



Sea Turtle Research and Conservation in China



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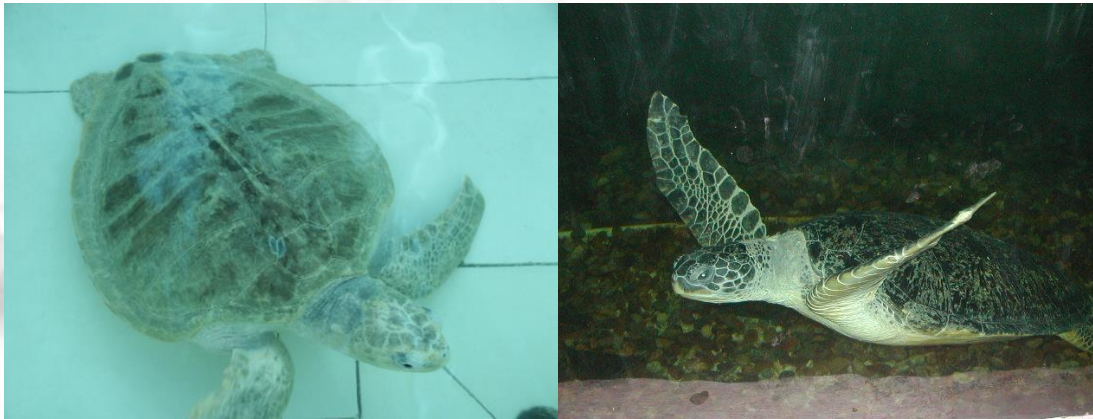
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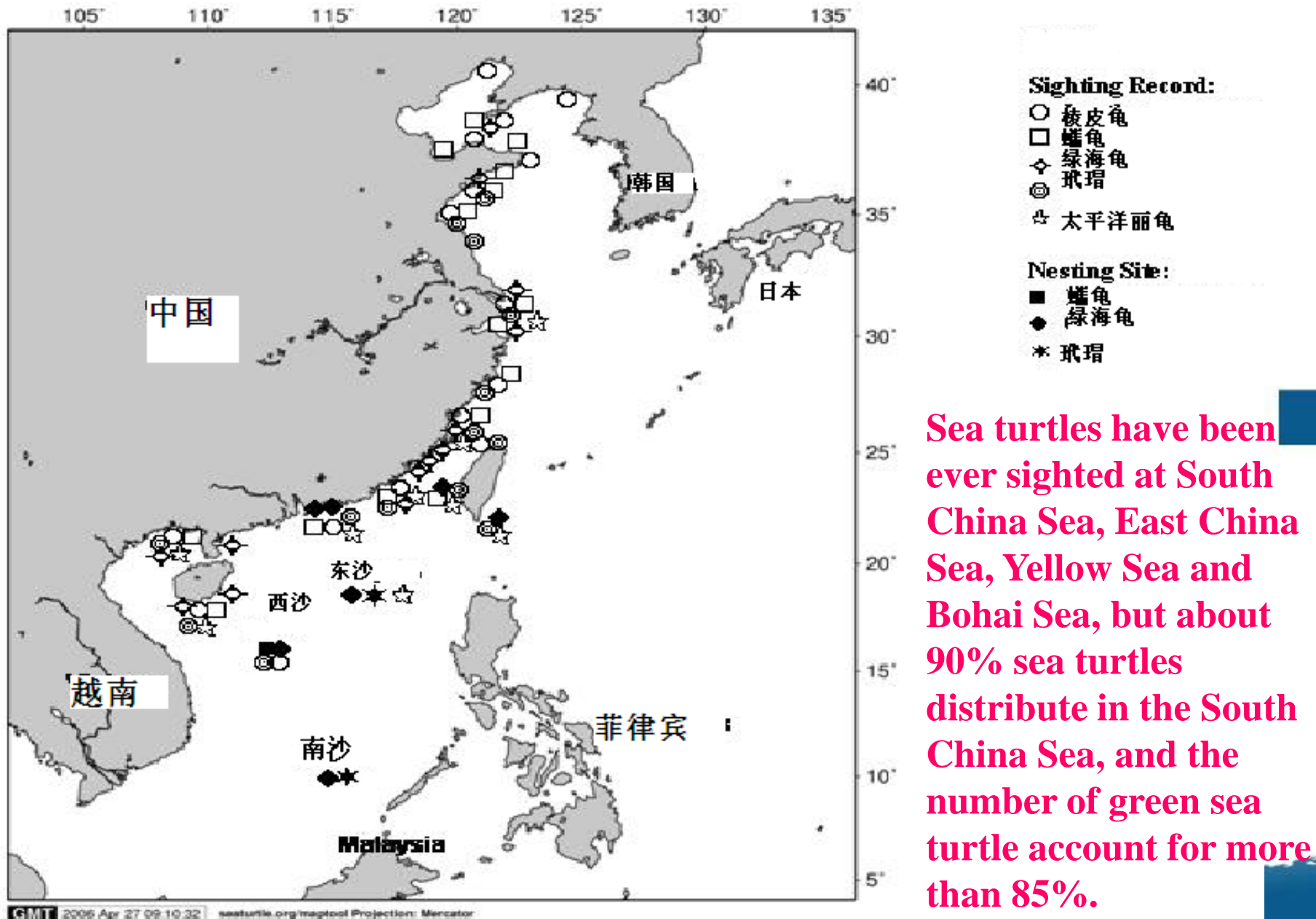


