IOSEA Marine Turtle MOU
5th Meeting of the Northern Indian Ocean Marine Turtle Task Force
online, 6-8 May 2025

Doc.9.1 & Doc.9.2
Community-Led Turtle Watch for Conservation and Ethical-Tourism*

Standardising SOPs in the Northern Indian Ocean

Shoaib Abdul Razzaque – WWF-Pakistan

In the context of WWF-Pakistan's marine conservation efforts, ethical ecotourism refers to carefully regulated, non-intrusive nature-based activities that promote public awareness, education, and community stewardship—without compromising the well-being of endangered wildlife. Specifically, turtle watch activities are designed as community-led experiences that adhere strictly to science-based protocols, such as avoiding physical contact, prohibiting artificial lighting, restricting group sizes, and minimizing human presence near nesting sites. Unlike conventional ecotourism, which can unintentionally commercialize or disturb sensitive species, this model ensures that conservation remains the primary objective, with local communities empowered as custodians of their coastal ecosystems. WWF-Pakistan does not support tourism that encourages direct interaction with or commodification of endangered marine turtles, and these guidelines serve to uphold that ethical standard.

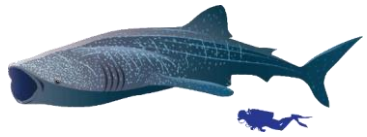
Linking Conservation dots to SDGs

SUSTAINABLE DEVELOPMENT GOALS

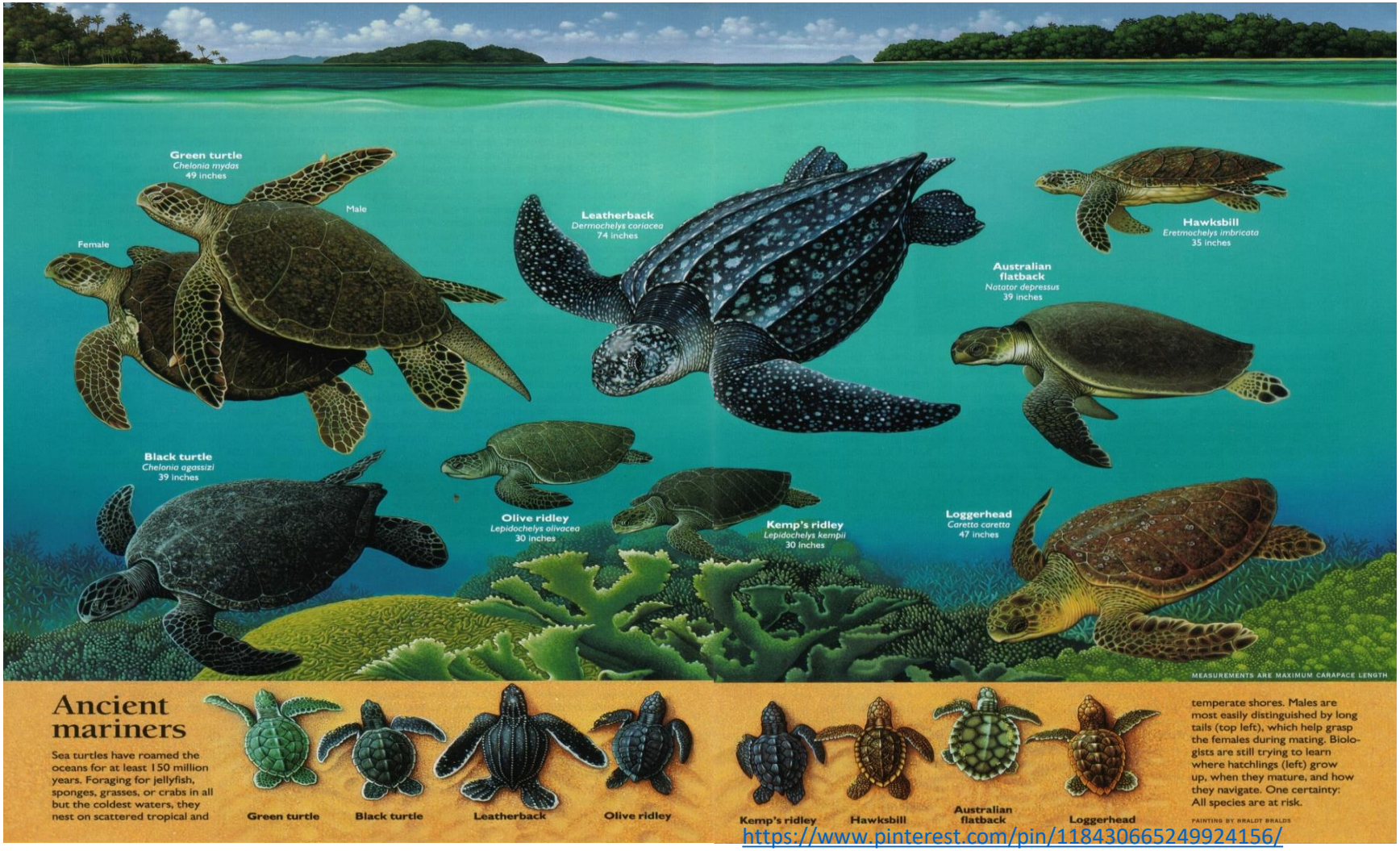
WWF

14 LIFE BELOW WATER

- **GBF Target 3** and **SDG 14.5**.- Habitat Protection – 30x30 Target for Marine Turtles
- **CMS species action plans** - Population Recovery – Marine Megafauna in the NIO
- **WWF- Habitat Loss Prevention** – Locally-Led Stewardship



