

ENVIRONMENT AGENCY – ABU DHABI

Contribution of UAE to Conservation of Dugongs and Seagrass Habitats

Marine Assessment and Conservation

March 2017

UNITED ARAB EMIRATES



UAE'S MARINE AND COASTAL ENVIRONMENT

Surface area:	83,600 km ²
Coastline:	650 km (Arabian Gulf) 90 km (Gulf of Oman).
Population:	3.3 million
Coastal Habitats:	Seagrass, Corals, Mangrove, Salt marsh, Tidal flats, Rocky coastline, Sandy beaches and Sabkhas
Location :	Southern Arabian Gulf
Climate :	Arid, Subtropical
S. Temperature :	17- 34°C
Coast:	Series of islands
Marine life:	Dugongs, Dolphins, Sea turtles
Salinity:	44 - 70 ppt
Rain fall:	5mm- Average
Depth:	35m Average

IN THE PAST

- “Reportedly 60-70 dugongs are brought into Abu Dhabi fish market Annually” - Prof. Colin Betram of St. John’s College, Cambridge at ENHG on 15 Nov 1976
- Archeologists opened up the mounds of Umm Al Nar to find dugong bones dating back to 2700 BC. “They were probably harpooned as they grazed on seagrass”
- “Most important dugong habitats occur within Abu Al Abyad, Bu Tinah and Jabel Dhana of Abu Dhabi waters”. Preen (1989) Afret Conducting his Aerial Survey in 1986
- Sporadic aerial surveys by Preen (1999), Baldwin and Cockcroft (1995)



ARCHEOLOGICAL STUDY

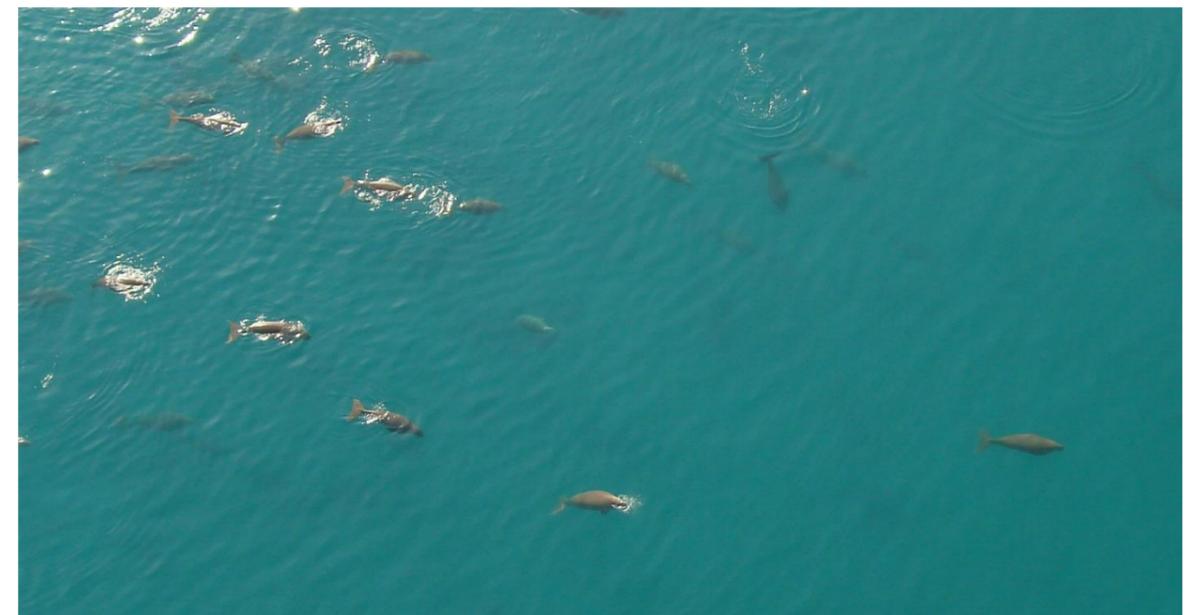
Dr. Mark Beech has analyzed dugong remains of 7500 and 6000 years old in Marawah. His research reveals;