Five species of sea turtles in China

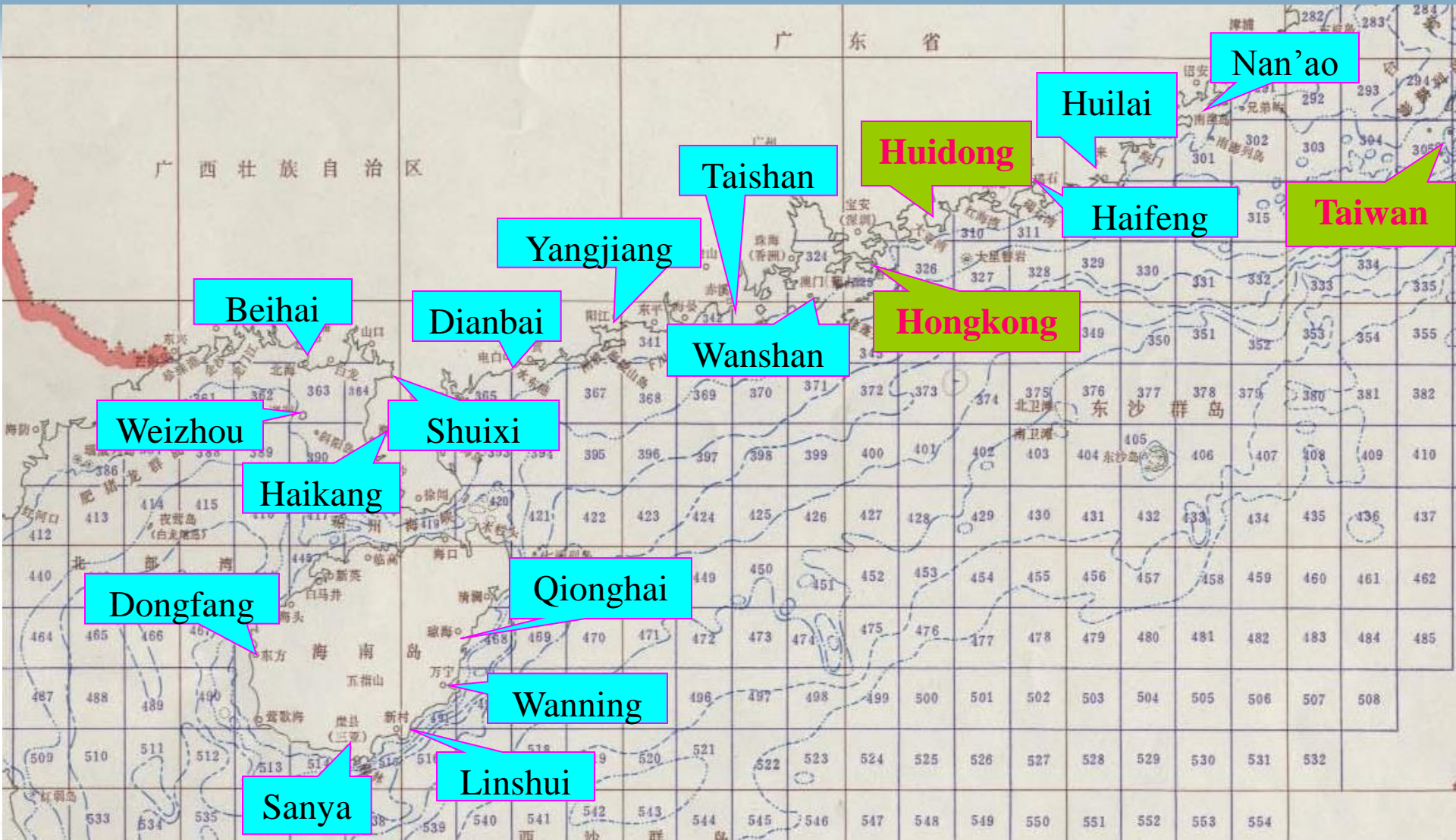
- 绿海龟 Green sea turtle (*Chelonia mydas*)
- 棱皮龟 Leatherback turtle (*Dermochelys coriacea*)
- 玳瑁 Hawksbill turtle (*Eretmochelys imbricata*)
- 太平洋丽龟 Olive ridley turtle (*Lepidochelys olivacea*)
- 蠐龟 Loggerhead turtle (*Caretta caretta*)



Distribution of sea turtles in China



Sea turtles have been ever sighted at South China Sea, East China Sea, Yellow Sea and Bohai Sea, but about 90% sea turtles distribute in the South China Sea, and the number of green sea turtle account for more than 85%.



The sea turtle nesting ground in China only distribute in South China Sea coast and island beaches. There were lots of record of sea turtles coming to lay eggs along the north coast sea beaches before 1940s, but now the nesting grounds only exist at Huidong China mainland, Hongkong and Taiwan.

Huidong Gangkou Sea Turtle Nature Reserve

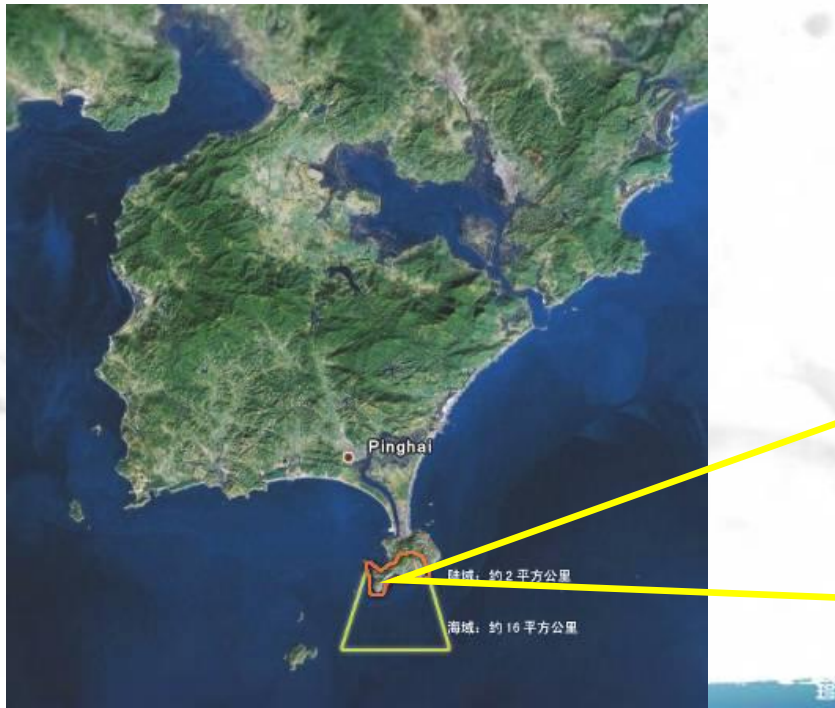
—the only sea turtle nature reserve in China Mainland



➤ Established by the People's Government of Guangdong Province in December 15, 1986

➤ Upgraded to national nature reserve by the approve of State Council in 1992

➤ Accepted as members of the network of Biosphere Reserves by the Chinese MAB Committee in July 1993



From 1985 to 2005:

Landing Sea Turtle 1184 heads (times)

Nesting 665 nests with 75319 eggs

Artificial incubation 62118 heads

Release 53203 heads

Tagging 125 head

Save and Treatment 758 head



Nesting



Artificial incubation



Release





Tagging



Save and Treatment



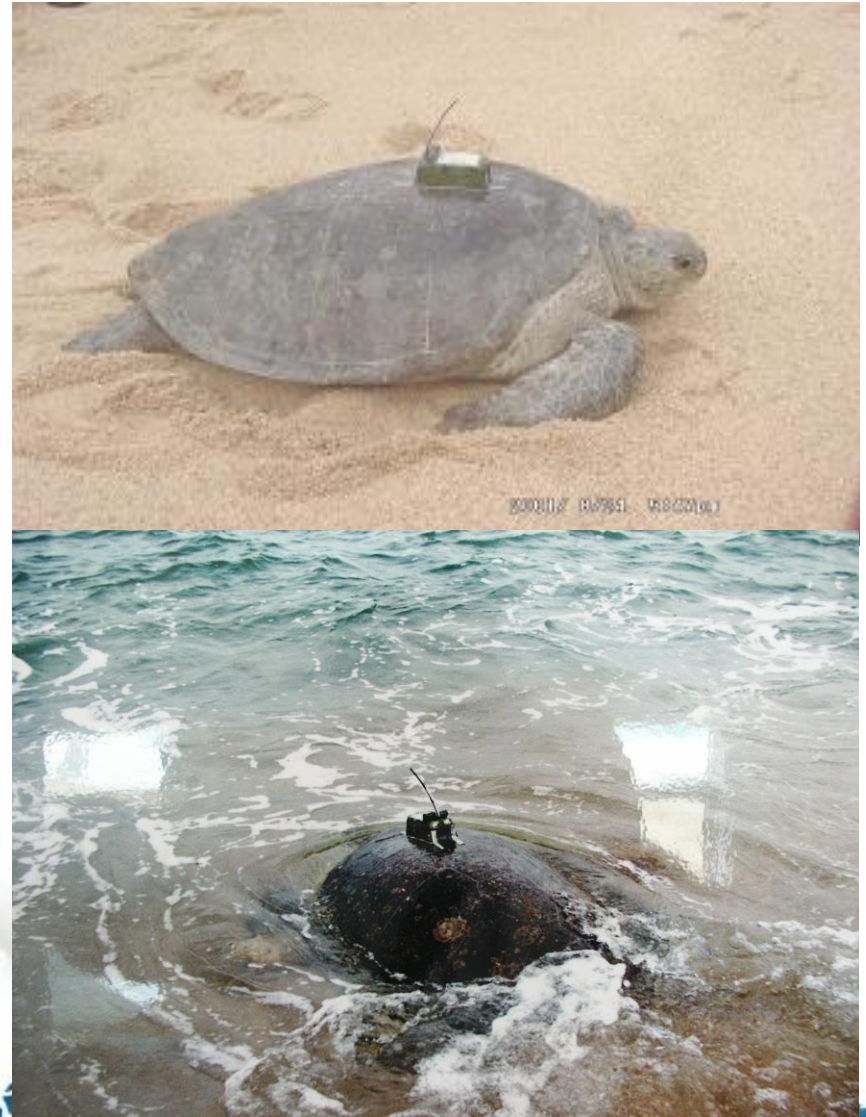
Sea Turtle Nesting and Release Situation (* to 2005/11/24)