Introduction



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Fisheries – bycatch

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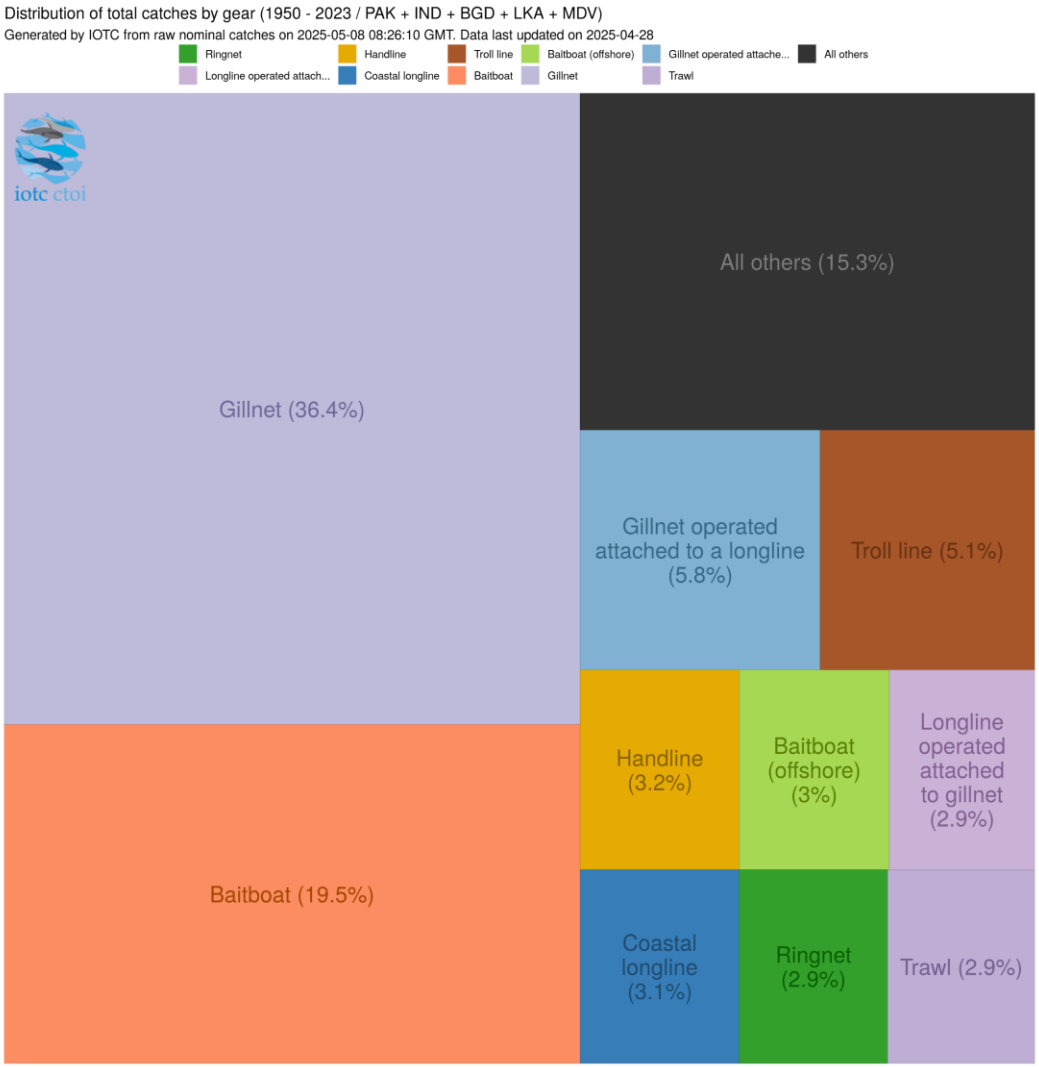
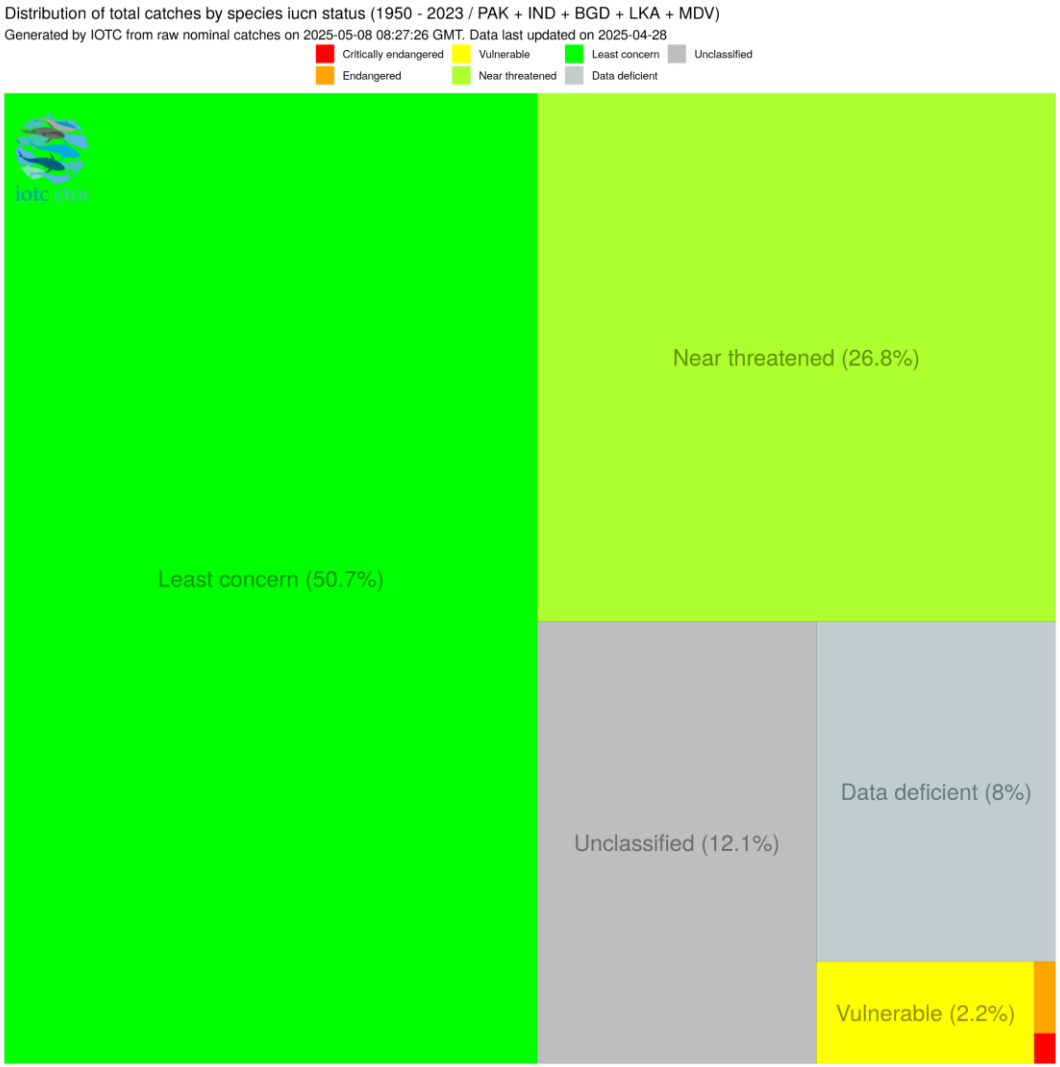