- Ceremonial significance of dugong remains
- A special monumental site constructed around 5,500 years ago on Akab Island in Umm Al-Qaiwain emirate.
- Their remains were also used in association with burial practice



DUGONGS IN UAE

- Dugongs primarily occur in Abu Dhabi waters. A few sightings of dugongs have been reported from Jabel Ali waters of Dubai.
- The Environmental Agency - Abu Dhabi has undertaken studies on dugongs in the UAE since 1999 with support from TOTAL. The studies include regular monitoring of dugongs and their habitats, the study of migration using satellite telemetry, investigation of mortality of dugongs, education and awareness programs involving stakeholders and undertaking international and regional cooperation in conserving dugongs.
- The UAE is signatory to the UNEP CMS dugong conservation MoU and has been implementing actions suggested by the convention since 2008. The UNEP CMS Dugong secretariat is based in the Environment Agency - Abu Dhabi.



MONITORING OF DUGONGS – AERIAL AND FIELD SURVEYS

- Field surveys of dugongs and their habitats are done seasonally within and outside the MPAs.

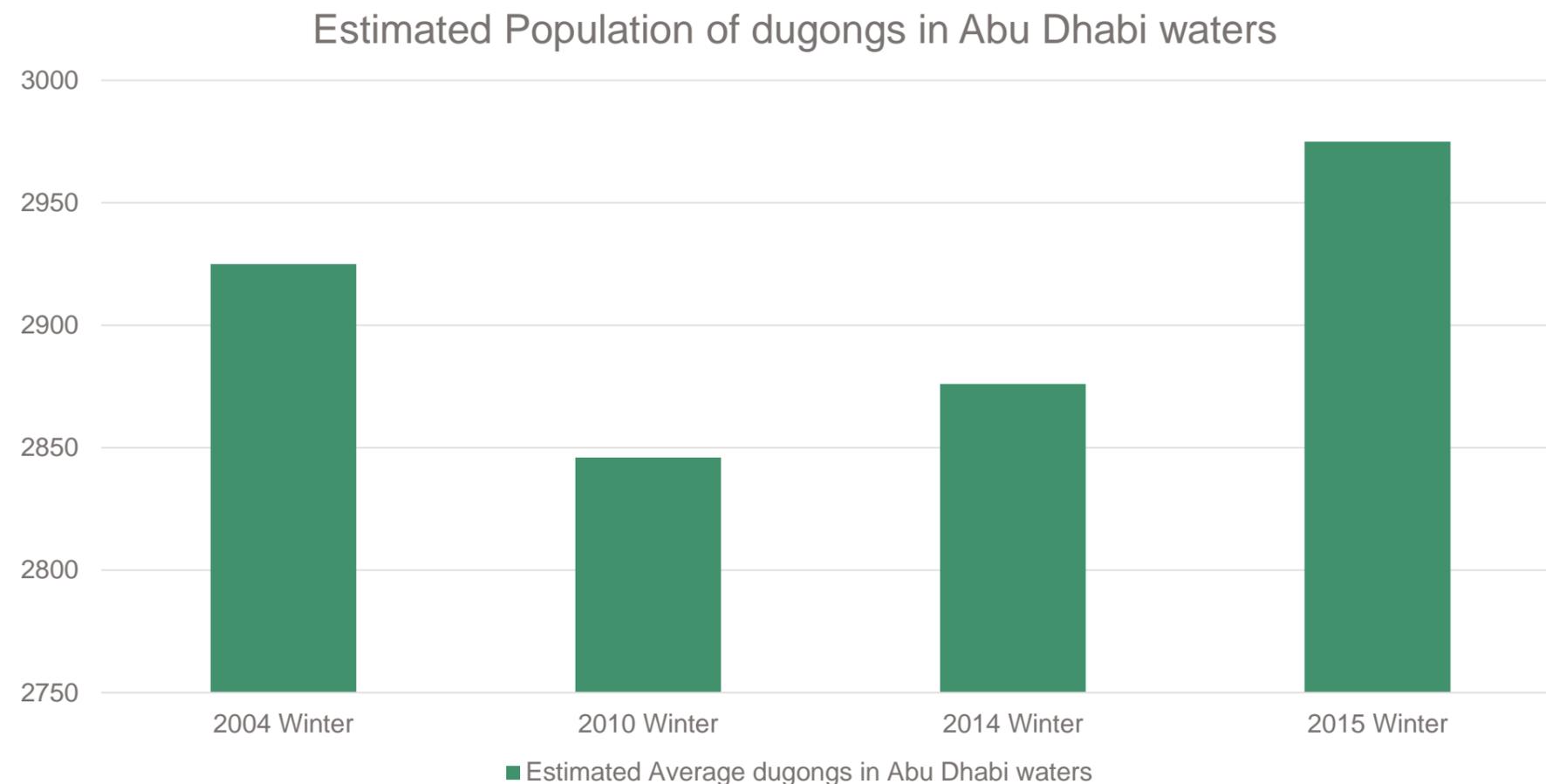


- Regular aerial surveys are being conducted using helicopter to monitor population trend and assess distribution pattern of dugongs in Abu Dhabi waters.



MONITORING DUGONG POPULATION

- Over the past 15 years, Abu Dhabi's dugong population has remained stable. Both summer and winter surveys of dugong populations remain mostly unchanged and the frequency of mother-calf sightings are indicative of a healthy population.
- Figures show a seasonal fluctuation in the presence of dugongs, With cooler water temperatures and more abundant seagrass cover during winter, dugongs tend to be more active. In the warm water of the summer, dugongs are less active and thus less visible.