Year	Landing	Tagging	nesting	egg	turtle	release
1985	65	0	47	6016	5747	4149
1986	122	0	78	8463	8036	7843
1987	141	20	83	9766	9164	9069
1988	55	12	38	4076	3932	3829
1989	29	6	19	2217	1430	1214
1990	15	1	4	387	339	315
1991	111	10	53	4734	3446	3386
1992	4	0	1	131	91	85
1993	18	2	8	822	276	200
1994	26	5	10	1208	732	690
1995	43	4	17	2054	1787	1772
1996	77	7	43	4713	4108	3980
1997	52	1	29	3597	3234	3154
1998	86	12	61	6387	3104	3084
1999	48	5	23	2648	2157	2050
2000	22	1	11	1015	674	621
2001	24	3	15	1928	1478	1200
2002	16	2	8	876	750	564
2003	136	19	53	6996	5697	4100
2004	37	8	26	2912	2287	1898
2005	57	7	38	4373	3719	2994
Total	1184	125	665	75319	62188	53203

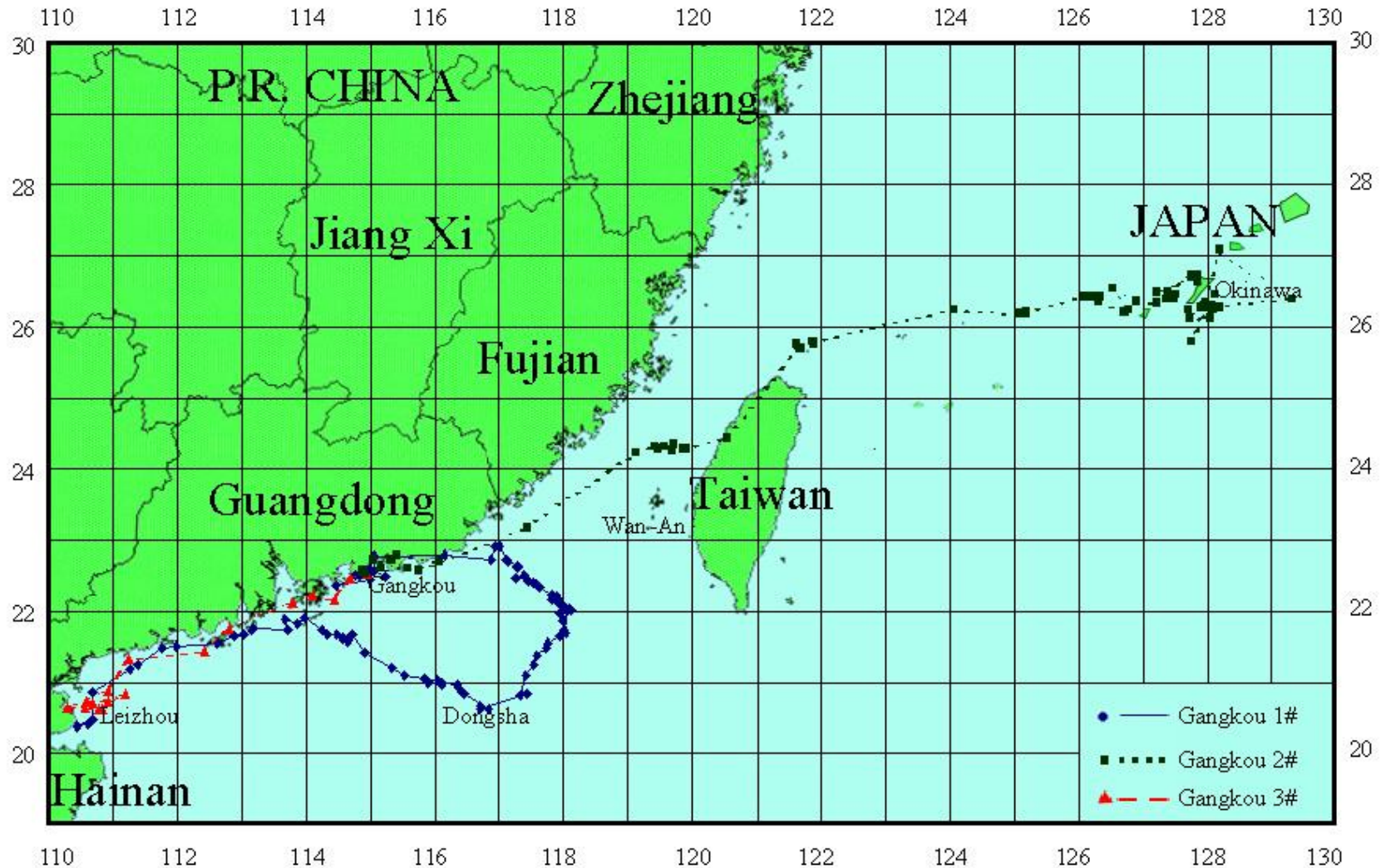
Satellite Tracking



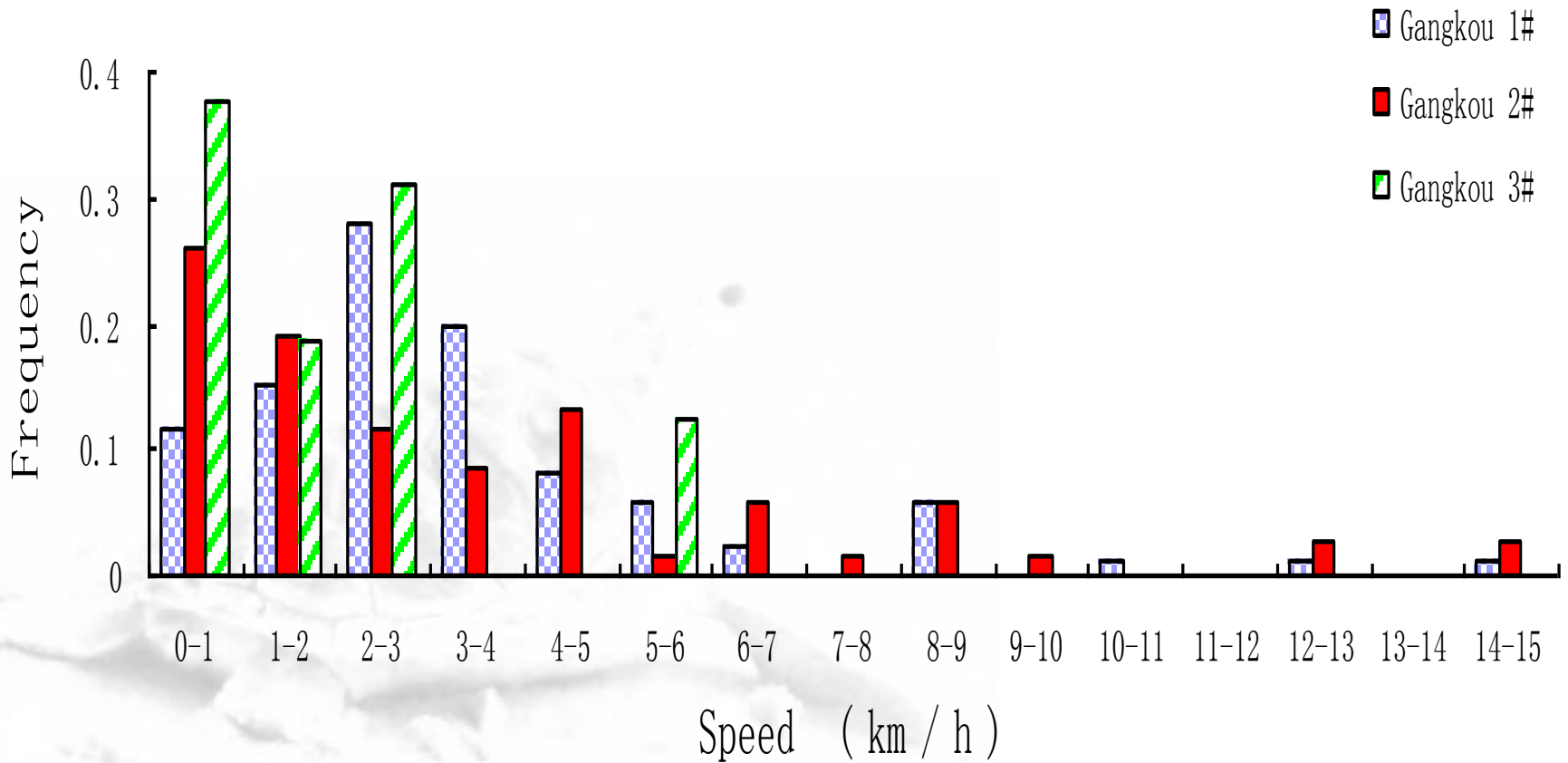
From 2001 to 2006, Post-nesting Migratory Routes of Green sea turtle Gangkou 1# to 8# were tracked with transmitter (ST-6 A1600 or ST-18A800) on their back.



Post-nesting Migratory Routes of 3 Female Green Turtles Tracked by Satellite from Gangkou Sea Turtle National Nature Reserve in 2001. (From Wang, 2001)



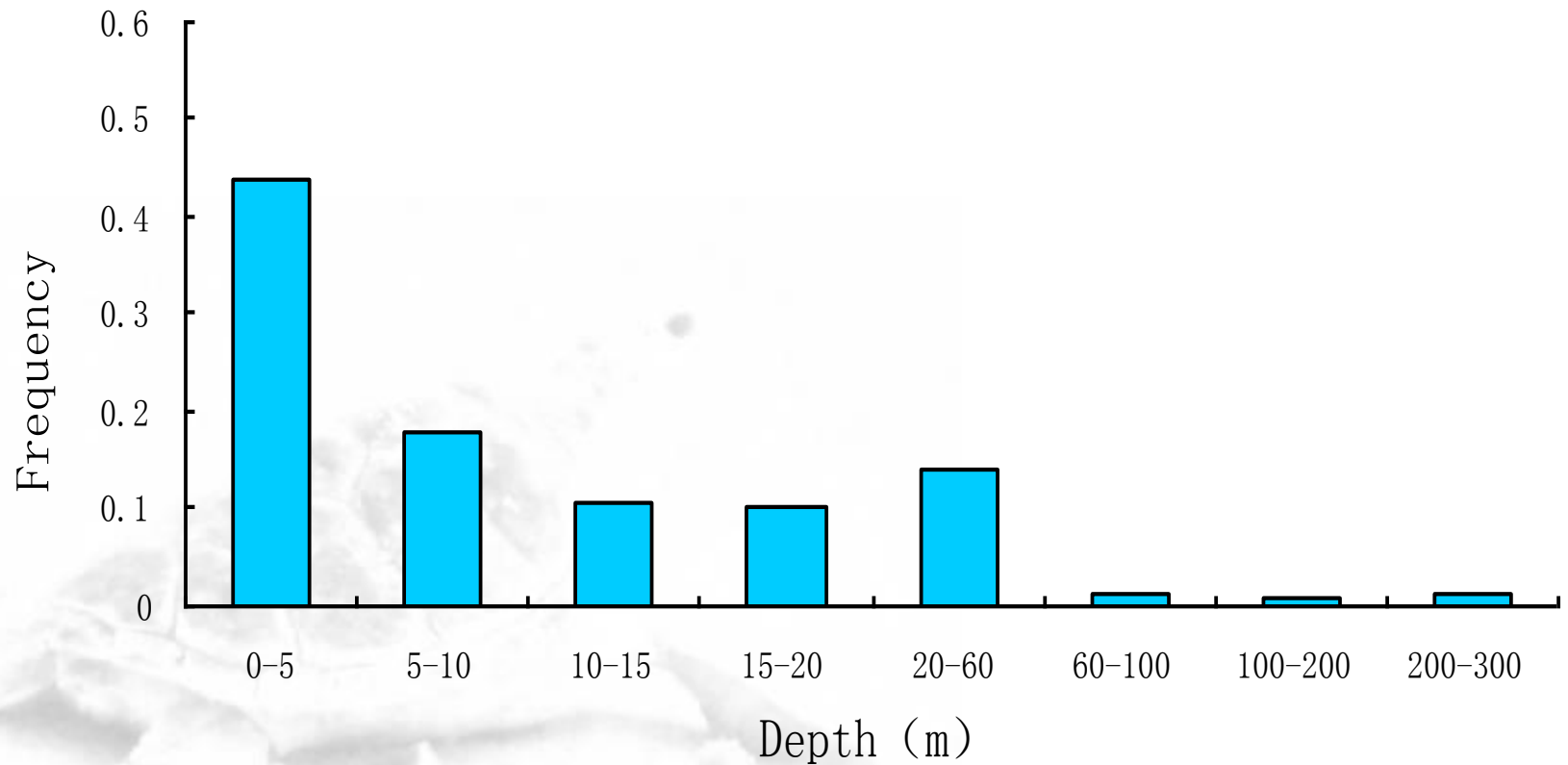
Speed Distribution During the Migrating Process of the 3 Tracked Turtles



Green sea turtle Gangkou 1# finally reached to Okimnawa Japan and was caught by a Japanese fish man.



