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Department of Parks and Wildlife

17 Dick Perry Avenue
Technology Park, Western Precinct
Kensington WA 6151

Phone +61-8-9219 9000

Fax +61-8-9334 0498

Email info@dpaw.wa.gov.au

Web www.dpaw.wa.gov.au

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Principal Scientist
Department of Parks and Wildlife
Locked Bag 104
Bentley Delivery Centre, WA 6983
Phone +61-8-9219 9752
Email scott.whiting@dpaw.wa.gov.au

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Front cover photos, clockwise: Rehabilitated loggerhead turtle release (photo – Dani Rob/Parks and Wildlife); Cape Domett (photo – Tony Tucker/Parks and Wildlife); flatback returning to the water (photo – Andrea Whiting); flatback hatchling (photo – Parks and Wildlife); loggerhead turtle eggs (photo – Scott Whiting/Parks and Wildlife) and loggerhead turtles fitted with satellite trackers (photo – Dani Rob/Parks and Wildlife).

Mitigation Measures for Minimising Turtle Interactions with Commercial Fishing Gears in Western Australia

Kendra Travaille, Mervi Kangas and Corey Wakefield

WA Department of Fisheries, Scarborough, WA 6109
Presenter - contact: kendra.travaille@fish.wa.gov.au

Worldwide, one of the primary threats to sea turtles is fishing activities, with numerous sea turtles incidentally captured by commercial fishing gear each year. Within Western Australia, all sea turtles are protected under State and Commonwealth legislation, and fisheries operate under a legislated requirement to minimise interactions with these species and to report any incidents that do occur.

There are currently 46 commercial fisheries in Western Australia, of which 18 have reported at least one sea turtle interaction since 2006. The majority of these interactions have been reported in prawn, scallop and finfish trawl fisheries and demersal longline and gillnet fisheries. Mitigation measures in place for minimising endangered, threatened and protected (ETP) species (e.g. marine mammals, sea turtles, sea snakes, sawfish and syngnathids) interactions in these fisheries include overall effort controls, spatial and temporal closures and gear controls. The development of these measures are the result of ongoing collaboration between management, research and fishing industry, and many of these fisheries have been proactive in seeking new and innovative ways to reduce sea turtle and other ETP species interactions over the past few decades.

Turtle mitigation in trawl fisheries has been successfully addressed through the use of bycatch reduction devices (BRDs), particularly grids (also referred to as turtle exclusion devices or TEDs). BRDs have been mandatory in all prawn and scallop trawl nets since 2002/03. The BRD implementation program in these fisheries included two years of dedicated research into the performance of BRDs in reducing the incidental catch of large animals and smaller fish and invertebrate species (Broadhurst et al. 2002; Kangas and Thompson 2004). This led to legislating

minimum BRD standards, while still allowing innovation and experimentation by industry. Key benefits of TED implementation in these fisheries has been a 95 – 100 % reduction in the capture of larger sharks, rays and turtles (Kangas and Thomson 2004).

The Pilbara Fish Trawl (Interim) Managed Fishery also has a long history of developing and adopting mitigation measures that have resulted in very low capture rates of ETP species, including the use of BRDs since 2006. Recently, research in this fishery has focused on improving understanding of subsurface interactions and exclusion gear effectiveness. In order to examine these issues, all trawl vessels in the fishery were fitted with dual-lens above water and subsurface within-net camera systems over a six month period in 2012. ETP megafauna captured in trawl nets over this period represented a very small proportion of the overall megafauna observed in nets during trawling. Within-net observations of the efficiency of exclusion gear determined that all three configurations successfully facilitated escapement of megafauna, with approximately two-thirds of all megafauna that entered trawl nets exiting through an escape hatch. All grey nurse sharks and sea turtles were observed to exit the net through the escape hatch, with very high rates of escapement also observed for sea snakes (Wakefield et al. 2014).

The development and refinement of ETP species mitigation strategies in Western Australian fisheries is an ongoing process. Future work to further reduce fishery impacts will include continued trialling of BRDs in collaboration with industry, collation and validation of information from fishers regarding interaction rates and networking with other scientists around Australia and overseas to share research experiences.

References

- Broadhurst MK, Kangas MI, Damiano C, Bickford SA, Kennelly SJ (2002) Using composite square-mesh panels and the Nordmøre-grid to reduce bycatch in the Shark Bay prawn-trawl fishery, Western Australia. *Fisheries Research* **58** 349-365.
- Kangas M, Thomson A (2004) Implementation and assessment of bycatch reduction devices in the Shark Bay and Exmouth Gulf trawl fisheries. Final Report Fisheries Research and Development Corporation 2000/189. 70 pp.
- Wakefield CB, Blight S, Dorman SR, Denham A, Newman SJ, Wakeford J, Molony BW, Thomson AW, Syers C, O'Donoghue S (2014) Independent observation of catches and subsurface mitigation efficiencies of modified trawl nets for endangered, threatened and protected megafauna bycatch in the Pilbara Fish Trawl Fishery. Fisheries Research Report No. 244; Department of Fisheries, Western Australia.