MONITORING DUGONG POPULATION



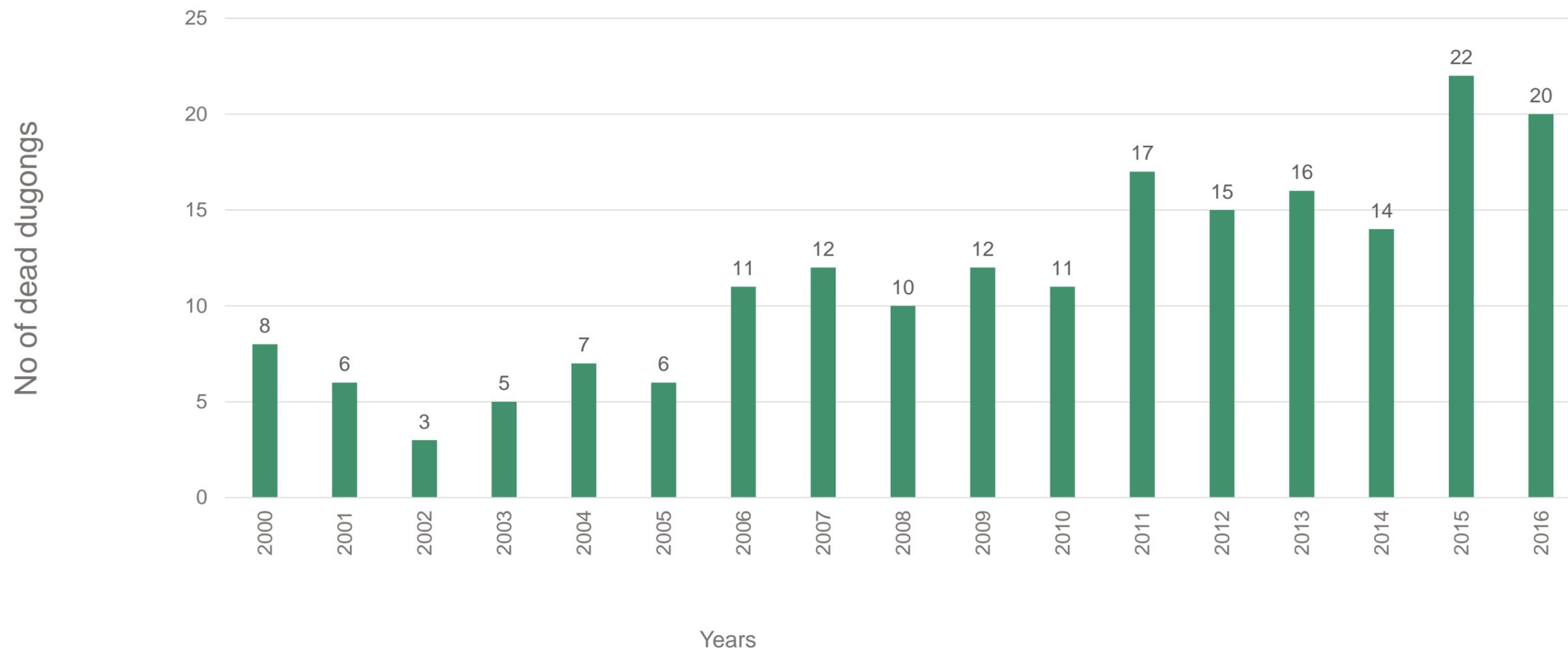
INCIDENCES OF DUGONG MORTALITY



INVESTIGATION OF DUGONG MORTALITY

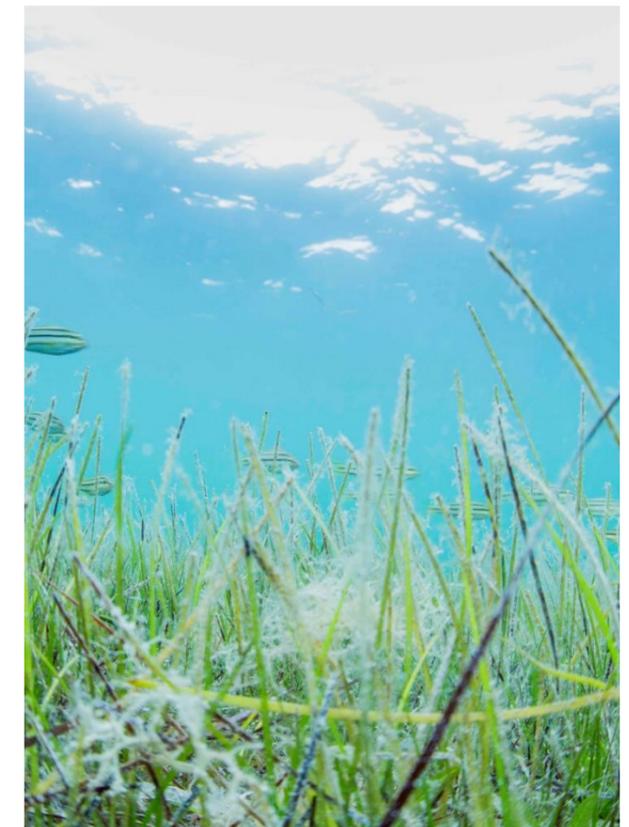
Investigations of incidences of mortality include necropsy, assessment of external and internal injuries / marks and laboratory analysis. Data reveals that at least 75% of dugongs die from suffocation due to drowning in unauthorized or abandoned fishing nets