Frequency of sea turtle (Gangkou 1#) staying in different water depths



Interface between coastal water and basin water

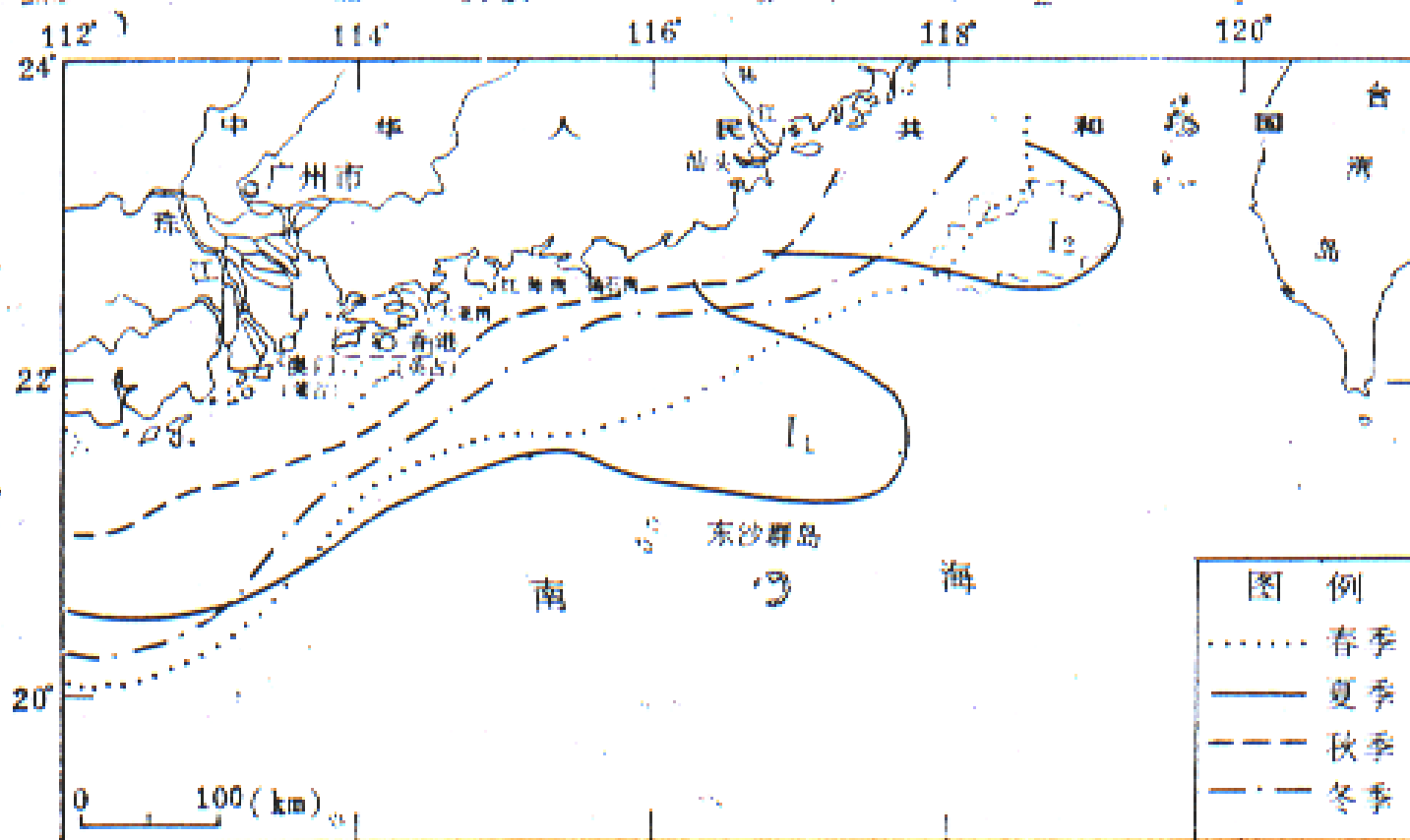


