



The Maldives National Red List of Threatened Species

Scope: National

Language: English

***Lepidochelys
olivacea***

Olive Ridley sea turtle

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Maldives National Red List Assessment: Olive Ridley Sea Turtle

A. Background Information

1. Assessment Information:

Assessor Name	Martin Stelfox and Stephanie Köhnk
Date of Assessment	26.01.2022
Contributors	Shihany Habeeb, James Tallant
Reviewers	Khadeeja Ali, Janice Chanson

2. Taxonomic Information:

Scientific Name	<i>Lepidochelys olivacea</i> (Eschholtz, 1829)		
Common Name (English)	Olive ridley sea turtle		
Common Name (Dhivehi)	Vaavoshi Velaa, ވާވޯޝި ވެލާ		
	Order	Testudines	
Taxonomy	Sub-order	Cryptodira	
	Family	Cheloniidae	
Taxonomic Notes	Synonym(s): <i>Chelonia olivacea</i> Eschholtz, 1829		

3. Geographic Range:

3.1 Summary of Global Distribution

This species has a global distribution in warm-temperate and tropical regions of the Atlantic, Pacific and Indian Oceans. They are known to migrate thousands of kilometers between feeding and breeding sites

3.2 Countries of Occurrence

Native: Angola; Antigua and Barbuda; Australia; Bangladesh; Benin; Brazil; Brunei Darussalam; Cabo Verde; Cambodia; Cameroon; Chile; Colombia; Congo; Costa Rica; Cuba; Côte d'Ivoire; Dominican Republic; Ecuador; El Salvador; Equatorial Guinea (Bioko); Eritrea; French Guiana; Gabon; Gambia; Ghana; Guadeloupe; Guatemala; Guinea; Guinea-Bissau; Guyana; Honduras; India (Nicobar Is., Andaman Is.); Indonesia; Iran, Islamic Republic of; Jamaica; Japan; Kenya; Liberia; Madagascar; Malaysia; Maldives; Martinique; Mauritania; Mexico; Micronesia, Federated States of; Morocco; Mozambique; Myanmar; Namibia; Nicaragua; Nigeria; Oman; Pakistan; Panama; Papua New Guinea; Peru; Philippines; Puerto Rico; Sao Tome and Principe (São Tomé); Senegal; Sierra Leone; Somalia; South Africa; Sri Lanka; Sudan; Suriname; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Togo; Trinidad and Tobago; United States (Hawaiian Is.); Uruguay; Venezuela, Bolivarian Republic of (Venezuela (mainland), Venezuelan Antilles); Viet Nam; Yemen

3.3 National Distribution

It is not known whether this species forages or is only a vagrant within the Maldives. Most encounters with this species are of individuals found entangled in abandoned, lost or discarded fishing gear nationwide. Genetic analysis of samples from entangled turtles show that they mostly belong to Sri Lankan and Eastern Indian breeding stocks (Stelfox et al. 2020).

Single nesting events have been recorded in Haa Dhaalu, Kaafu and Raa atolls (Ahmed et al. 2020). The origin of the respective nesting females and their relation to other subpopulations in the North Western Indian Ocean is currently unknown.

4. Population:

4.1 Summary

Lepidochelys olivacea in the Maldives, mostly belong to the Sri Lankan and East Coast of India subpopulation (Stelfox et al. 2020). There is no evidence to suggest the Maldives has its own distinct subpopulation.

4.2 Population size

The current population size in the country is unknown. There are occasional sightings reported of free-swimming individuals, but most often olive ridleys are found entangled in abandoned, lost or discarded fishing gear (ghost nets) and other marine debris (Stelfox et al. 2019). Between 2013-2020 a total of 861 individuals have been reported entangled in ghost nets (Olive Ridley Project 2021).

4.3 Population trend

Unknown

4.4 Continuing decline in mature individuals?

Unknown

4.5 Extreme fluctuations?

Unknown

4.6 Severely fragmented?

No - migratory species (Shanker et al. 2004, Jensen et al. 2013)

5. Habitat and Ecology:

5.1 Summary

Largely found in deeper waters in the Maldives and occasionally in shallow coral reefs. Nesting has been confirmed on very rare occasions on sandy beaches

5.2 Systems (Terrestrial/Freshwater/Marine)

9. Marine Neritic -> 9.1 Pelagic, 9.8 Coral Reef, 9.9 Seagrass (Submerged); 12. Marine intertidal -> 12.2 Sand Shoreline and/or Beaches, Sand Bars, Spits, etc.; 13. Marine Coastal/Supratidal -> 13.3. Sand Dunes

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.1. Pelagic	Unknown	Suitable	Unknown
13. Marine Coastal/Supratidal -> 13.3. Marine Coastal/Supratidal - Sand Dunes	Breeding Season	Suitable	No

5.3 Continuing Decline in Area, Extent, and/or Quality of Habitat?

A continuing decline in the Quality of Habitat has been documented, especially through floating marine debris (Olive Ridley Project 2021).

