

Exciting Observations of Numerous Green Turtles Foraging in Coastal Waters of Liuqiu Island, Taiwan

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January 2013

In October 2011 we attended a sea turtle stranding workshop in Taiwan. After this informative and enjoyable meeting of turtle specialists, our colleague Prof. I-Jiunn Cheng kindly invited several of us to visit Liuqiu Island (Latitude 22° 20' 19.12''N, Longitude 120°22'11.34''E) (in Chinese 小琉球) of Pingtung County in Taiwan (See maps 1-3 attached). A 20-minute ferry boat ride 15km off the west coast of Taiwan, the island is only 6.8 km<sup>2</sup> with coral and rock fringing reefs, clear water, several sandy beaches and three boat harbors. With a human population of about 12,000, local residents make their living primarily by distant-water fishing and tourism from Taiwan. The island is famous for its rich Tao and Buddhist temple culture.

In November 2012 we returned to the Liuqiu Island again for cultural respect for the Liuqiu Wangye Worshipping Ceremony (迎王平安祭典) only held every 3 years. For several days a large beautifully constructed replica of a boat is transported for worship by hand around the island along with the Palanquin of Wangye. Using tons of 'paper money' the boat is then set on fire on the beach and entirely burned to ashes.

Two of our friends, local conservationists Tien and Sophia at the Ocean Blue Hostel led us to the cliff at the spot “Camping Area”, in the north of Liuqiu Island, to observe foraging green turtles in the late afternoon on 8 November 2012. During the observation from the cliff, seven green turtles were found foraging on the algal mats grown on the limestone in the shallow waters of approximately 1 metre deep. Among the seven turtles, four were adults including 2 females and 2 males, while the other three were juvenile green turtles, which seemingly positioned themselves in deeper water farther away from the shore.

In the afternoon (2-4pm) on 9 November 2012, we snorkeled a short segment of the coastal waters of the island with the local conservationists Tien and Jian-wei. The journey started from “Beauty Cave” ending at “Vase Rock”, north of the Island, spanning for some 800m to 1km in total distance. During the snorkelling trip, an amazing 40 or more green turtles were observed vigorously foraging on algal mats that abundantly thrived on limestone flat rocks in shallow waters extending seaward from the cliffs. These turtles ranged from 30cm to over 100cm in carapace length, with over 50% being post-pelagic juveniles to juveniles while all others were nearly mature adults. These foraging green turtles were good in body shape and healthy during the underwater observations. They were generally tolerant to our presence at an approximate distance of 5 metres. One turtle had a fishing line entangled at the base of its left forelimb. Efforts to rescue it for disentanglement were unsuccessful. Of

interesting note is that we encountered a large female green turtle with a blue plastic tag attached at the midway of its right forelimb. The tag was overgrown with algae so any inscriptions on the tag could not be obtained. The same turtle has been observed residing in the area for at least three years, as advised by the local conservationists.

We are sincerely thankful for the hospitality and friendship of Tien, Sophia and Jian-wei, and all the other wonderful people met at Liuqiu.

Except in the Hawaiian Islands we have never seen so many green turtles foraging in such a short length of coastline. We plan to visit Liuqiu Island again soon to snorkel, enjoy, and learn about green turtles feeding at other coastal locations. The following images, some kindly provided by Tien, Sophia and Jian-wen, give views of the wonderful experiences we had at Liuqiu involving green turtles, local people, and their rich culture.

在台灣小琉球沿岸觀賞綠海龜覓食

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編寫於2013年1月

在2011年10月，我們參加了在台灣舉辦的海龜援救及解剖工作坊，與各海龜保育者及研究員交流。在那愉快的會議後，我們的同事程一駿教授邀請我們幾個遊覽位於屏東縣的小琉球島（北緯22°20'19.12 "N，東經120°22'110.34" E）（見附圖1至3）。經過20分鐘的渡輪，我們到達這美麗小島。小琉球距離台灣西海岸約15公里，面積只有6.8平方公里，沿岸有岩石及珊瑚礁，海水清澈，有數個海灘和三個港口。島上人口約1.2萬，居民主要以遠洋漁業和旅遊業營生。該島以其豐富的道教和佛教寺院文化著名。