Fisheries – bycatch



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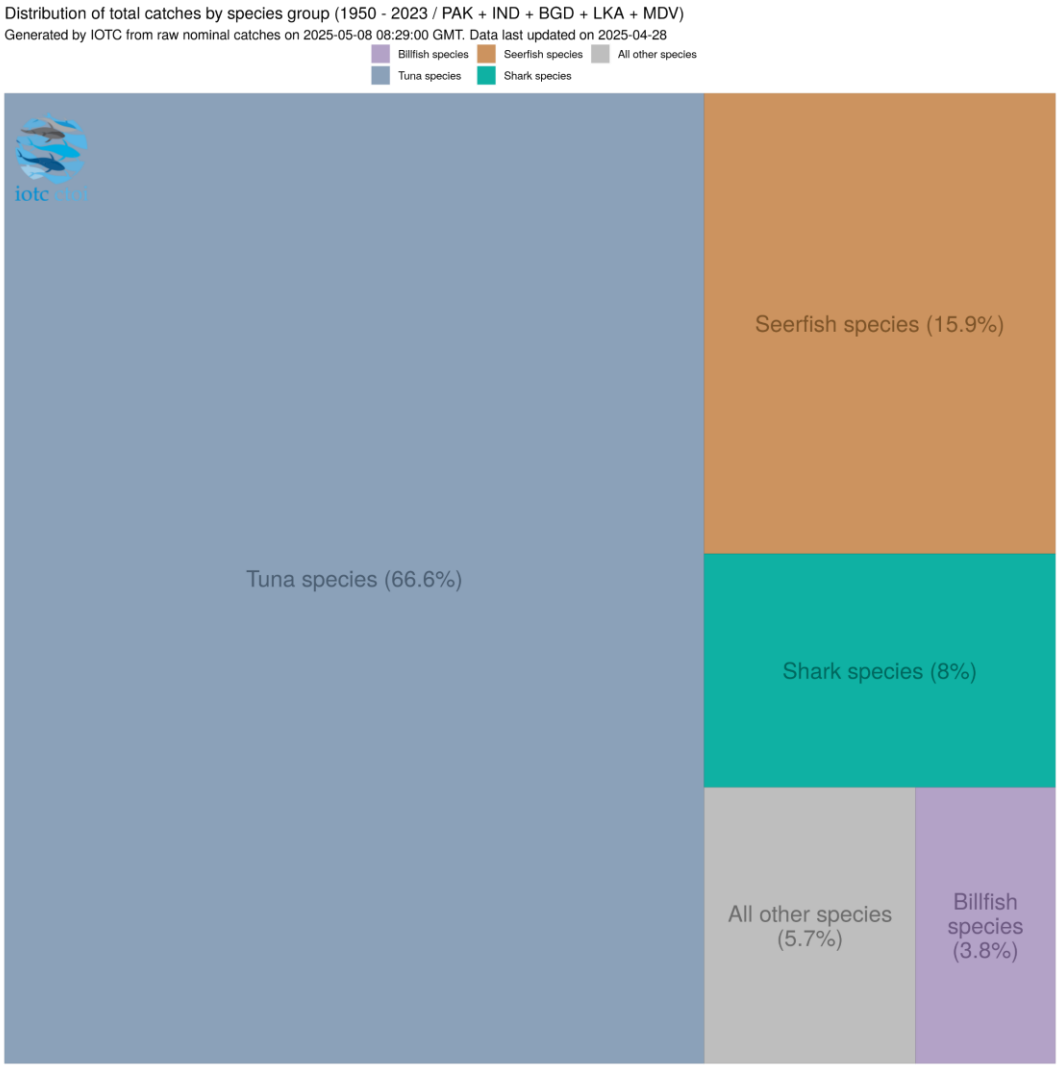
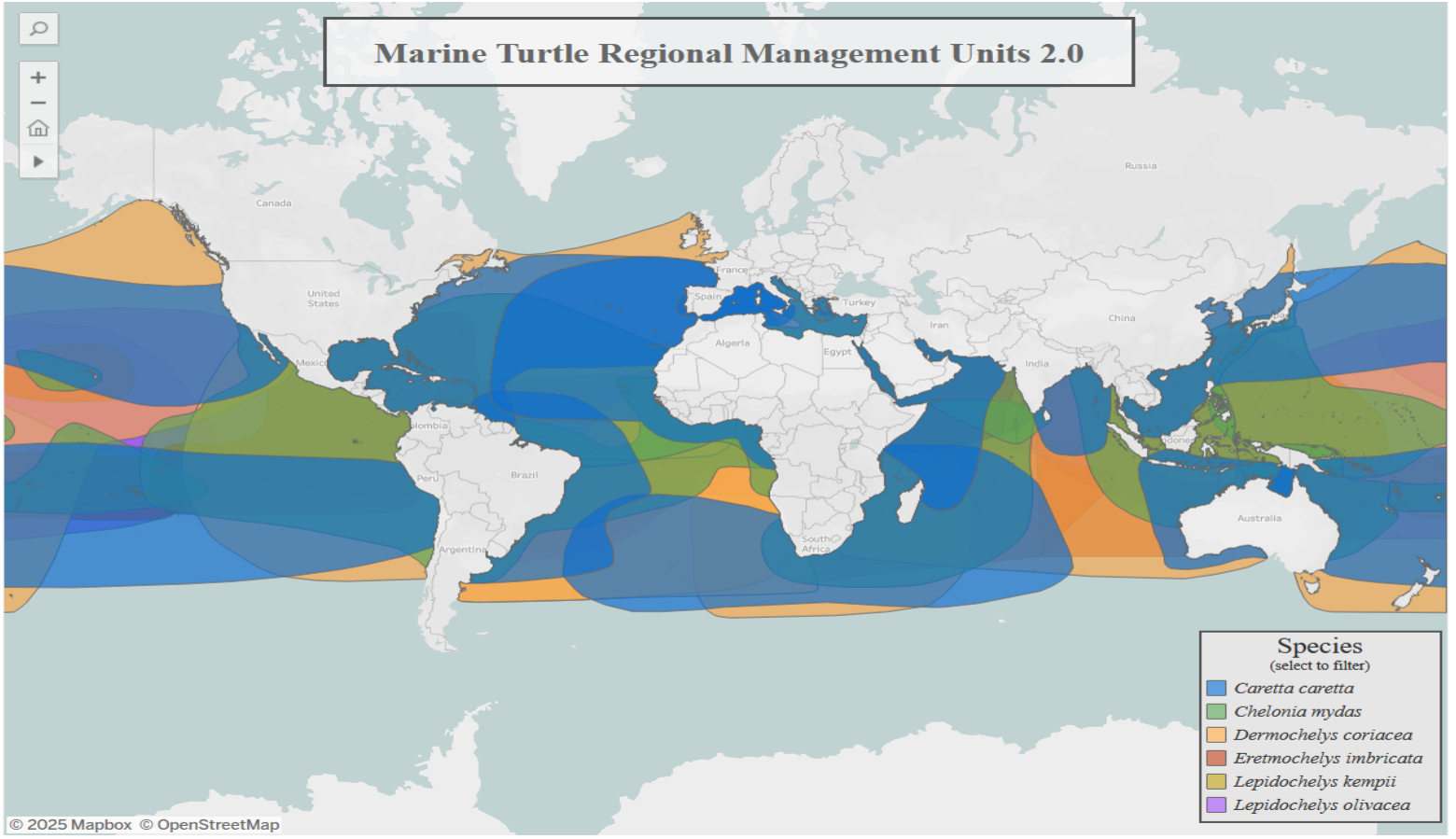


Nesting sites



These shapefiles were originally published in Wallace, et al. 2023. Marine turtle regional management units 2.0: an updated framework for conservation and research of wide-ranging megafauna species. *Endang Species Res* 52:209–223.