5.4 A Migratory Species?

Yes (see for example Shanker et al. 2004, Jensen et al. 2013, Stelfox et al. 2020)

6. Use and Trade:

No continuous use or trade of this species has been documented in the country.

A total of six live specimens were extracted and exported from Maldives to Europe, under CITES permits (CITES 2021).

All specimens were coming from a rehabilitation facility in the Maldives

7. Threats:

Major threats include entanglement in marine debris such as ghost nets and cement bags, boat strikes, bycatch and potentially pathogens from the family Ozobranchidae (Stelfox et al. 2019, Ahmed et al. 2020, Stelfox et al. 2020, Köhnik et al. 2021).

Under the IUCN – CMP Unified Classification of direct threats 2012 (Version 3.2), the following threats are applicable to this species.

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score	Stress
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects (large scale)	ongoing	Minority (<50%)	Unknown	Unknown	Species Mortality
6. Human intrusions & disturbance -> 6.1 Recreational activities	ongoing	Minority (<50%)	Causing/could cause fluctuations	Unknown	Species Mortality or Species Disturbance
11. Climate change & severe weather -> 11.5. Other impacts	ongoing	Whole (>90%)	Causing/could cause fluctuations	Unknown	Species Disturbance

8. Conservation and Research:

Research of *L. olivacea* are somewhat limited in the Maldives, largely due to the limited observation of nesting and free-swimming individuals in the country. Most encounters are observed entangled in abandoned, lost or discarded fishing gear. Further research of these entangled individuals suggests they originate from subpopulations along the east coast of India and Sri Lanka (Stelfox et al., 2019). The Maldives has several rehabilitation centers to help address the entanglement issue, however, far more entangled individuals are found in the archipelago than can be cared for. Additional facilities nationwide will help alleviate some of the pressure of overcrowded centers and help treat and release more turtles.

Model simulations of drifting particles show that abandoned lost or discarded fishing gear drifting into the Maldives may have a broad origin during the Northeast monsoon, however the Southwest monsoon shows a more central location in the Western Indian Ocean (Stelfox et al. 2020). In both scenarios fishery/sea turtle interactions with gill net and purse seine fisheries are very likely and contribute to the mortality rates of this species. Future research that explores *L.olivacea* movements using satellite telemetry may help uncover migratory pathways, foraging habitats and fishery interactions.

8.1 Conservation actions in place

The conservation efforts for Olive Ridley Turtles can be categorized into three categories namely; (1) global efforts, (2) Regional and (3) National efforts

(1) Global Efforts: Maldives is a party to three conventions with conservation efforts and recommendations to conserve the Olive Ridley turtle. These includes CITES, Convention on the Conservation of Migratory Species of Wild Animals (CMS) and Convention on Biological Diversity (CBD).

All the turtle under the family Cheloniidae including Olive Ridley turtle is listed in the Appendix I of the CITES, which is considered as species that need highest level of protection. Hence, CITES prohibits international trade in specimens of these species except when the purpose of the import is not commercial, for instance for scientific research. In these exceptional cases, trade may take place provided it is authorized by the granting of both an import permit and an export permit (or re-export certificate).

The instrument for conservation of all sea turtles under the CMS is covered in the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtle MOU) Moreover, CMS has listed Olive Ridley turtles under the Appendix I, where parties that are a Range State to a migratory species listed in Appendix I shall endeavor to strictly protect them by: prohibiting the taking of such species, with very restricted scope for exceptions; conserving and where appropriate restoring their habitats; preventing, removing or mitigating obstacles to their migration and controlling other factors that might endanger them

(2) Regional efforts: Indian Ocean Tuna Commission - IOTC Resolution 12/04 (Resolution 12/04 On the conservation of marine turtles | IOTC_)

(3) National efforts, all species of marine turtles are protected under the Environment Protection and Preservation (4/93). According to the Turtle Protection Decree dated 4 April 2016, the following activities are prohibited:

- Capturing, harming, disturbing turtles
- Extraction of turtle eggs and harming/disturbing nests or any other habitats of turtles
- Keeping turtles as pets
- Trade of live animals and by products of turtles
- Research and rehabilitation without permit from EPA

At present there are at least 5 operational sea turtle rescue and rehabilitation centers, with 3 facilities providing veterinary services specializing in sea turtles. The different NGOs are actively engaged in sea turtle conservation awareness, especially in promoting best practices in sea turtle-human interactions.