Year wise Dugong Mortality



STUDY OF DUGONG HABITATS

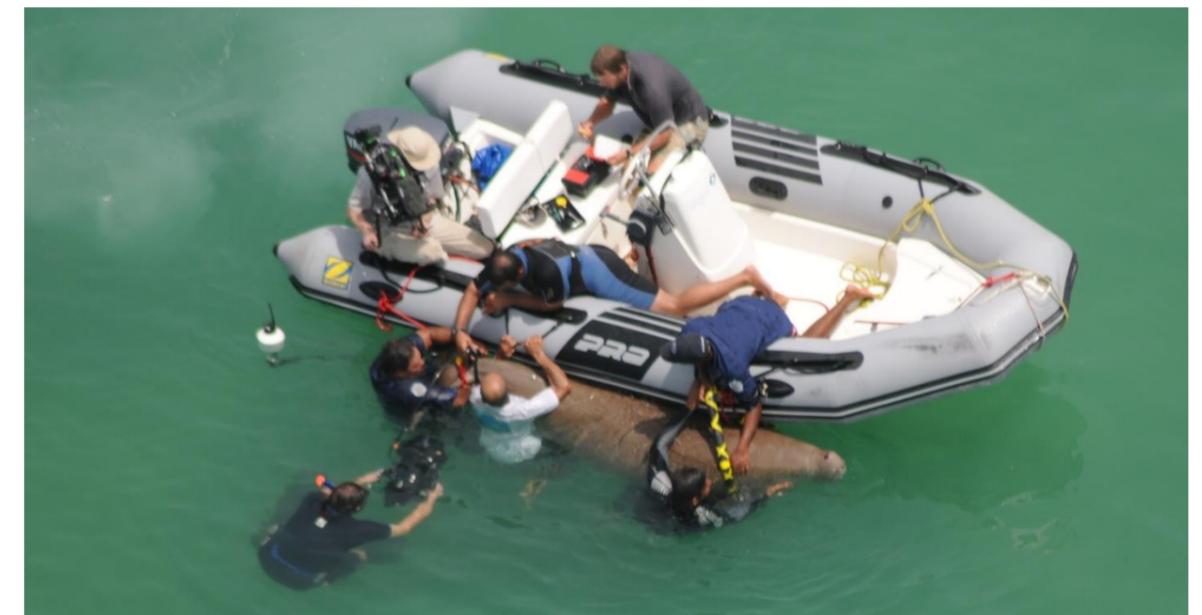
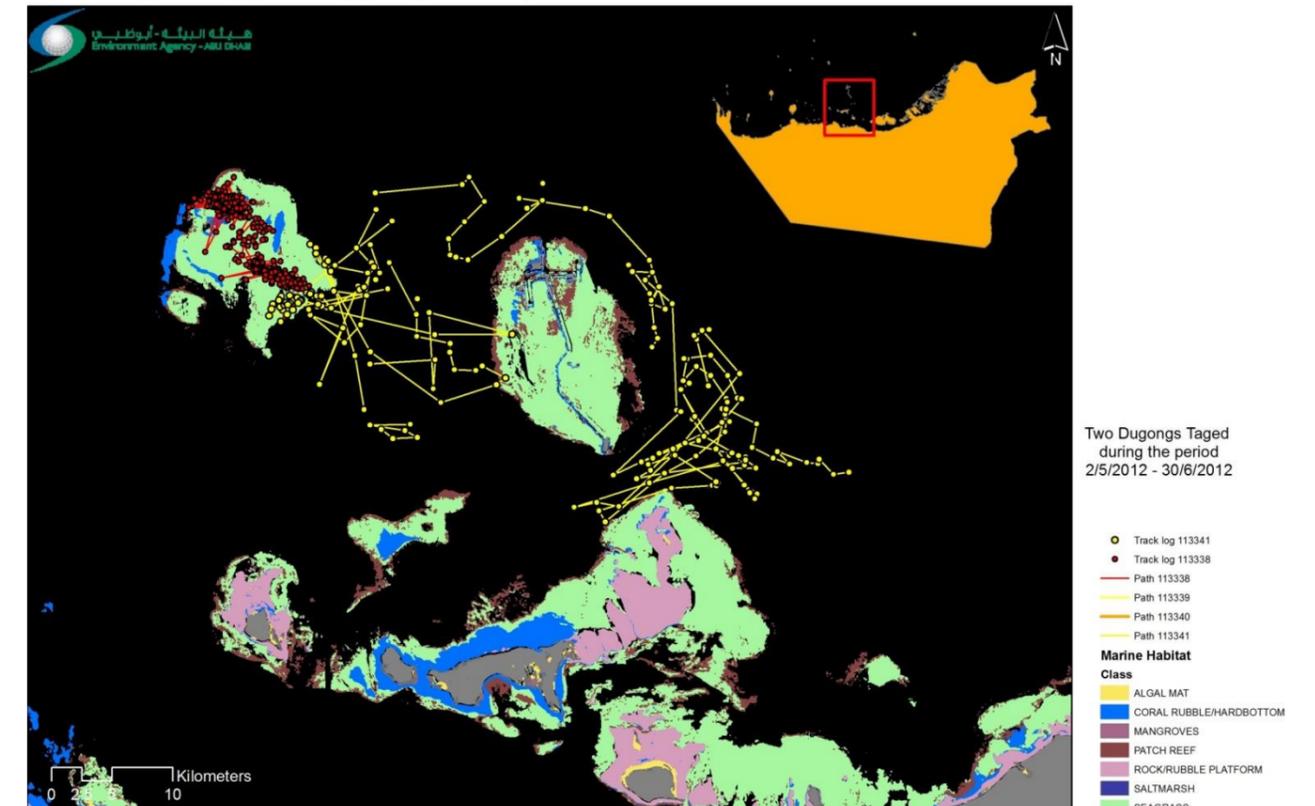
- Three species of seagrass species occur in UAE waters. *Halodule uninervis* is the dominant species with more than 60% cover. *Halophila stipulacea* and *Halophila ovalis* are the other species.
- Species composition, water quality, macro-invertebrates and threatening processes on seagrass are being monitored seasonally.



