Report

The results of the survey on dugong, dolphin, sea turtle, and seagrass in Trang province

20 – 27 February 2005

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The Tsunami that had happened, along the coast of Andaman Sea, on the 26 December 2004 has damaged coastal areas including many marine resources. Marine endangered species; referring to dugong, whale and dolphin, and sea turtle; also have affected by the Tsunami as mentioned in the previous report.

The center has concern over follow up surveys towards populations of dugong and marine endangered species, as well as, seagrass communities that provide important food resources for dugong, especially in the biggest and most abundance communities in the Andaman Sea. It has found that dugongs inhibit in these seagrass communities the most in Thailand. They are located around Talibong island-Muk island, Trang province (Chansang and Poovachiranon, 1994, Adulyanukosol, 2004). As a result, aerial survey has chosen as a method of surveying dugong, dolphin, and sea turtle populations. Moreover, dugong feeding trails and general features of seagrass communities were also surveyed.

Methods

The survey was aiming for marine endangered species and seagrass communities around Talibong island-Muk island and Sikao Bay, Trang province. It took place during 20–27 February 2005 by surveying 3-5 hours per day for a total of 30 hours. The survey used a microlight to fly in a transect line against the coast (figure 1) at the altitude of about 400-700 feet with an average speed of about 45 knot. Captain was sitting and controlling the microlight in front and an observer was observing from behind. Observer had clear visibilities from both left and right side of the microlight (figure 2). When dugong, dolphin, or sea turtle were encountered, latitude and longitude were marked using GPS. Additionally, the voice of the observer describing type of the animals, amount, and behaviours were also recorded. In the area where large amount of dugong and dolphin were encountered, captain would perform many circling flights to ensure the most accurate count along with pictures taken using digital camera with 300 mm zoom. The total survey area was about 60 miles square.

Results

The survey of marine endangered species and seagrass communities around Talibong island-Muk island took 5 days in total with 1 day for picture capturing and 2 days of survey around Sikao Bay. The amount of 42-126 dugongs (sea cow, *Dugong dugon*) were encountered around Talibong-Muk islands, 7-17 calves were classified within this number. Also, 5-13 Indo-Pacific hump-backed dolphins (*Sousa chinensis*) and 8-21 sea turtles were encountered. Green turtle (*Chelonia mydas*) was the most to

be seen, followed by Hawksbill turtle (*Eretmochelys imbricana*), along with 1 Olive Ridley turtle (*Lepidochelys olivacae*). In Sikao Bay area, 0-4 dugongs have been encountered (Table 1).

Table 1. summary of the dugong, dolphin, and sea turtle survey during 20-27 February 2005, around Talibong island, Muk island, Kantang district, and Sikao bay, Sikao district, Trang province.

Date	Location	Dugong (ind)			Dolphin (ind)	Sea turtle (ind)
		adult	calf	total		
20 Feb	Muk island –Talibong island	35	7	42	-	12
21 Feb	”	58	7	65	11(1 calf)	8
22 Feb	”	101	9	110	5	16
23 Feb	”	92	13	105	-	**21**
24 Feb	”	109	17	**126**	**13** (2 calf)	16
25 Feb	”	Still and moving pictures capturing of dugong				
26 Feb	Sikao Bay	4	-	4	-	-
27 Feb	”	-	-	-	-	-
Total		399	53	452	29	73

Remark : 1. On 23 February 2005, a dead dugong was found around Ban Tungmapraw, Talibong island. Chartered boat was hire to retrieve the cascade. It was thought to be male. The remain was severely decay, the head was chopped off leaving the skin and bits of spinal cord. They were buried at Chaomai river mouth.

2. On 26 February 2005, a dead green turtle with a carapace length of about 70-80 cm was found floating around 3-4 km off Tung Jean Bay, Talibong island.

