

Dugong (*Dugong dugon*) and Seagrass in Thailand: Present Status and Future Challenges



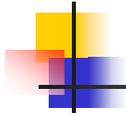
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Background



- Main objectives of Phuket Marine Biological Center (PMBC), DMCR are marine and coastal researches
- Dugong information in 1979
- Seagrass in 1988
- More concern on these 2 topics are in this decade



Topics for the presentation

- 1. Status of Seagrass**
- 2. Status of Dugong**
- 3. Cooperation project in Thailand**
- 4. International cooperation**
- 5. Education**
- 6. Conservation and management**
- 7. Future challenges**



3 types of Seagrass beds

Coral reef associated grass bed



• Mangrove associated grass bed

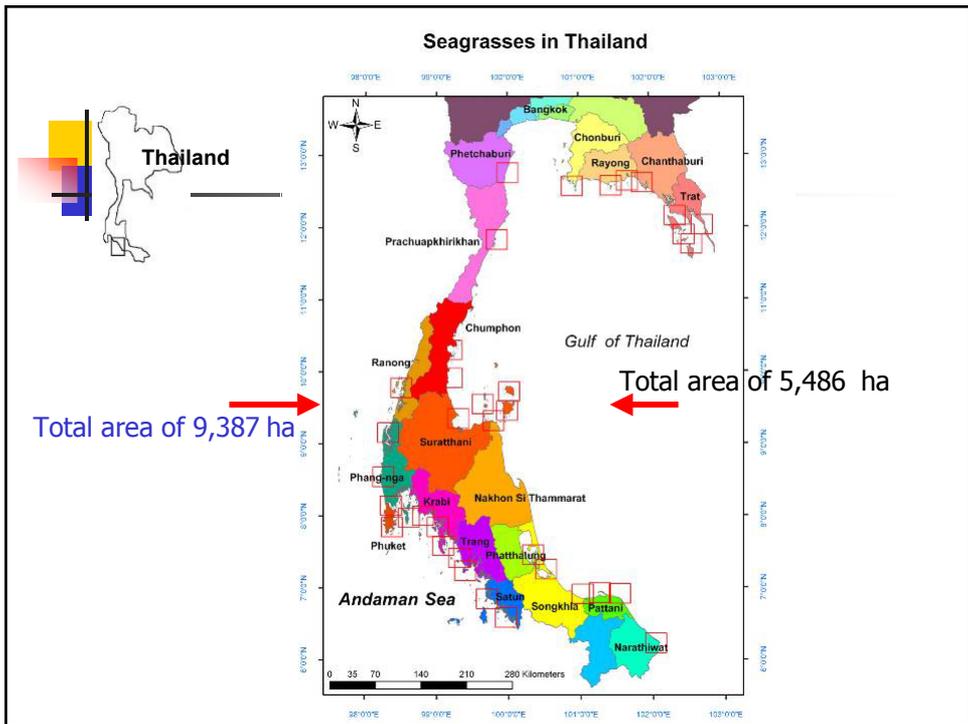


• Shallow sandy bottom grass bed



12 seagrass species

- *Enhalus acoroides*
- *Halophila* group (*H. ovalis*, *H. monor*, *H. decipiens*, *H. beccarii*)
- *Halodule* group (*H. uninervis*, *H. pinifolia*)
- *Cymodocea rotundata*, *C. serrulata*
- *Thalassia hemprichii*
- *Syringodium isoetifolium*
- *Ruppia maritima*





กลุ่มกุ้ง กุ้ง แมงดาทะเล



กลุ่มปูทะเล



กลุ่มดาวทะเลและหอยเม่น



สัตว์ทะเลและสาหร่ายทะเลในแหล่งหญ้าทะเล







push net



Shell collecting

Small scale Fisheries in Seagrass Beds

Stake trap

Crab trap

Destruction of SB

Man made impact

- tin dredging near shore and sediment from land-based mining
- coastal development (sedimentation, pollution...)
- fisheries (push net, long line, crab trap)

Nature (Monsoon, Tsunami...)