图 4.69 各季沿岸水与外海水的界面位置

Sea surface salinity distribution in Summer

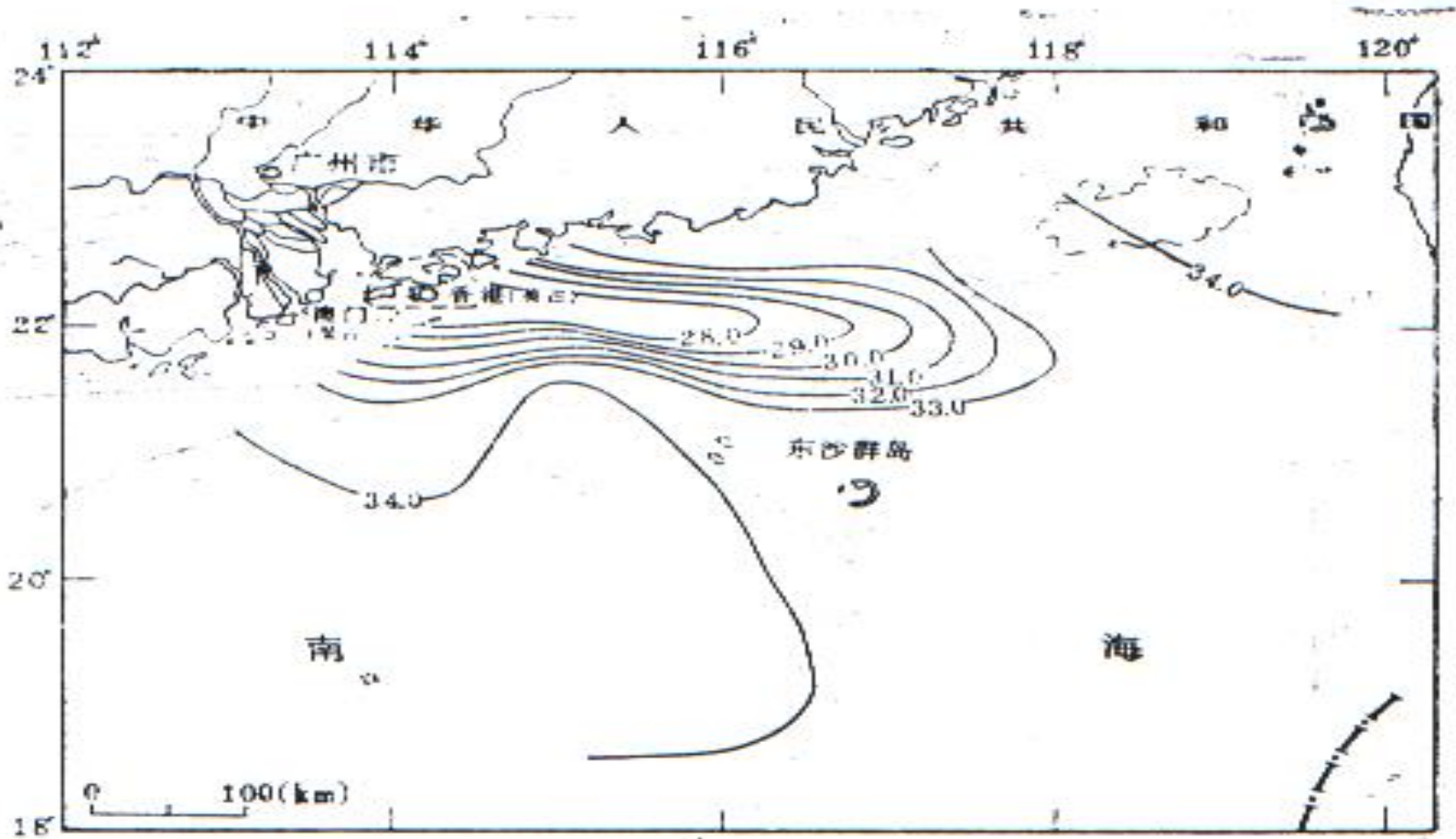
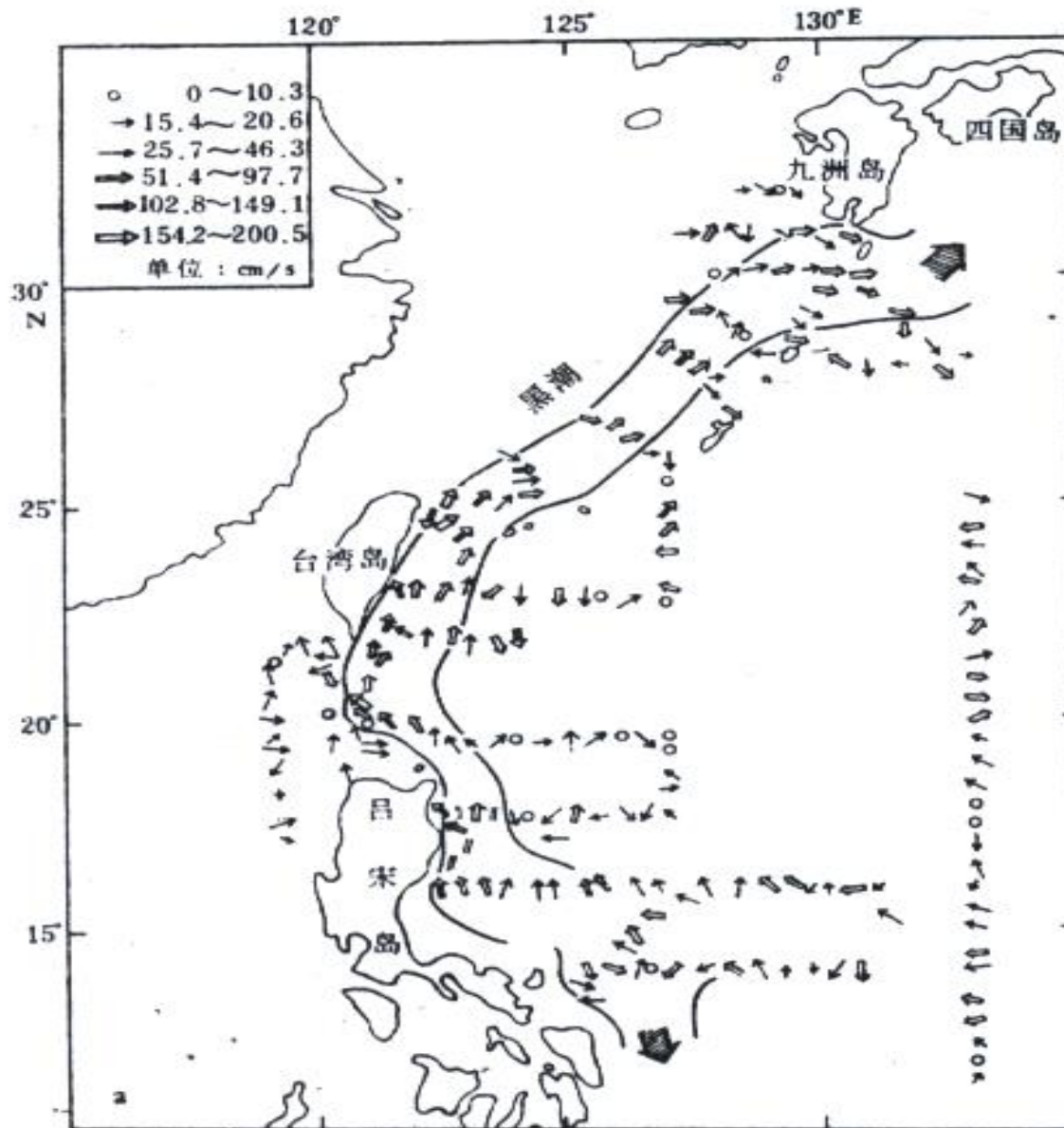


