Sea Turtles in the Western Australian Region: What do we Now Know/Still Need?

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- The Western Australian Marine Turtle Project (Prince, 1993: MTN 60) aimed at resource discovery, species populations' research, management application, community engagement, and knowledge building commenced in the mid-1980s. An integrated regional long term focal programme interest was intended as is required for sea turtles and similar long-lived species

- WAMTProject works have helped improve our knowledge of the regional sea turtles resources, having provided the avenue into dialogue on and engagement with management applications development and community interest including harvest, fisheries bycatch, and resource allocation issues, but some necessary biological and demographics targets have yet to be realised

- Much greater attention now is afforded also within Western Australia to sea turtle matters in biodiversity conservation and environmental management considerations, as evidenced by other presentations in this session, and elsewhere
- How this enhanced interest might translate to better the future prospects of the regional sea turtle populations might well depend on what regard is paid to some of the knowledge gained

- The broad brush pattern of occurrence of breeding by species and in water presence of 4 of the cheloniid sea turtles in the western Australian region was outlined early on (Prince 1994a,b,c)
- Olive ridley turtle nesting presence has only recently been confirmed (Prince et al, MS, in prep)
- Further knowledge of foraging but non-breeding leatherback turtles in the region has also been obtained (Prince, MS, unpublished)

- Demographic, behavioural and stock identity information is ultimately required to provide a sound footing for making choices on and possibly implementing more specific future populations management actions
- Technical advances in analytical techniques and instrumentation can assist in developing the stock identity and behavioural information base
- Demographic analysis rests on the availability of appropriately scaled long term data sets

- Acquisition of these connected primary data sets for modelling poses the greatest of problems for sea turtle scientists and managers
- Maintaining further continuity of such data sets is needed to understand the inherent dynamic nature of natural populations and to review how these might also change with time
- Intended interventionist management drivers need to be cognisant of these possibilities, and to ascertain whether any changes are of anthropogenic origin and amenable to action

- Estate linked resource data acquisition and activities direction and control actions on land are now much enhanced, but further information gaps are yet to be filled
- Land based activities that can impact on the sea turtle nesting populations are readily manageable there, but the on land viewable phenomena may be driven more by happenings at sea

- In water work with turtle populations poses problems additional to those confronted on land – particularly on cost of and accessibility to investigation
- Regional links between nesting and foraging locations can be gleaned from tag recovery data, and may now be supplemented by the more detailed information obtainable via technical applications such as PTTs, etc

- Technology appropriate to deployment on all size classes of sea turtles is not yet available, but bioacoustics devices possibly suited to flatback and leatherback hatchlings are being tested
- Technological approaches to answering behavioural questions require the right combination of devices

- Refinement of in water sea turtle abundance estimation by aerial survey is a matter for further attention. Abundance estimates presently derivable from secondary observations on dugong surveys would be substantially improved
- Species composition estimates are more problematic. Reliable identification from remote observation is difficult
- In water sampling by other methods can address species id and small size class issues

- Summary:
- Large globally significant stocks of flatback, green, hawksbill, and loggerhead turtles, small presence of olive ridleys, and within foraging range of leatherbacks from??
- We have records of “exploitation” – large commercial now ended, and smaller but ongoing indigenous harvest, and vicariant losses by non-targeted human activities
- We have got major fishery bycatch risks for trawl and longline under control
- Etc, etc