8.2 Research in place

Yes, phylogenetics, habitat use, threats and pathogens.

8.3 Conservation needs

There is an urgent need to develop a National Management Plan for this *L. olivacea* in the country. This plan must highlight existing research and identify research gaps that need filling. Moreover, there is an urgent need to expand rehabilitation efforts nationwide to help alleviate the pressure from existing rescue facilities

8.4 Research needs

Overall limited information is available, but specific research needs have been identified for example, it must be established if *L. olivacea* is a vagrant in the Maldives or does it provide an important foraging habitat. From these common threats can be quantitatively assessed.

B. Assessment

9. CRITERION A

Criterion A

Generation Length		20 years (Abreu-Grois and Plotkin 2008)
3 Generations		60 years
Reduction in population size?		Unknown
Start Date of Reduction		Unknown
End Date of Reduction		Unknown
Rate of Reduction (%)		Unknown
	A1	Unknown
Meets Criteria Thresholds?	A2	Unknown
	A3	Unknown
	A4	Unknown
	a	Unknown
	b	Unknown
Reduction Based on Which Sub-criteria?	c	Unknown
	d	Unknown
	e	Unknown

Assessment Under Criterion A

DD

10. CRITERION B

Criterion B

AOO		Unknown
EOO		90.000 km ² (area of the EEZ Maldives)
Meets Criteria Thresholds?	B1	No
	B2	Unknown
Severely Fragmented?		No – migratory species
No. Locations		1
Threat used to calculate locations		NA
Continuing	(i) EOO	NO
Decline?	(ii) AOO	Unknown
	(iii) Habitat	Yes

	(iv) Locations / Subpopulations	NA
	(v) Mature Individuals	Unknown
	(i) EOO	Unknown
	(ii) AOO	Unknown
Extreme Fluctuations?	(iii) Locations / Subpopulations	Unknown
	(iv) Mature Individuals	Unknown

Assessment Under Criterion B **DD**

11. CRITERION C

Criterion C

	No. Mature Individuals	Unknown
	Continuing Decline in Population Size?	Unknown
	Is Rate of Decline Known?	No
	Generation Length	20 years
	Meets Thresholds for Rate of Decline?	-
C1	Rate of Decline (%)	-
	Time Period of Decline	-
	(a) (i) No. Mature Individuals in Each Subpopulation	-
C2	(a) (ii) % Mature Individuals in one Sub-population	-
	(b) Extreme Fluctuations in No. Mature Individuals?	-

Assessment Under Criterion C **DD**

12. CRITERION D

Criterion C

	No. Mature Individuals	Unknown
	Meets Criteria Thresholds?	Unknown
	AOO	-
	No. Locations	-
VUD2	Plausible Future Threat That Would Quickly Drive Taxon to CR or EX	
	Plausible Future Threat That Would Quickly Drive Taxon to VU or EN	-

Assessment Under Criterion D **DD**

13. CRITERION D

Criterion E

Has a Quantitative Analysis Been Conducted?	No
Type of Quantitative Analysis	NA
Generation Length	NA
Probability of Extinction within 100 Years	NA
Probability of Extinction within 20 Years / 5 Generations (whichever is longer)	NA
Probability of Extinction within 10 Years / 3 Generations (whichever is longer)	NA
Assessment Under Criterion E	DD

14. PRELIMINARY ASSESSMENT

	Preliminary Assessment	DD
Regional	Up-list, Down-list, or No Change?	No Change
Adjustment	Justification for Regional Adjustment	-
	Final Assessment	DD

Narrative Justification for Assessment

This species is listed as Data Deficient as there is substantial uncertainty regards whether it is a vagrant or if it regularly forages in the Maldives. It is rarely seen nesting in the Maldives, and most encounters with this species are of individuals found entangled in abandoned, lost or discarded fishing gear. More research is needed to determine if this species is native to the country before an assessment can be done, since vagrant species do not qualify for regional listings