In conclusion, the survey results of the most encountered within a day were 126 dugongs (17 calves in this amount), 21 sea turtles (mostly green turtle), and 13 Indo-Pacific hump-backed dolphin (2 calves in this amount). Nevertheless, seagrass communities were still highly abundance and fertile. Dugongs were still inhibiting and foraging in a group around the areas where previously found to be preferred feeding ground of dugong. These areas were around Leam Juhoy of Talibong island and seagrass communities near Ban Modtanoi in the opposite of Talibong island.

Since the center has started aerial survey for dugong from 1997 onwards, this survey has the most ever encountered dugongs. Although in the year 2001, the estimation of dugong population in these areas was about 123 individuals (Hines and Adulyanukosol, 2001). However, the most encountered within a day in that survey was 89 individuals. This survey has encountered the most dugongs compared to those previous surveys. This could result from the survey time and effort in a day that was long enough, therefore, circling flights could be performed to observe and monitor

dugong for a long time. In addition, transect line could be extended further than previous surveys. Also, it was a suitable period to undertake the survey.

Nonetheless, encountering of very small dugong calves indicate that they were born not so long ago, age around 1-2 years. The body length of about half or more than half of the mother body length with large body size, especially the middle part of the body which was noticeably large when compared to newly born calf. This shows that the population of dugong is still highly abundance that they could reproduce well. Apart from this, interesting behaviours were also observed. There were mating behaviour for 3 times (on 20, 21, and 24 February 2005) and the behaviour where the mother used both of her flippers to hold her newly born calf. Swimming of a very small calf so close to the mother could also be observed, this could perceive as following for milk feeding, sometimes the calf would swim on the back of the mother.

From the survey results, conclusion could be made that Tsunami has no effect on dugong population in Trang province.

Acknowledgement

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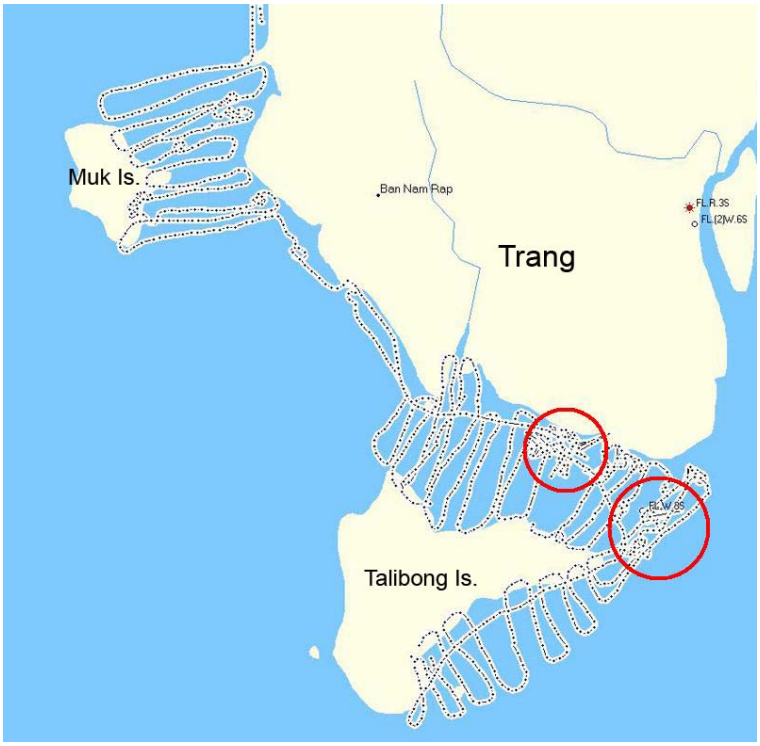

Figure 1. Map of Muk island–Talibong island, shows the survey transect line against the shore. The red circles indicate the most dugong-encountered areas.

Figure 2. Microlight that was used in the aerial survey, captain takes control in front and an observer at the back.

Figure 3. Pictures of some dugongs in a massive group that were foraging around Leam Juhoy, Talibong island and coastal areas near Ban Modtanoi. There are at least 20 dugongs in the picture.

