (adult/juvenile/male/female)</li> <li>No. of observed behaviour types e.g., courtship, feeding, travelling</li> <li>No. observations of human pressures e.g., vessels using the MPA, anchoring infractions</li> </ul>
Objective 2. The status of the coral reef is maintaine populations of the MPA and the local community	d at current l	evels or improved, to continue th	ne supporting role it provides to the shark
Indicators of Success	Target	Method	Metrics
<ul> <li>Level of understanding of the coral reef</li> <li>Coral reef condition: extent and diversity</li> </ul>	Increase  Maintain/ increase	National coral reef monitoring framework:  Marine Seabed Sedentary Life Forms Method	<ul><li>Coral diversity</li><li>% cover</li><li>Health /Coral bleaching</li></ul>
Objective 3. Social and economic benefits provided identified.	by the MPA a	re reviewed, and recommendation	ons around sustainable management will have been
Indicators of Success	Target	Method	Metrics
<ul> <li>Understanding of socio-economic benefits provided by the MPA to the local community</li> <li>Level of awareness of visitor satisfaction</li> </ul>	Increase	Questionnaire and socio- economic study  Online feedback form	<ul> <li>No. of studies/reports completed</li> <li>% of visitors satisfied with the service and quality of their experience</li> </ul>
Objective 5. Understanding of the MPA is improved a Maldives	at a local and	national scale to support engag	ement; amongst the local community and visitors to
Indicators of Success	Target	Method	Metrics
<ul> <li>Level of awareness of the MPA and Biosphere Reserve status amongst the local community and visitors</li> <li>Level of stakeholder engagement and satisfaction with management processes</li> </ul>	Increase	Questionnaire Summary statistic collation	<ul> <li>% aware of the MPA values, vision, boundary and regulations</li> <li>% with a high level of satisfaction with stakeholder engagement</li> <li>% with a high level of satisfaction with MPA management</li> </ul>