Species-Specific Data Collection Recommendations

Species	Genetic Data (mtDNA/nDNA)	Satellite Telemetry	Nesting Site Surveys	Juvenile Habitat Data	Tagging / Flipper Returns	Noted Gaps / Needs for More Data	Notes
Green Turtle (*Chelonia mydas*)	Extensive mtDNA; more nDNA needed	Well-used, more data needed across life stages	High priority	Understudied	Important for natal origin studies	Complex life history; needed improved natal origin data; multiple life stages need more telemetry.	RMUs reduced from 17 → 11 using NOAA DPS
Loggerhead (*Caretta caretta*)	26 stocks defined	Well-documented, gaps remain	Needed in Indian Ocean	Poorly understood in assumed RMU	Supports migration analysis	One RMU (Northeast Indian Ocean) still "assumed" due to lack of data.	1 RMU (NE Indian Ocean) remains assumed
Leatherback (*Dermochelys coriacea*)	mtDNA and some nDNA (microsatellites)	High use, crucial for oceanic species	Less nesting concentration than other species	Sparse data in remote areas	Some return data	2 of 9 genetic stocks still undefined.	2 of 9 genetic stocks still undefined
Hawksbill (*Eretmochelys imbricata*)	32 mtDNA stocks, several still undefined	Moderate, needs expansion	Critical in Indo-Pacific	Juvenile data very limited	Needed for connectivity	3 RMUs still “assumed”; major data gaps in Indian Ocean and Pacific.	3 RMUs still “assumed” due to sparse data
Olive Ridley (*Lepidochelys olivacea*)	Moderate mtDNA, consolidated RMUs	Required to study arribada/solitary overlap	Focus on mass nesting beaches	Underreported	Needed in Indo-Pacific	Some regions still have poorly defined stocks.	2 nesting types merged into 1 RMU per region
Kemp’s Ridley (*L. kempii*)	Single genetic stock	Some coverage	Small nesting range, easy to monitor	Data limited outside Gulf of Mexico	Well-established	Limited global distribution simplifies data but still needs ongoing monitoring.	Most constrained species; 1 RMU, 1 stock
Flatback (*Natator depressus*)	Managed under Australian MU system	Managed nationally	Covered under national recovery plan	Regionally defined	Within Australia	Managed under a separate national framework; not included in this update.	RMUs excluded to avoid duplication/confusion

Guidelines

- Marine turtles face threats from habitat loss, fishing bycatch, and climate change.
- Community involvement is essential to protect nesting habitats.
- These guidelines offer a culturally-sensitive, adaptable monitoring framework.

Ref: Guidelines p. 5

Objectives

- Protect turtles and their habitats.
- Promote ethical, standardized monitoring.
- Build local capacity and ownership.
- Enable informed, data-driven decisions.

Ref: Guidelines p. 5

Key Principles

- Minimize disturbance and uphold ethical standards.
- Engage inclusive community groups.
- Ensure safety for people and turtles.
- Maintain transparent, high-quality data.

Ref: Guidelines p. 6

Recommended Practices

- Night patrols post-sunset during nesting season.
- Divide beaches into sectors for monitoring.
- Use red lights; maintain distance.
- Mark nests discreetly; relocate only with expert guidance.
- Conduct community awareness & feedback sharing.

Ref: Guidelines p. 6–8

Roles and Responsibilities

- Communities: patrol, report, raise awareness.
- Field Coordinators: organize, train, ensure safety.
- NGOs/Authorities: permits, logistics, equipment.
- Researchers: monitor, analyze, co-learn with communities.

Ref: Guidelines p. 8

Optional Monitoring Tools

- Datasheets, GPS, red-filter lights, ID cards.
- Optional apps: KoboToolbox, CyberTracker, trap camera.
- Camera traps and field laptops for digital logging.

Ref: Guidelines p. 8

Ethical Guidelines

- Do not disturb, touch or obstruct turtles.
- Remain silent; use only red lights.
- No flash photography.
- Respect community customs and secure permissions.
- Share data and images only with consent.

Ref: Guidelines p. 9–10

Scaling Up

- Align with coastal management and national plans.
- Support school clubs and eco-citizen science.
- Contribute to CMS, CITES, IOSEA reporting.
- Promote replication in other coastal areas.

Ref: Guidelines p. 10

SOP: Purpose & Approach

- Ensure safe, standardized patrols aligned with best practices.
- Follow stepwise methods from pre-patrol to post-reporting.
- Aligned with IUCN, CMS-IOSEA, and national protocols.

Ref: SOP p. 12

Preparing for Turtle Watch

- Equipment: red-filter lights, GPS, data sheets, first aid.
- Training: turtle ID, approach protocols, emergency response.
- Permissions: obtain from authorities and communities.
- Beach Familiarization: map hazards and historic nesting sites.

Ref: SOP p. 12–13

Conducting the Patrol

- Patrol 2 hours after sunset till early morning.
- Assign minimum 2-person teams per beach sector.
- Use only red lights, approach slowly, stay silent.
- No touching or obstructing turtles. Remain behind flippers.

Ref: SOP p. 13–14

Observations & Nest Marking

- Record species, tags, nesting behavior, GPS location.
- Take measurements only during egg-laying trance.
- Mark nests with biodegradable materials.
- Document false crawls or threats (no flash).

Ref: SOP p. 14–15

Post-Watch & Data Management

- Clean patrol area; remove all equipment.
- Submit data within 24 hrs; verify GPS and measurements.
- Back up digital records and tag disturbance events.
- Share seasonal updates with local community and partners.