Figure 4. Close up picture of dugongs in a group, 15 individuals with 3 calves in this amount.

Figure 5. Running long-tailed boat near a group of dugongs that were feeding on seagrasses, 4 dugongs were swimming in escape.

Figure 6. (left) Behaviour of mother with newly born calf, the mother was holding the calf with both of her flippers (right) Mother-calf pair in the upper part of the picture, the calf seems to be suckling milk from her mother.

Figure 7. A pair of dugong was mating; male dugong was following the female.

Figure 8. (left) The lower part spotted mother and calf; the calf was newborn and still has very small size (right) Mother and calf, the calf age between 1-2 years. The calf has a large body size and the length is more than half of the mother body length.

Figure 9. The dugong carcass that was found floating around Talibong island, on 23 February 2005, sighting by aerial survey.

Figure 10. Dugong while feeding on seagrass, *Enhalus acoroides*, in the shallow water near Muk island.

Figure 11. Group of Indo-Pacific hump-backed dolphin (*Sousa chinensis*) that was found feeding in the area between Chaomai river mouth, Talibong island, and Muk island.

Figure 12. Dugong feeding trails, not so long in length, could generally be found especially in the area where many dugongs forage (aerial picture).

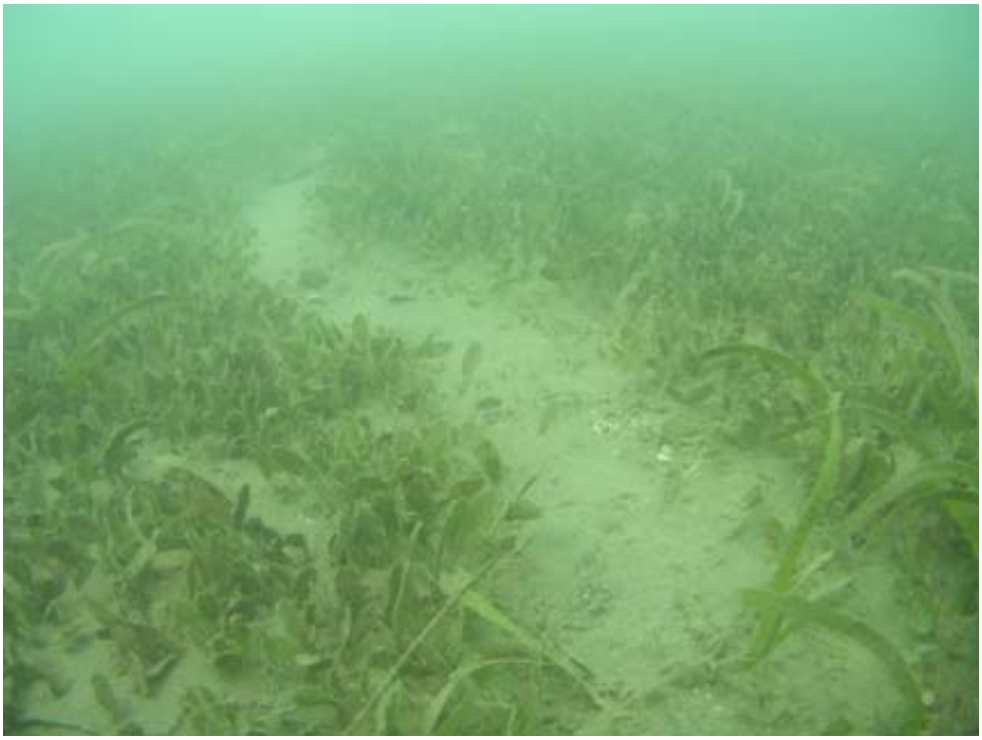

Figure 13. Underwater picture of dugong feeding trail, the most abundance species of seagrass was *Halophila ovalis* but a mixture of *Thalassia hemprichii* and *Enhalus acoroides* could also be found. (Photographed by Ms. Yoshiko Nakanishi)

Figure 14. Aerial picture shows fertile seagrass communities.