STUDY OF DUGONG MIGRATION – SATELLITE TELEMETRY

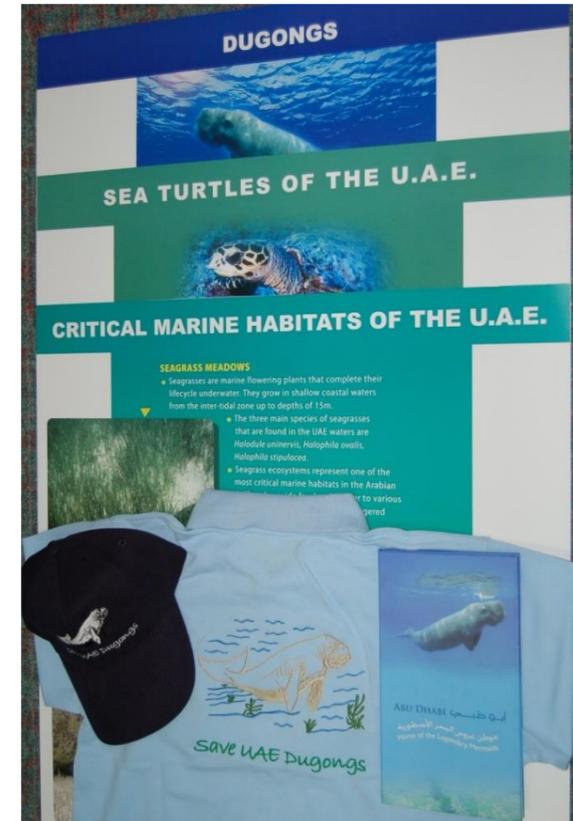
- Data from satellite tagging of dugongs reveals that the dugongs of Abu Dhabi do not move long distances
- Maximum distance travel in a day = 32.4 km
- Average distance travelled per day = 7.2 km