Ref: SOP p. 15–16

Field Experiences: Applying the SOP in Pakistan

- Implementation of SOPs across Pakistan's coast:
- Hawksbay & Sandspit: Rescue and release operations for Green Turtles (since 2015)
- Jiwani: Community beach patrols with trained local observer (since 2018-19)
- Bycatch: Safe handling and releases in tuna and coastal fisheries (Since 2012)

Ref: Field Implementation – Real-world SOP examples from WWF-Pakistan (2015–2025)

Field Experiences

Ref: Field Implementation – examples from WWF-Pakistan (2015–2025)

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Field Experiences

S. No	Activity	Venue	Responsibility
1.	Introduction	Main hall, wetland center	WWF team
2.	Workshop on the conservation of marine turtles	Main hall, wetland center	WWF Team
3.	Refreshment	Main hall, wetland center	WWF Team
4.	Briefing and handing of the hatchlings	Main hall, wetland center	WWF team
5.	Turtle watching and observation of adult	Beach	WWF team, Sindh Wildlife department, community observers
6.	Safe release of the hatchlings	Beach	WWF team and Sindh wildlife department

Ref: Field Implementation – examples from WWF-Pakistan (2015–2025)

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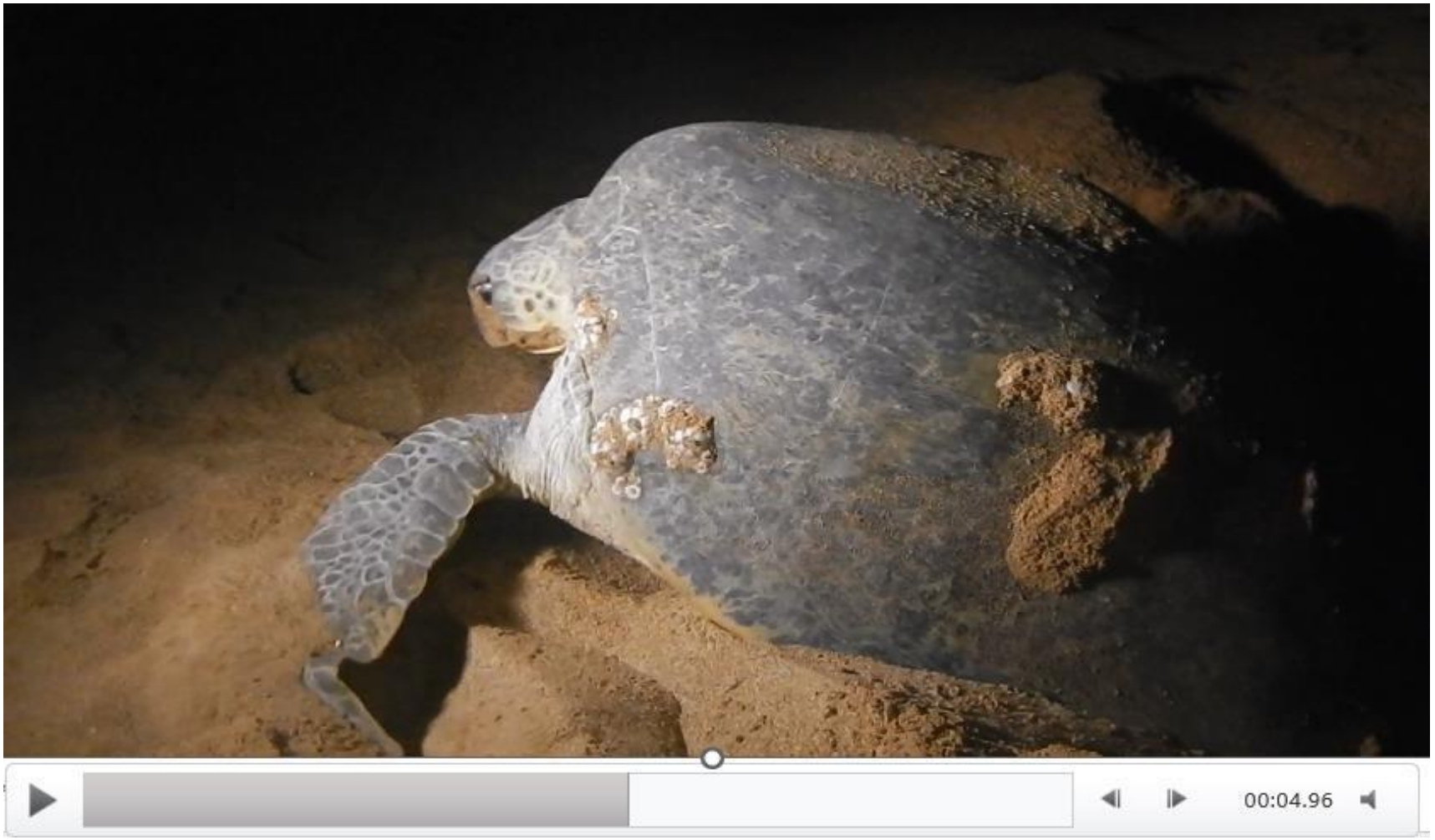
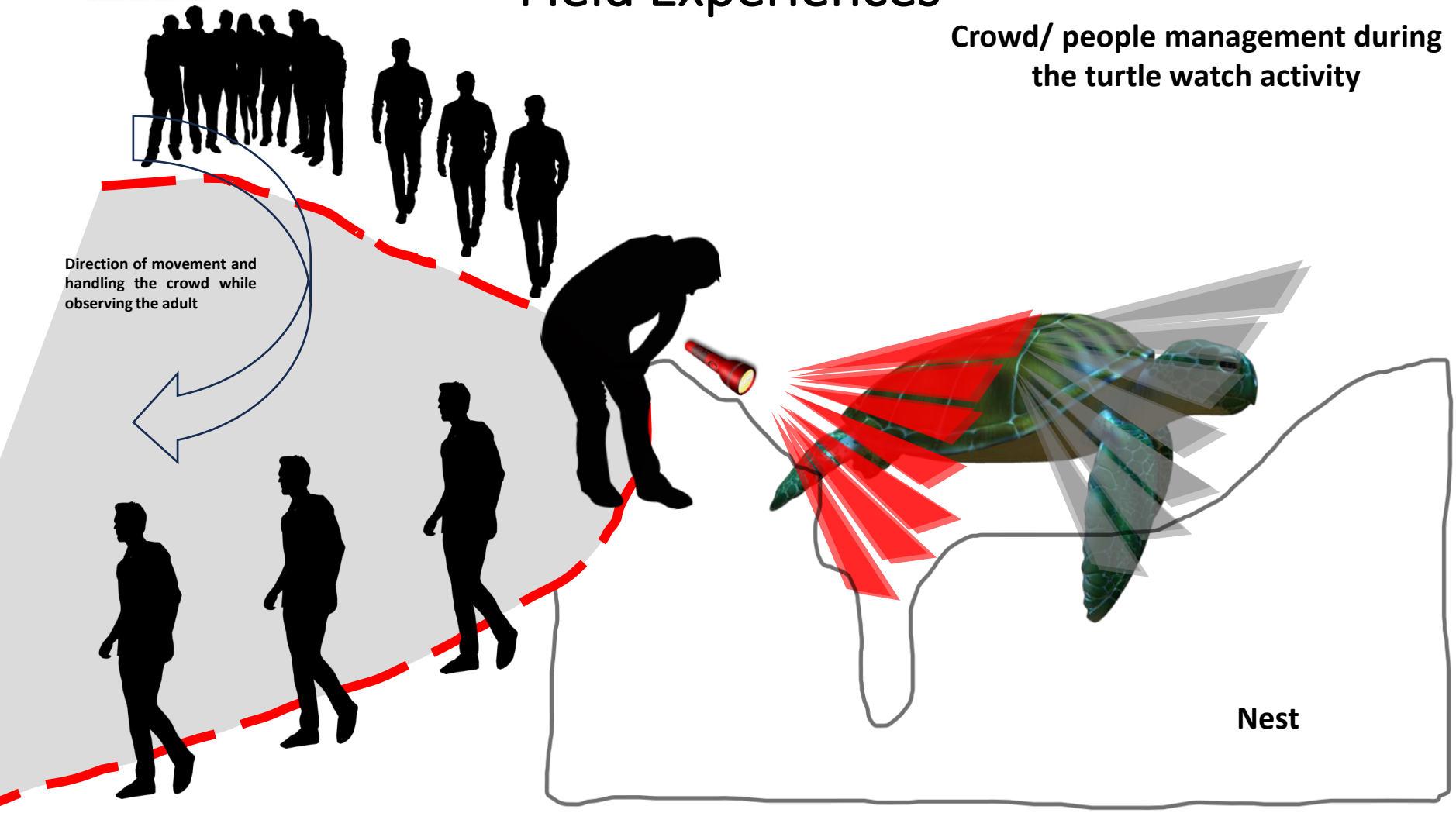
Field Experiences