图 4.58a 夏季表层盐度分布 (‰, 1979年)



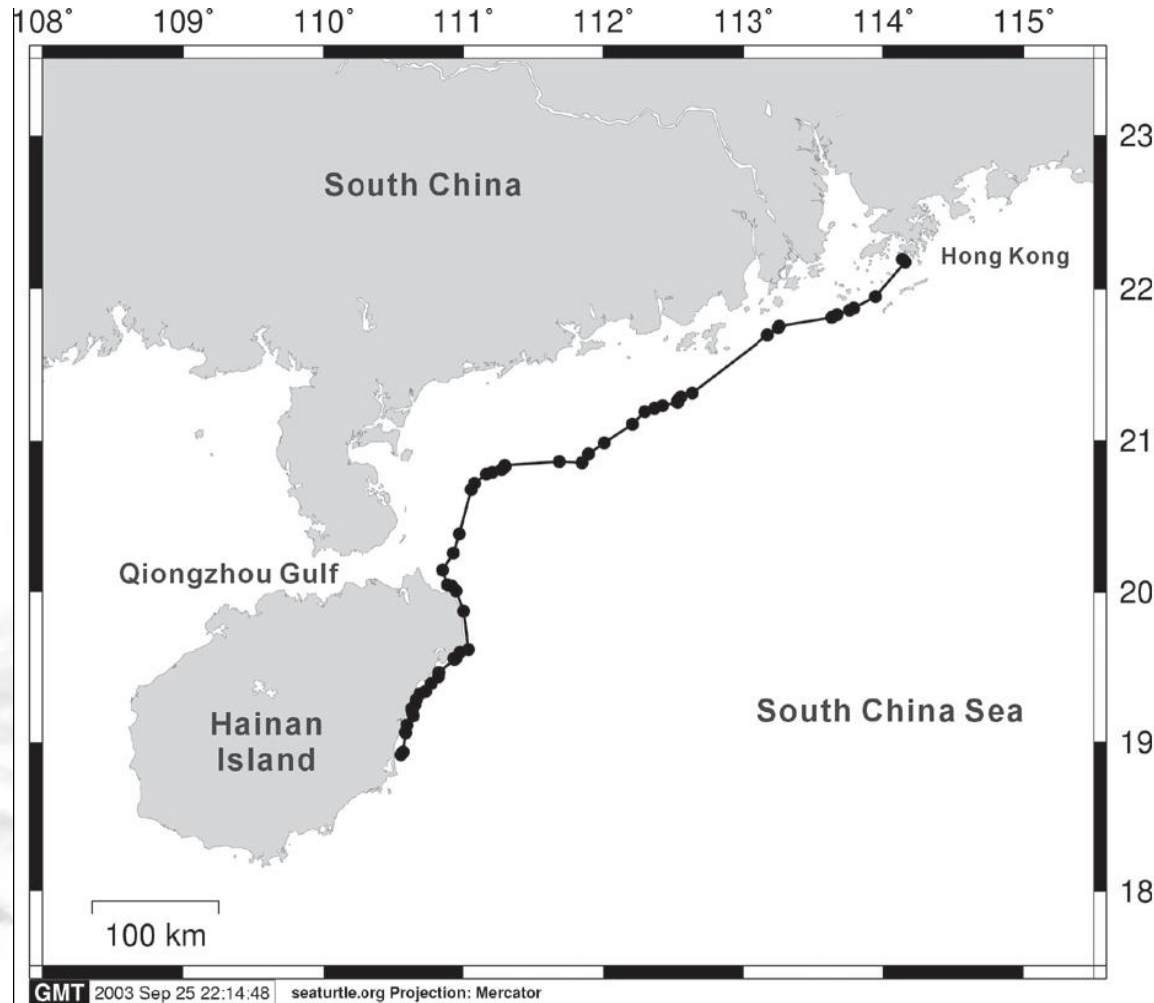
The Kuroshio flow

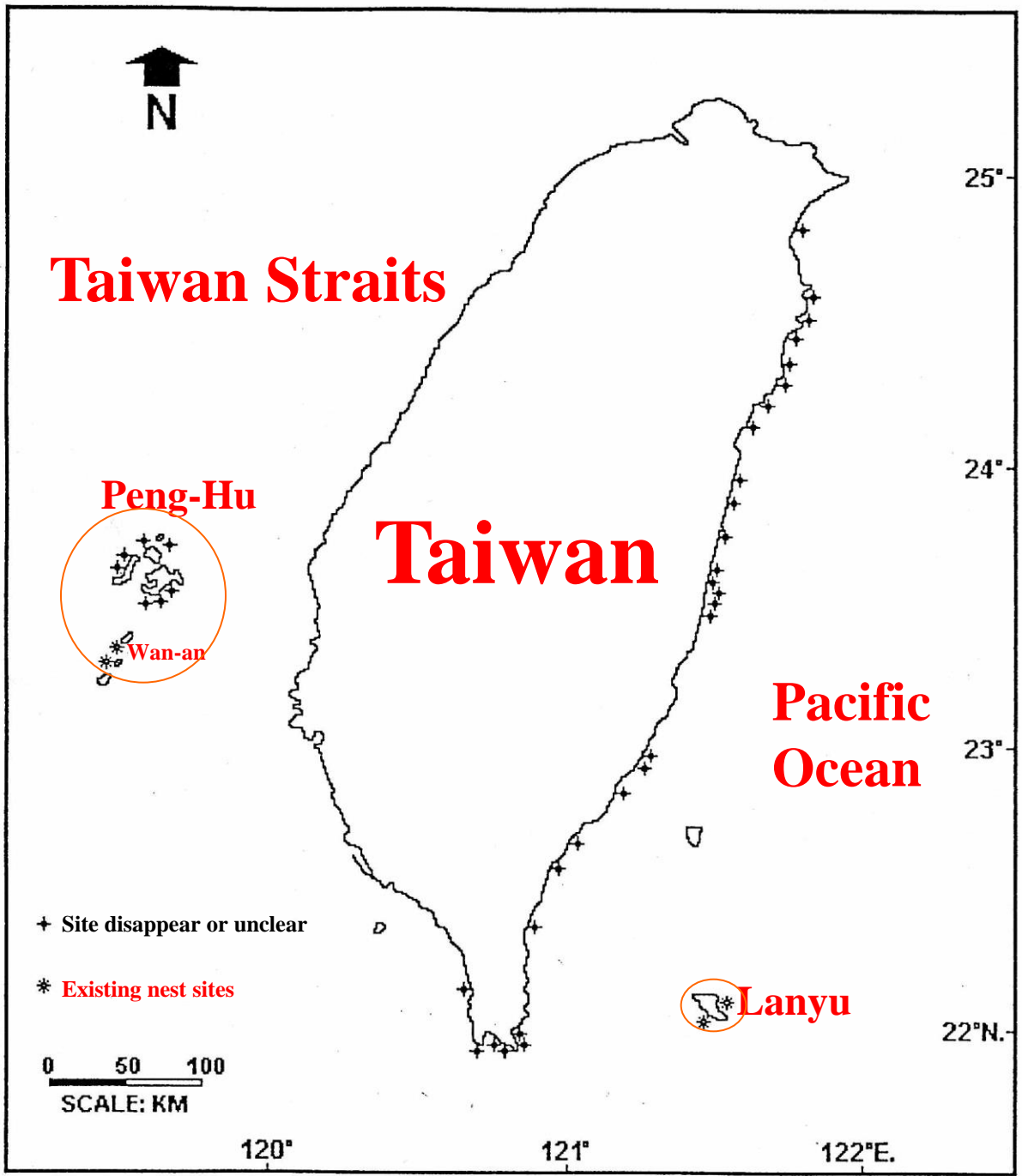


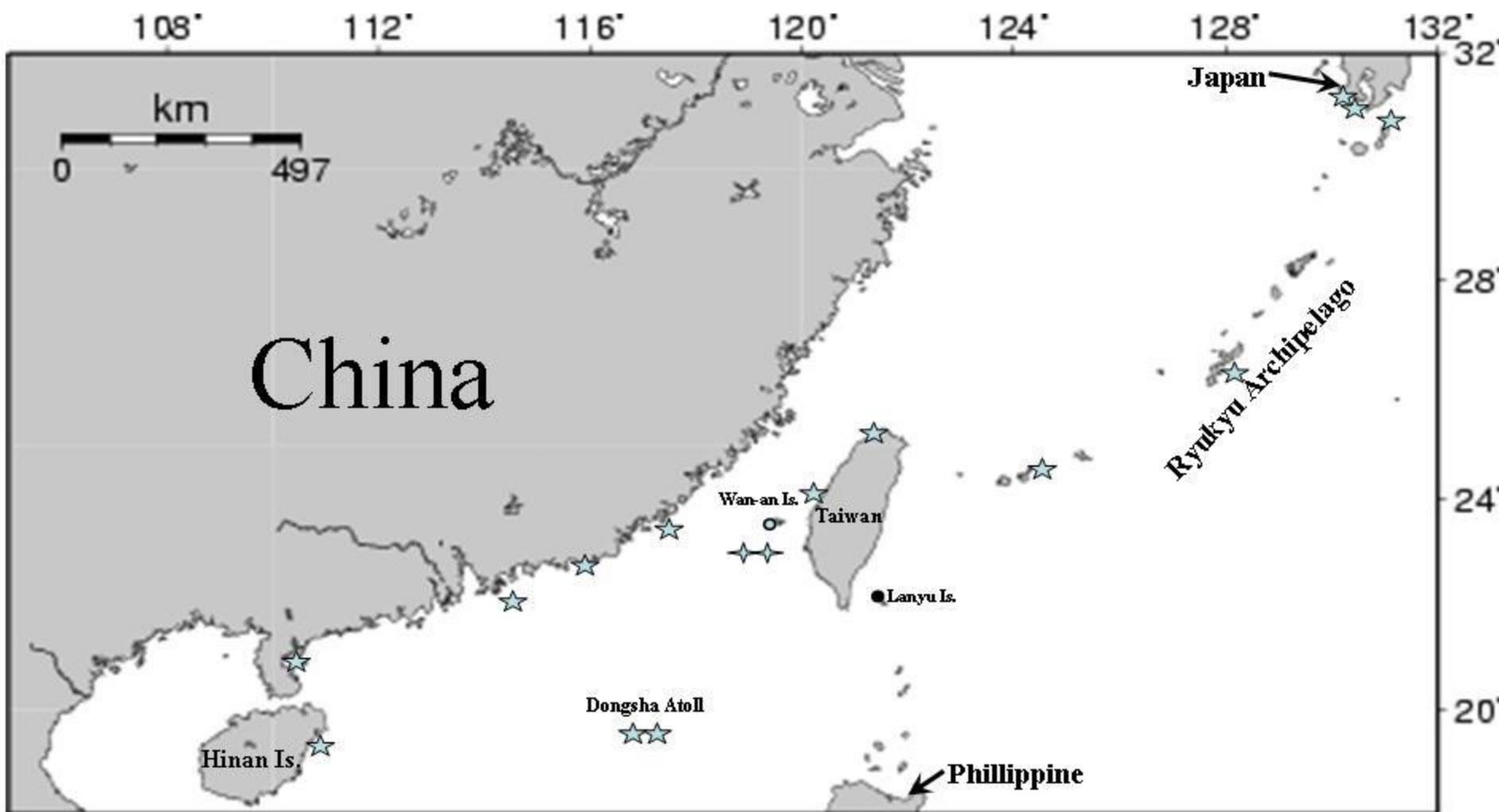
Gangkou7# returned back to nest on the beach for three times in 2004-7-7, 7-20, 8-5