2. Status of Dugong



Biological aspects

PMBC:

- Stranding record
- Stomach content
- Tissue collecting
 - DNA & heavy metal analysis
- Bone-age determination
- Behavior (captive animal & aerial survey)
- To educate people and transfer information



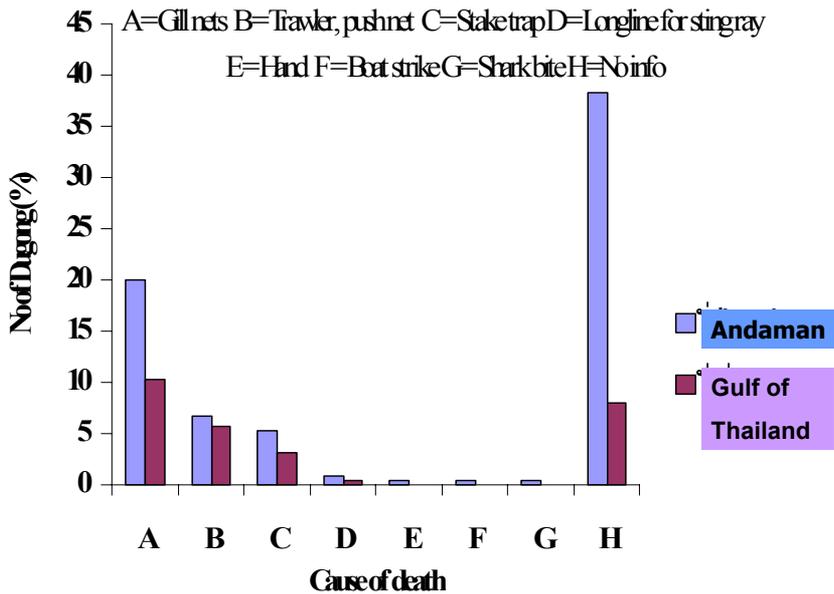
Belief on dugong of local people;
meat, tusk, bone, oil



Cause of stranding/dead animal



Fishing gears;
gill nets, long line,
stake trap



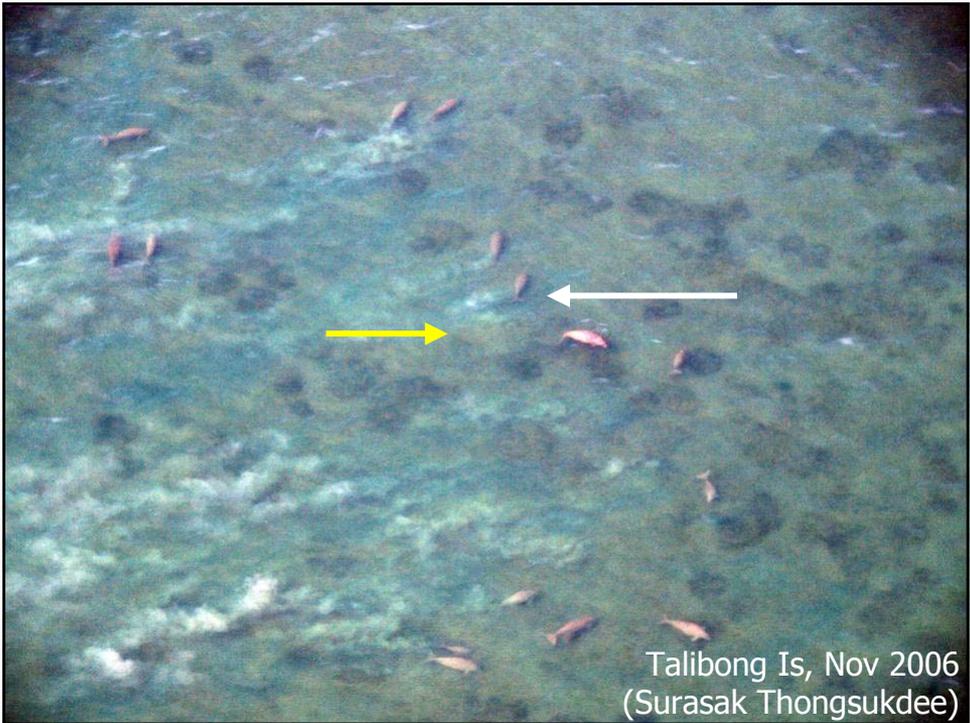
DMCR has conducted the aerial survey since 1997