Ref: Field Implementation – examples from WWF-Pakistan (2015–2025)

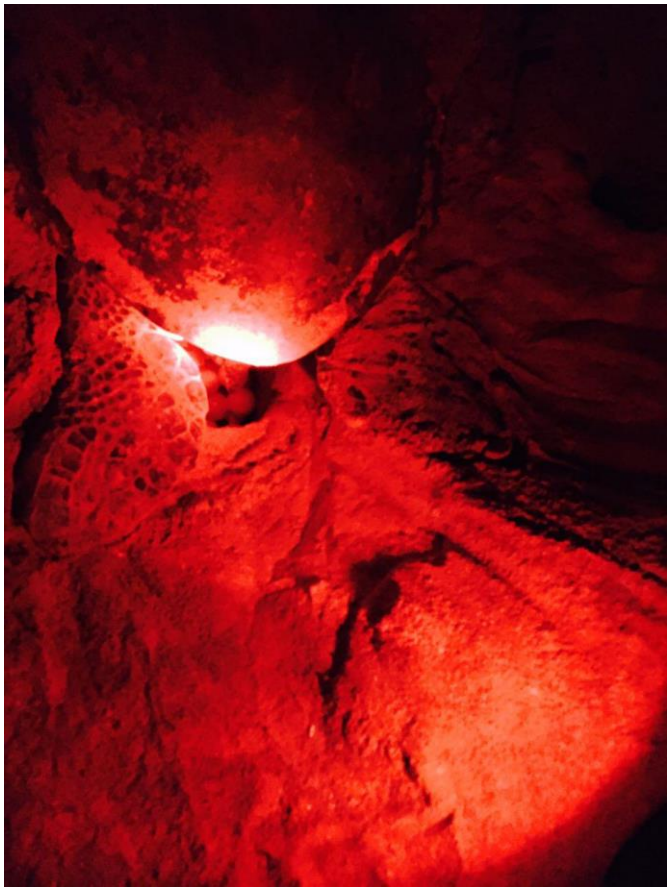
Field Experiences

Crowd/ people management during the turtle watch activity



Field Experiences

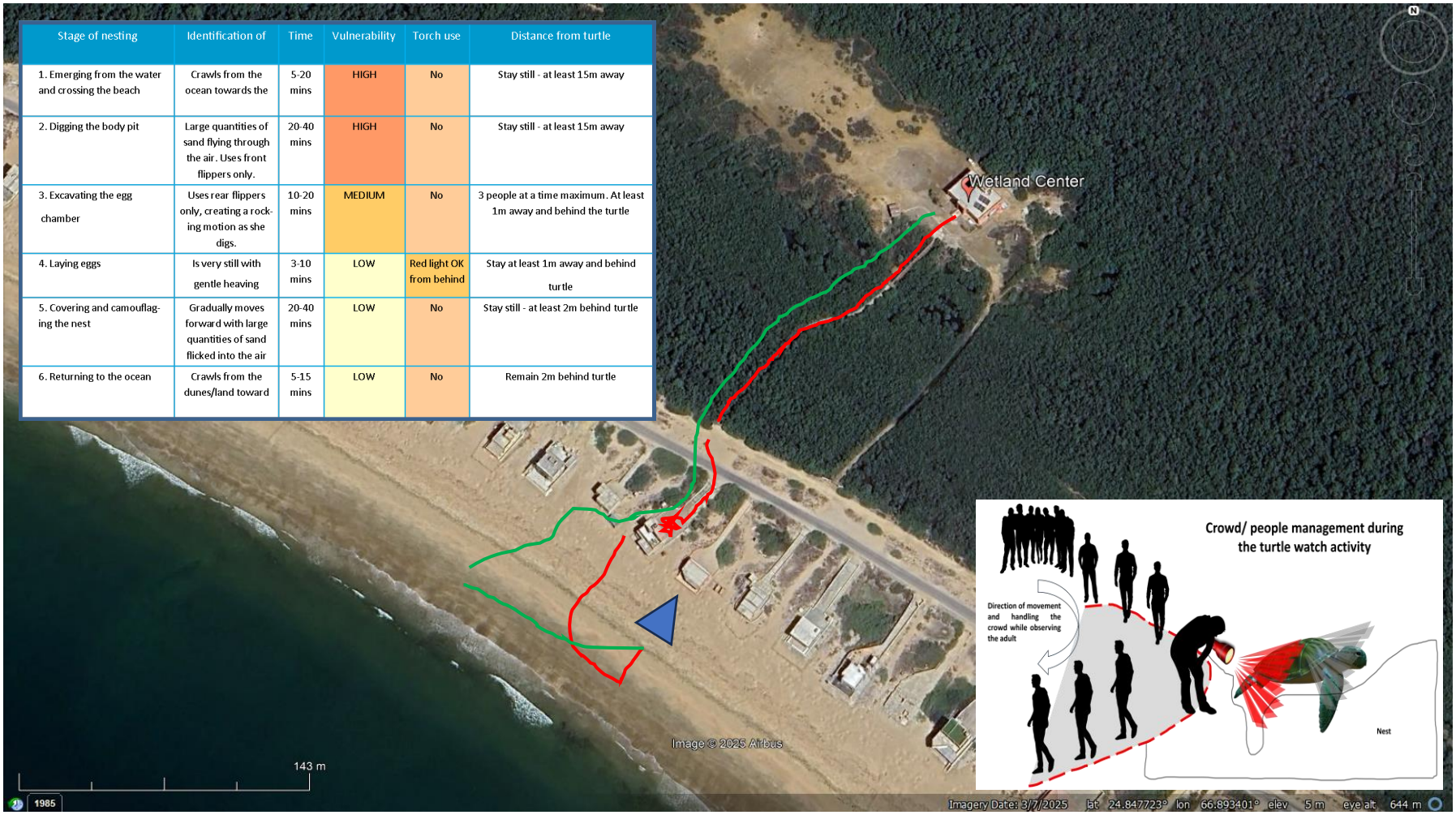
- **DO NOT** use standard white light flashlights for viewing sea turtles.
- **DO NOT** shine any light on the sea turtle or its face.
- **DO NOT** take pictures using a flash.
- **DO NOT** touch or handle any sea turtle.
- **DO NOT** touch or handle sea turtle eggs or put anything in the nest.
- **DO NOT** block or stand in a turtle's path to the ocean.
- **DO NOT** disturb tracks left by adult or hatchling turtles.
- **DO** watch from a distance.
- **DO** stay out of sight.
- **DO** stay behind the sea turtle until she begins laying her eggs.
- **DO** remain quiet and still.
- **DO** leave the hatchlings in their nest.
- **DO** let them emerge & crawl to the water on their own.
- **DO** enjoy the experience and remember it for the rest of your life