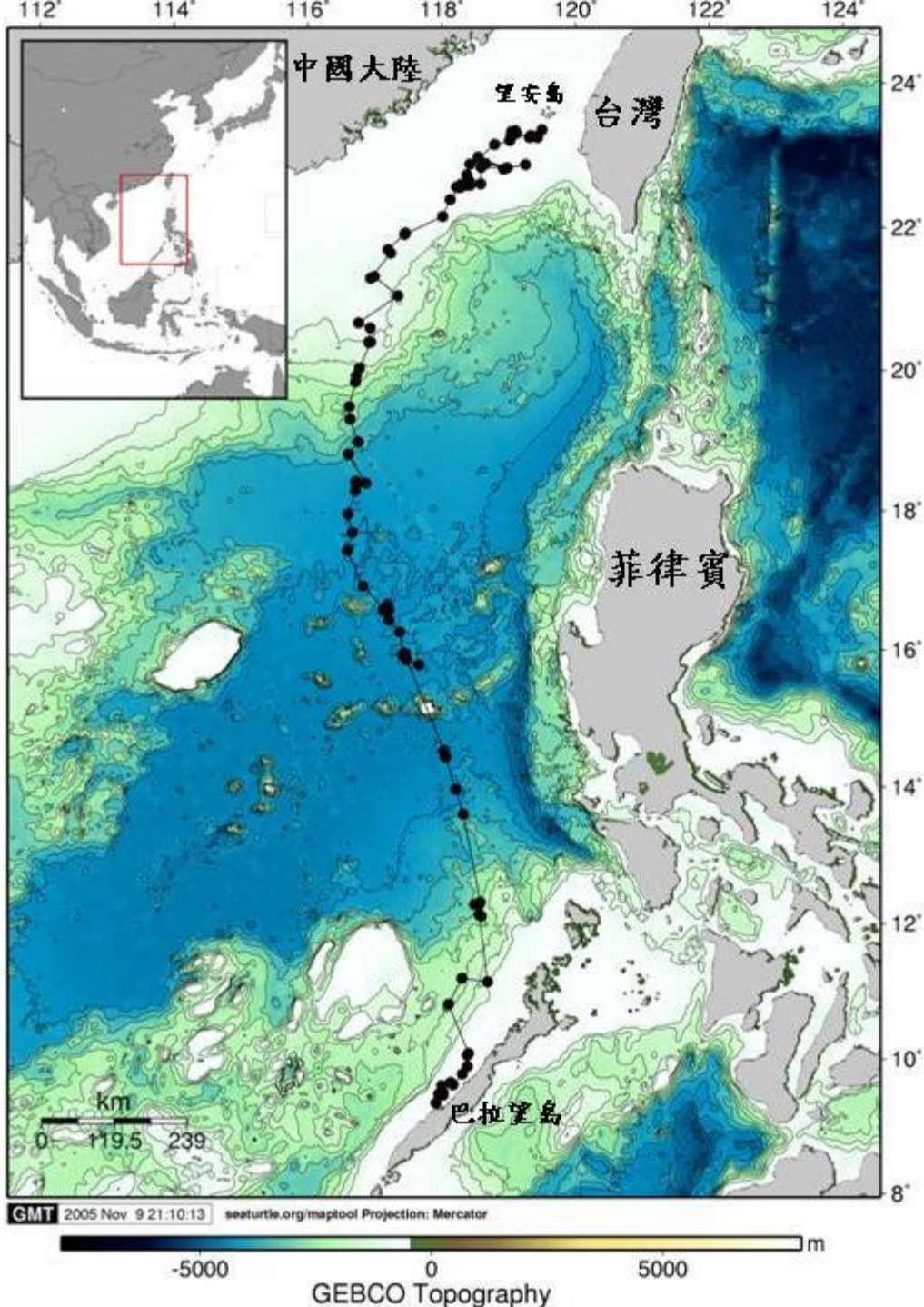


Post-nesting migratory pathway of a green turtle from Nan Ya Island of Hong Kong to its resident foraging ground at the shallow waters of Hainan Island (from **Simon K.F. Chan et al. 2003**)









Post-nesting migratory pathway of a green turtle from Penghu Islands to nearshore waters in mid-Palawan Island in summer 2005 (from Chen, 2006)



The junction sea area of Guangdong, Fujian and Taiwan provinces is a key transit center for the important migratory species of sea turtle!

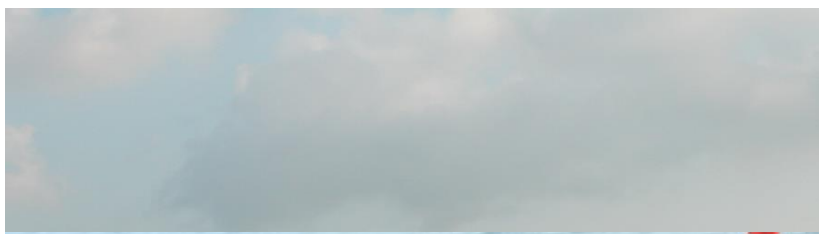
• 现状和问题 **Status and problems**

近20多年来，海龟在索饵、栖息、洄游等方面面临各种威胁。根据基线调查初步分析，该海域面临的主要威胁因子是：

However, sea turtle is facing multiple threats during feeding, habitation and migration in the recent 20 year. According to the preliminary analysis of baseline survey, the main threats in this area are:

- (1) 过度捕捞、误捕和兼捕 **Over-fishing, mis-catch and by-catch.**
- (2) 高密度水产养殖 **Intensive aquaculture.**
- (3) 环境污染，分为陆源污染和海上污染 **Environmental pollution, including land source pollution and marine pollution.**
- (4) 海洋和海岸工程建设 **Offshore and coastal engineering works.**
- (5) 滨海旅游。 **Coastal tourism.** Coastal tourism would increase the pressure on the ecology of island and near shore fishing, and the construction tourism facilities would give influence to the coastal environment, particularly to the habitats of protected marine wild animals.
- (6) 省际合作机制有待进一步加强 **Provincial cooperation mechanism needs improvement.**





➤ In order to protect the important and rare species of sea turtle, GEF, UNDP and SOA started the “Management in the Coastal Area of China’s South Sea” program and established a Dongshan-Nan’ao program demonstration sites at the junction sea area in 2005.



- Having developed the “Inter-provincial action program on marine biodiversity conservation in Dongshan-Nan’ao area”, and achieved the approval of Guangdong and Fujian ocean and fisheries administration.
- Overfishing is under effective control, and fishery resources conservation is getting more and more strengthened.



summer cease-fishing policy, non-fishing zone and non-fishing period



fishermen relocation



reef construction

➤ Having organized and participated various of training and propaganda for fishermen, which reduced the fishing pressure in the demo area, and significant upgrade the public awareness and participation in biodiversity conservation.

From 2010-2011, as many as 83 rescue actions were made in the demo area, 136 turtles were rescued.



The future research works and **possible Cooperation with NOAA**

- ❑ Research on artificial breeding of sea turtles
- ❑ Disease control of the main sea turtle
- ❑ Contaminants (POPs, HM and oil etc.) in sea turtle and their eggs
- ❑ Enrich the baseline information on the migration passage and key habitats distribution of post-nesting and juvenile sea turtle's through the tracking, tag marking and releasing technology
- ❑ Developing the sea turtle protection and management system based on the GIS.
- ❑ The impact of climate change on the spawning migration of sea turtles
- ❑ Strengthening international communication and collaboration

Thanks for your attention!