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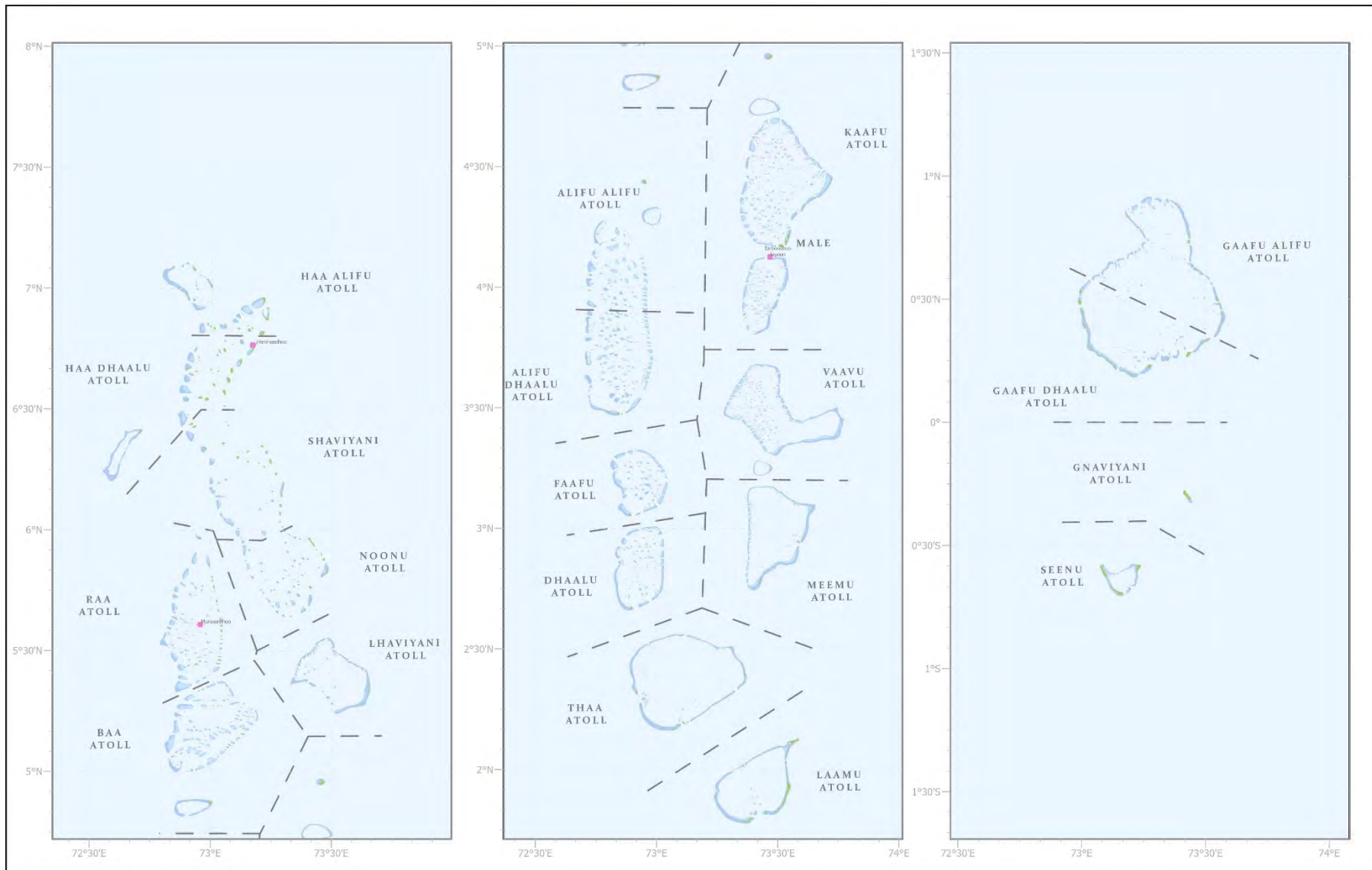
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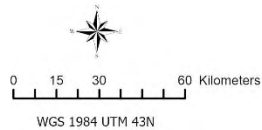
Appendix

OLIVE RIDLEY SEA TURTLES AOO MAPS



Maldives Turtle Nesting Beaches

- Islands
- Lagoons
- Reefs
- Atoll Boundaries
- Olive Ridley AOO
- Total AOO : 12 km²**