Ref: Field Implementation – examples from WWF-Pakistan (2015–2025)

Field Experiences

Stage of nesting	Identification of	Time	Vulnerability	Torch use	Distance from turtle
1. Emerging from the water and crossing the beach	Crawls from the ocean towards the	5-20 mins	HIGH	No	Stay still - at least 15m away
2. Digging the body pit	Large quantities of sand flying through the air. Uses front flippers only.	20-40 mins	HIGH	No	Stay still - at least 15m away
3. Excavating the egg chamber	Uses rear flippers only, creating a rock-ing motion as she digs.	10-20 mins	MEDIUM	No	3 people at a time maximum. At least 1m away and behind the turtle
4. Laying eggs	Is very still with gentle heaving	3-10 mins	LOW	Red light OK from behind	Stay at least 1m away and behind turtle
5. Covering and camouflag-ing the nest	Gradually moves forward with large quantities of sand flicked into the air	20-40 mins	LOW	No	Stay still - at least 2m behind turtle
6. Returning to the ocean	Crawls from the dunes/land toward	5-15 mins	LOW	No	Remain 2m behind turtle



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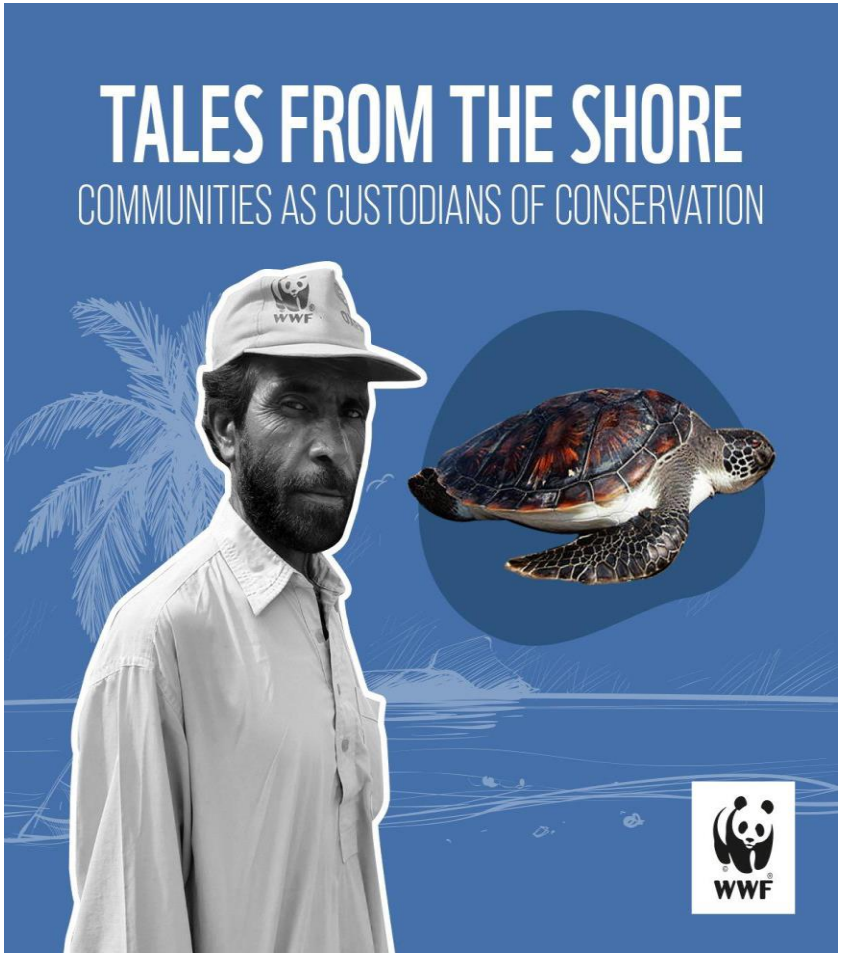
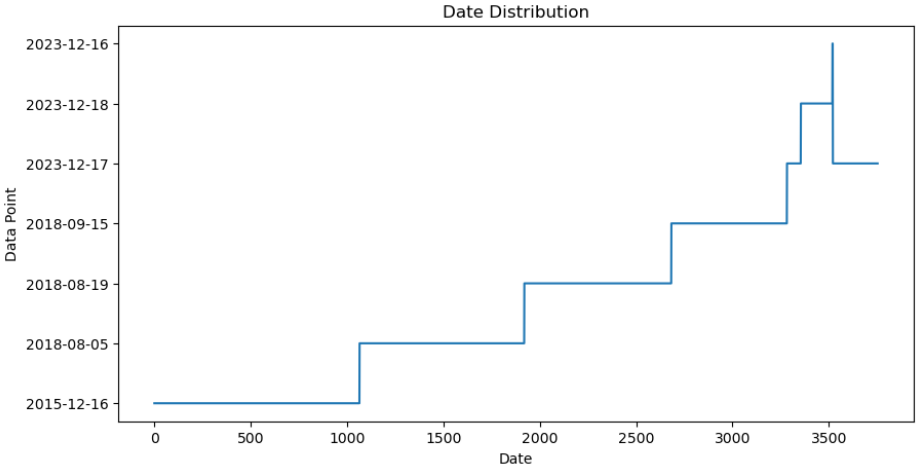
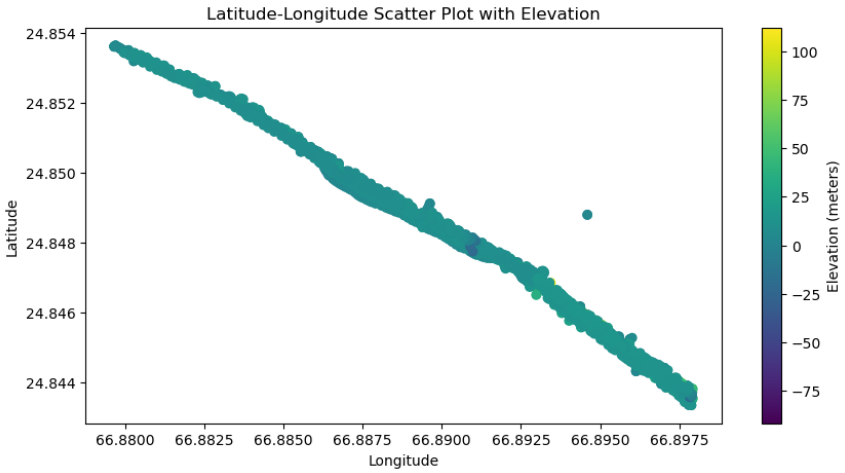