Track Log of tagged Dugongs in respect to Marine habitat



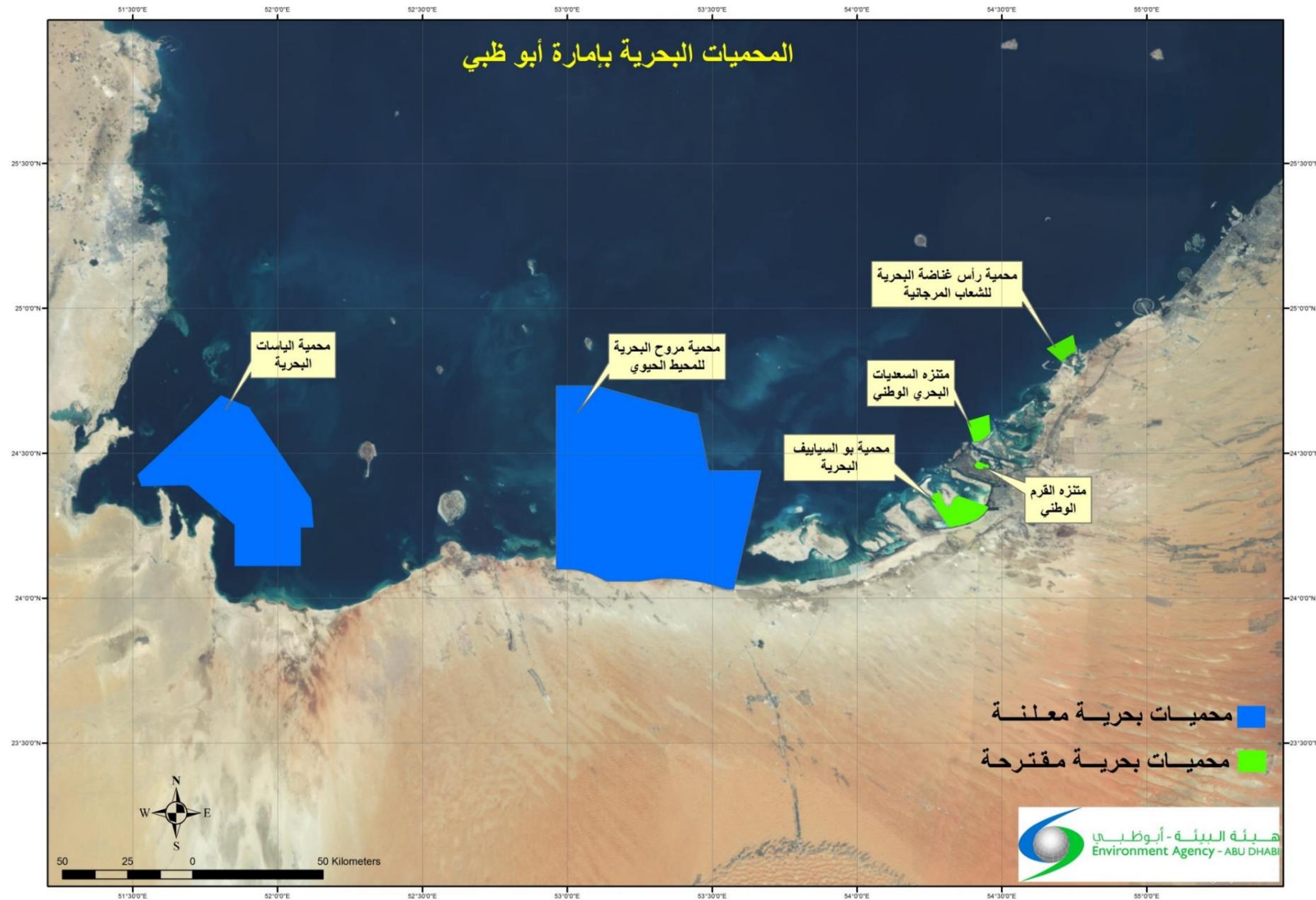
EDUCATION AWARENESS PROGRAM

- Education and awareness materials / gifts
- Teachers training and field visit to dugong habitats
- Stakeholder engagement / meetings
- Workshops and presentations