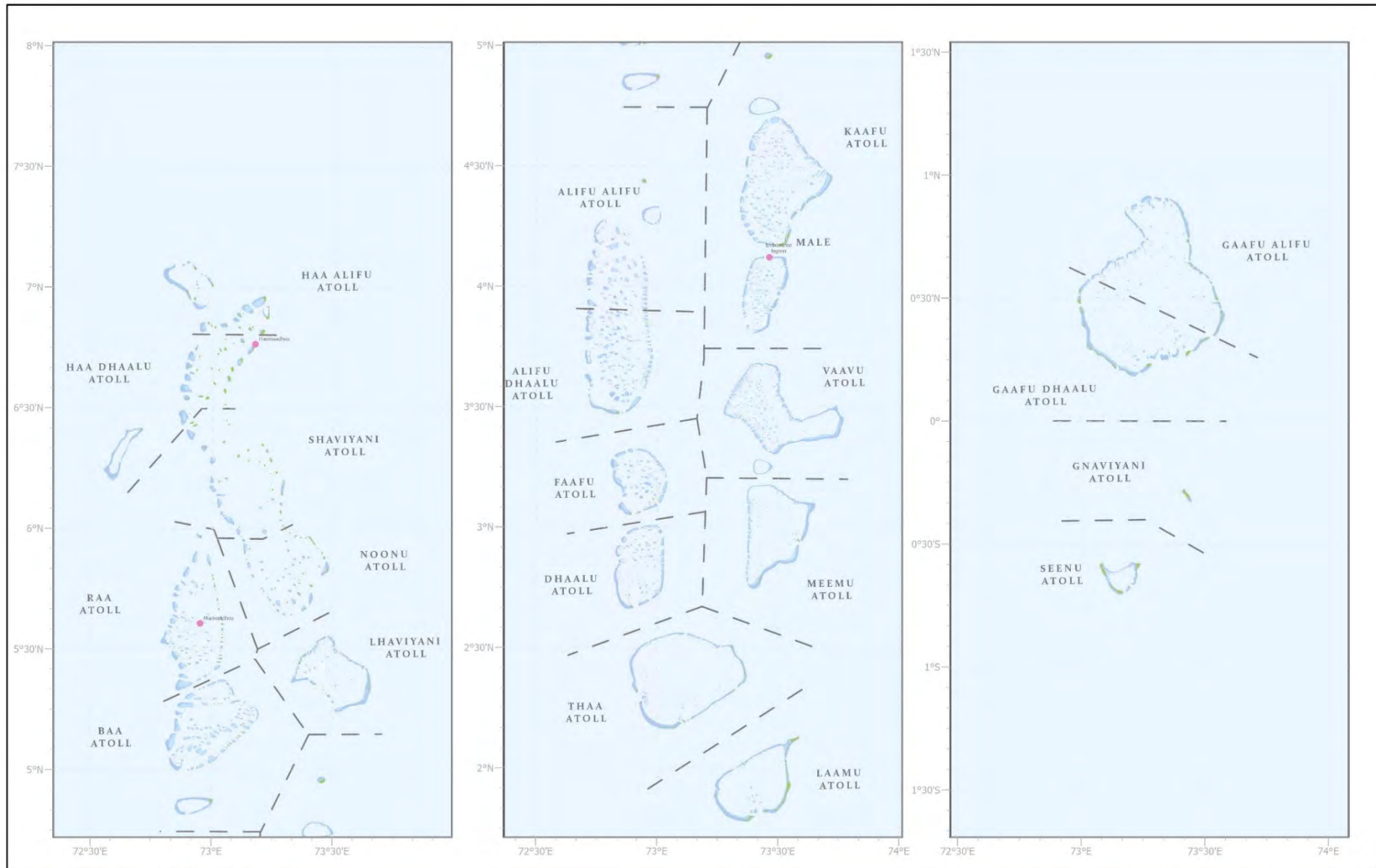


All Turtle data points are based on Ministry of Environment Climate Change and Technology, Government of Maldives datasets.
All base layers are based on UNOCHA HDX datasets.

Prepared in January 2022

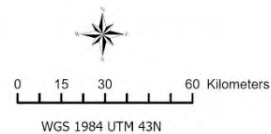
* Maps are indicative and should not be used for navigational purposes.

OLIVE RIDLEY SEA TURTLES NESTING POINTS



Maldives Turtle Nesting Beaches

- Islands
- Lagoons
- Reefs
- Atoll Boundaries
- Olive Ridley Turtle



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