Ref: Field Implementation – examples from WWF-Pakistan (2015–2025)

Safety & Emergency Protocols

- Mandatory buddy system – no solo patrols.
- Suspend patrol during unsafe weather or tides.
- Mark rally points and carry emergency contact list.
- Wear dark clothing, no pets, and carry first aid.

Ref: SOP p. 16–17

SOP: Ethical Considerations

- Never use flash or white light on turtles.
- Don’t block or stand in turtle’s path.
- Allow hatchlings to crawl unaided to the sea.
- Avoid the use of resources of the community/ intellectual property/ turtle data/ community images without consent.

Ref: SOP p. 17

Annexes: Field Tools Overview

- Annex A: Volunteer Checklist
- Annex B: Turtle Species ID Guide
- Annex C: Data Sheets
- Annex D: Patrol Sector Map
- Annex E: Nesting Stage Chart
- Annex F: Visitor Agenda & Activities

Ref: SOP p. 18–32

Annex C: Data Sheets (1)

Field	Description
Patrol Date	(DD/MM/YYYY)
Patrol Time (Start–End)	(HH:MM – HH:MM)
Beach Name & Sector	Name of beach and assigned patrol sector
Patrol Team Members	Names of observers assigned to sector
Species Identified	Green, Hawksbill, Loggerhead, Olive Ridley, Leatherback, Flatback
Turtle Activity Observed	Approaching / Nesting / Covering Nest / Returning / False Crawl
Lighting Used	Red-filtered flashlight / No light / Other (specify)
Tag Information	Tag number (if visible); location (e.g., flipper, PIT tag)
Curved Carapace Length	Measurement in cm (if taken during egg-laying trance)
Curved Carapace Width	Measurement in cm
Nest Location (GPS)	Latitude / Longitude
Distance to Landmark	e.g., “12 m from coconut tree” or “5 m from beach access sign”
Nest Site Description	Open sand / Vegetation / Near tidal zone
False Crawl (Y/N)	Describe briefly: e.g., disturbed sand, no body pit
Hatchling Tracks Present?	Yes / No / Estimated direction of movement
Disturbance Observed?	E.g., human presence, flash photography, pets, fires
Notes	Any unusual behavior, predation signs, or ethical concerns

Ref: SOP p. 18–32

Annex C: Data Sheets (2)

Field	Description
Nest Code / ID	Format: BEACH-SECTOR-YYMMDD
Date Nest Laid	(DD/MM/YYYY)
Date Hatchlings Emerged	(DD/MM/YYYY)
Estimated Emergence Time	e.g., midnight, dawn, early morning
Lighting Present at Time?	Red flashlight / None / White light (Y/N) / Flash photography observed?
Number of Hatchlings Emerged	Estimated or exact count
Did Hatchlings Self-Crawl?	Yes / No / Partially (explain)
Predation Observed	Yes / No — Type (e.g., dogs, birds, crabs)
Weather Impacts	Erosion, flooding, heat stress, etc.
Nest Excavation Done?	Y/N (only if approved protocol)
Excavation Results	Eggs Hatched: __ / Unhatched: __ / Dead Hatchlings: __
Disturbance or Light Use?	Describe any observed flashlights, fires, or observer interference
Additional Notes	Include condition of nest, emerging path, or community presence

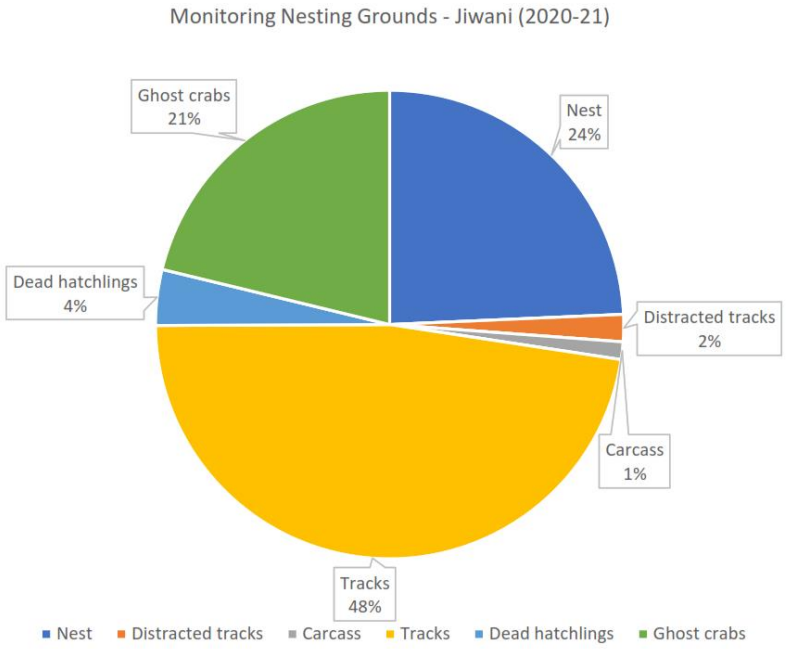
Ref: SOP p. 18–32

Doc.9.2

Ref excel file - Data collection template from nesting sites

Ref: SOP p. 18–32

Doc.9.2



Nesting Grounds - Jiwani

Ref: SOP p. 18–32

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