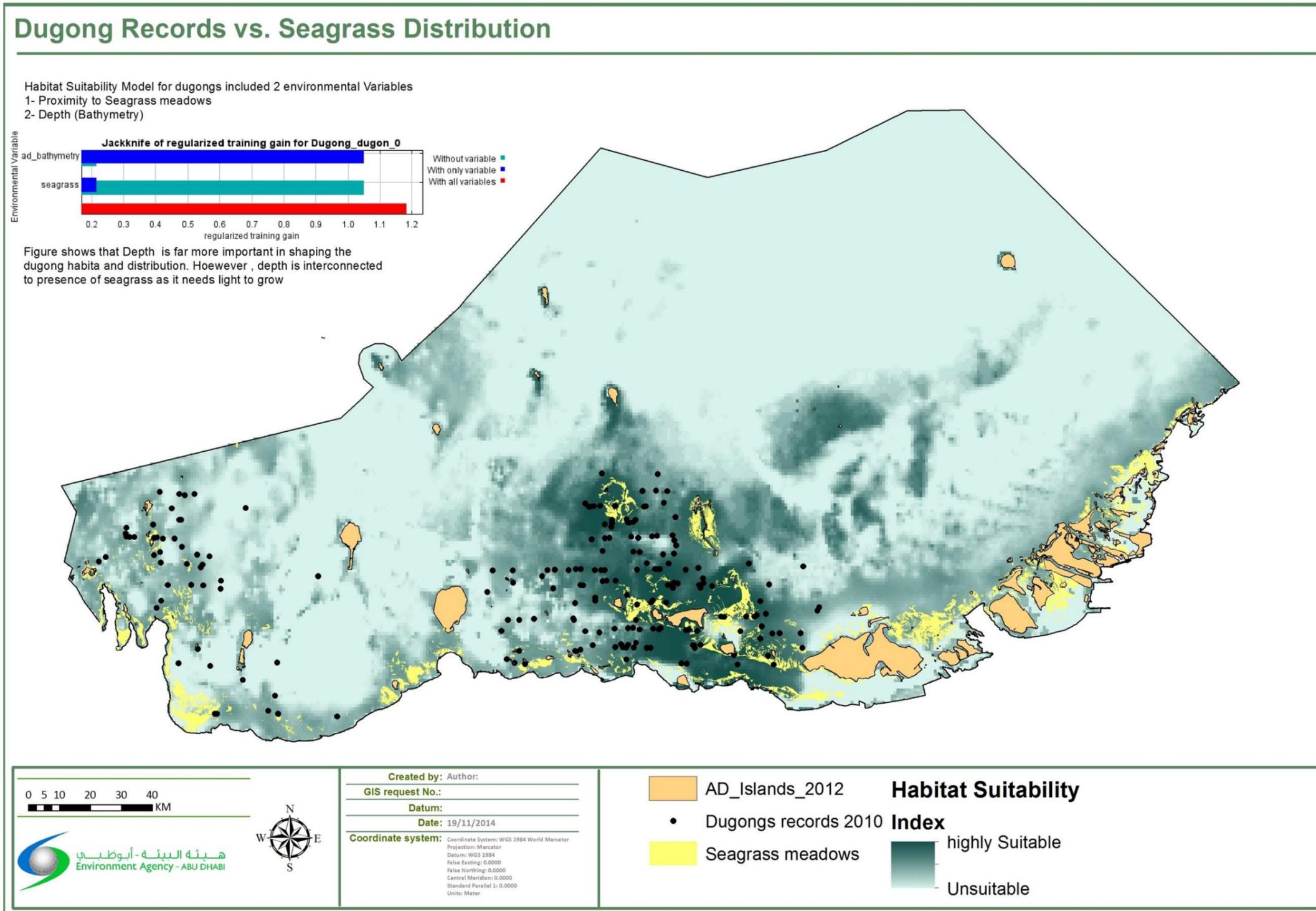


MARINE PROTECTED AREAS – TOOL FOR CONSERVATION OF ENDANGERED SPECIES AND HABITATS

At least 80% of dugongs and 67% of sea turtle occur within the Marine Protected Areas.



UAE'S DUGONG AND SEAGRASS RESEARCH - WAY FORWARD





Thank you

ENVIRONMENT AGENCY – ABU DHABI