



A SUMMARY OF THE LOGGERHEAD TURTLE IN THE IOSEA REGION

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A summary based on: Hamann M., Kamrowski, R.L., and Bodine, T. (2013) *Assessment of the conservation status of the loggerhead turtle in the Indian Ocean and South-east Asia*. IOSEA Marine Turtle MoU Secretariat, Bangkok http://www.ioseaturtles.org/UserFiles/File/Loggerhead_Assessment_LQ-FINAL-Sept2013.pdf

Following assessment of the leatherback turtle in the IOSEA region in 2006 and its update in 2012, we conducted a review of the loggerhead turtle in the Indian Ocean and South-east Asia region. Similar to other species of marine turtles, loggerhead turtles have regional, genetically distinct populations. There are six distinct populations/management units (MU) of loggerhead turtles within the IOSEA region: South-west Indian Ocean, North-west Indian Ocean, North-east Indian Ocean, South-east Indian Ocean, North Pacific Ocean and South Pacific Ocean.

The status of each population was previously assessed by the United States National Marine Fisheries Service (US NMFS) and as part of the Burning Issues initiative of the Marine Turtle Specialist Group (Wallace *et al.*, 2011). While there were some small differences in the results of both assessments, the key differences were (1) Wallace *et al.* (2010; 2011) considered Sri Lankan loggerheads to be a distinct MU and classed it as one of the 11 most endangered MUs in the world; and, (2) the North-west Indian Ocean population was classed as 'Endangered' by US NMFS and low risk-low threats by Wallace *et al.* (2011). The different opinions expressed in the two assessments raise important questions about the population's status and condition. A key finding of the assessment is that there is a well-recognised need for both data analysis and continued research and monitoring on this population to improve assessment accuracy.

Our assessment found that loggerhead turtles nest in 10 nations within the Indian and Pacific Ocean basins. Seven of these nations are Signatory States of the Indian

Ocean and South-East Asia Marine Turtle Memorandum of Understanding (IOSEA); one nation, Japan, is within the range of the IOSEA but is not a signatory; and, two nations, New Caledonia and Vanuatu, are outside of the IOSEA region. The assessment also noted that there are anecdotal records of loggerhead turtles nesting in Vanuatu but these require verification. Although there are also anecdotal records of loggerhead nesting from Myanmar and Bangladesh, these are now believed to have been mis-identified olive ridley sightings.

It is clear from the assessment that loggerhead turtles reside in or migrate through the waters of many IOSEA nations. Following a review of various data sources and publications we found data from tag recoveries, satellite telemetry (end points), and fisheries bycatch which combined indicate that loggerhead turtles forage within the Exclusive Economic Zones of 23 of the IOSEA Signatory States (and their Territories). In addition, loggerhead turtles have been recorded in six non-signatory range states and four non-range states. Importantly, we found that specific threats to loggerhead turtles were identified in publications and reports for 10 IOSEA Signatory States.

Overall, the assessment identified seven key knowledge gaps for the species in the IOSEA region and presented general snapshots of projects, expected outcomes and target States or agencies that could be involved in research and monitoring projects to address the gaps.

The key gaps were:

1. Species specific by-catch from coastal and oceanic fisheries.
2. An understanding of hatchling and post-hatchling dispersal.
3. Vulnerability to climate change.
4. Lack of quantifiable data on the abundance and demography of loggerhead turtles in coastal and oceanic habitats.
5. Lack of data on population identification for

- loggerhead turtles in Sri Lanka.
6. Vulnerability to marine debris.
 7. Unclear status and trend of the loggerhead turtle population in the north-west Indian Ocean.

Literature cited

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Wallace, B.P., A.D. DiMatteo, B.J. Hurley, E.M. Finkbeiner, A.B. Bolten, M.Y. Chaloupka, B.J. Hutchinson, F.A. Abreu-Grobois, D. Amorocho, K.A. Bjorndal, J. Bourjea, B.W. Bowen, R.B. Duenas, P. Casale, B.C. Choudhury, A. Costa, P.H. Dutton, A. Fallabrino, A. Girard, M. Girondot, M.H. Godfrey, M. Hamann, M. Lopez-Mendilaharsu, M.A. Marcovaldi, J.A. Mortimer, J.A. Musick, R. Nel, N.J. Pilcher, J.A. Seminoff, S. Troeng, B. Witherington & R.B. Mast. 2010. Regional management units for marine turtles: A novel framework for prioritizing conservation and research across multiple scales. *PLoS One* 5: 11. ■

A SUMMARY OF THE LEATHERBACK TURTLE RED LIST ASSESSMENTS IN THE INDIAN OCEAN

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A summary based on:

Tiwari, M., Wallace, B.P. & Girondot, M. 2013. *Dermochelys coriacea* (Northeast Indian Ocean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. www.iucnredlist.org.

Wallace, B.P., Tiwari, M. & Girondot, M. 2013. *Dermochelys coriacea*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. www.iucnredlist.org.

Wallace, B.P., Tiwari, M. & Girondot, M. 2013. *Dermochelys coriacea* (Southwest Indian Ocean subpopulation). In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. www.iucnredlist.org.

The appropriateness of global listings on the IUCN Red List of Threatened Species has long been debated by sea turtle biologists and conservationists (Groombridge & Luxmoore, 1989; Mrosovsky, 2003; Godfrey and Godley, 2008), with concerns that variations in population size and dynamics, geographic range, and subpopulation conservation status (including risk of extinction) were not adequately assessed. To address these concerns, the most recent Red List assessment for the leatherback turtle now includes both global and sub-population listings.

The global Red List status of leatherback turtles is 'Vulnerable', with fisheries by-catch posing the greatest

threat. Other threats include human consumption of eggs and meat, and coastal development; there are insufficient data to gauge the threats posed by pollution and pathogens, and climate change to all subpopulations. The Southwest Indian Ocean, Southwest Atlantic, East Pacific and West Pacific subpopulations are listed as 'Critically Endangered', Northwest Atlantic populations as 'Least Concern', and Northeast Indian Ocean and Southeast Atlantic subpopulations as 'Data Deficient' (Wallace *et al.*, 2013a).

Nearly 99% of the global leatherback population is expected to comprise turtles from the large, and increasing, Northwest Atlantic subpopulation by 2040. It is, therefore, essential that population growth of this subpopulation be sustained. However, conservation efforts to protect leatherback turtles and habitats in the Indian Ocean and other regions are equally as important in light of the significant threats to all subpopulations and the historical collapse of large Pacific subpopulations (Wallace *et al.*, 2013a).

The Southwest Indian Ocean subpopulation of leatherback turtles in KwaZulu Natal, South Africa and Mozambique is small and geographically constrained. The size estimate is 148 adult turtles, with indications of a small but continuing decline (Wallace *et al.*, 2013b). Major threats to the population include fisheries by-catch