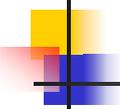


Distribution of dugong in Thai waters

200-250 dugongs







Solitary / group feeding



Muk-Talibong Is, Nov 2006
(Surasak Thongsukdee)



3.Cooperation project in Thailand

- With Dr.Suwanna Panutrakul, Burapha Univ -
--analysis of heavy metal in marine mammals tissue and sea turtles
- With Dr.Chittima Arythhaka, Kasetsart univ
--- mieofauna in seagrass bed at Phuket is

4. International cooperation

Seagrass

ASEAN-Australia: LCR phase I; 1990-1995 (Australian side & Chulalongkorn Univ & PMBC)

--- survey and monitoring seagrass in the Andaman Sea

- Japan & Kasetsart Univ (1998-1999 & 2001-2003) at Trang province

---- the effects of grazing and disturbance by dugong and turtle on seagrass eco & functional of seagrass on the coastal eco.

Dugong

- Kyoto Univ & JFRCA (Japan Fisheries Research Conservation Association) & DMCR

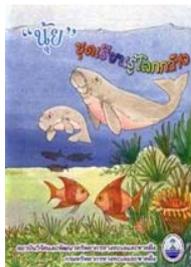
--- **Dugong Biological Survey** since 2002
(acoustic survey, feeding pattern, behavior)

- Japan--- Organotin on dugong tissue

5. Education

• Educational materials

• Exhibition





6. Conservation and management

- UNEP GEF Project in 2005 (Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand : China, Cambodia, Vietnam, Philippines, Malaysia, Indonesia and Thailand) –Action Plan of SG in the Gulf of Thailand
- Thailand Seagrass Action Plan under cooperation of Mahidol Univ & DMCR) hopefully completed in early 2007
- Dugong Action Plan in 2004 (WCS & DMCR) and get the draft of the Action Plan of Seagrass and Dugong in Sept 2007
- Dugong Conservation and Management in the Indian Ocean South-east Asian Region in 2005-6 (Australia Gov & DMCR)- final draft of Dugong MoU



7. Future Challenges: Du & SG

- Implementation of AP- Du & SG
- MoU Dugong- progressing and implementation
- **Research; Seagrass** - monitoring survey
 - survey in deeper area in Andaman Sea coast (spot check or video transect)
 - Ecosystem SG-biodiversity
 - Valuation of existence value of SG bed

Future Challenges: Du & SG

- **Research;**
 - Seagrass** - monitoring survey
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Future Challenges: Du & SG

Research; Dugong

- monitor for dugong in an area where is dangerous for aerial surveys (observe during low tide, manta tow survey in the submerge area)



Future Challenges: Du & SG

- data base
- tagging (PTT, GPS) in order to know the migration and habitat use of dugong

Future Challenges

- To reduce the stranding dugong via the developing technique from the outcome of acoustic survey and sonar experiment?
- To rescue the alive stranding by technique transfer (be trained dugong nursery in Indonesia or Japan)
- Community Based Coastal Zone Management
 - Net-working (Gov, NGOs, private sectors, communities) strengthens & expanding inside and among regions



Thank you

- This study was granted by DMCR.
- UNEP/ CMS supported traveling and accommodation of Thai participants