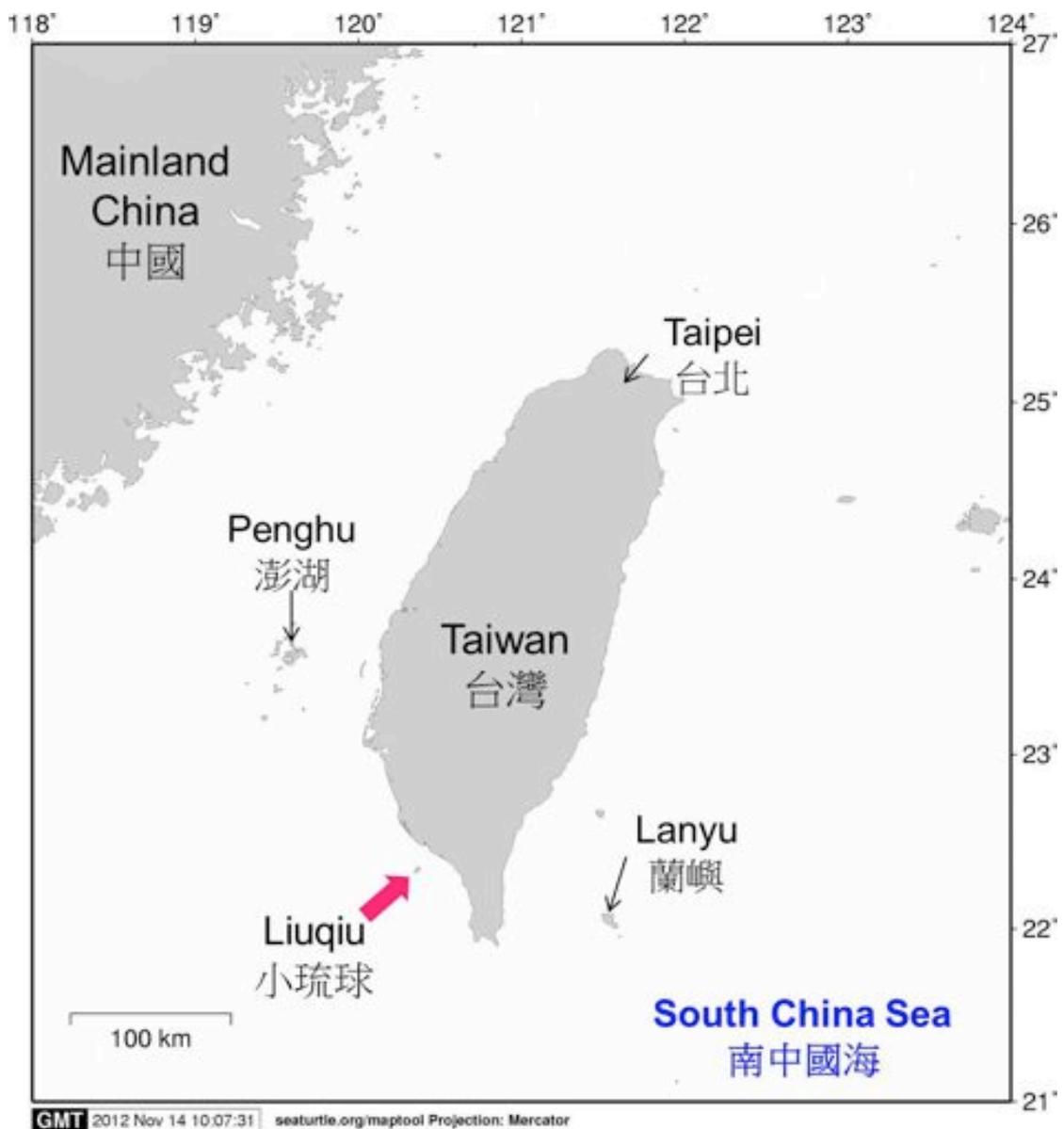
於2012年11月，我們再次返回小琉球島，參與每3年只舉行一次的迎王平安祭典，感受並尊重當地文化。祭典的期間，島上居民抬著一座宏大而精美、人手建造木製的王爺船，隨著王爺的神轎環島遊行。最後王爺船被安置在沙灘上用數噸“紙幣”堆成的山上，用火燒至灰燼，煙火亦徐徐升上夜空。

我們的兩位朋友阿添和靜儒，是當地的環境保育者及民宿“大海的家”的老闆。在11月8日的下午，他們領著我們到小島北部的景點“露營區”的懸崖邊，觀察覓食的綠海龜。期間發現7隻綠海龜，牠們在約1米多深的淺水水域進食生長在石灰石上的海藻：當中4隻是成年綠海龜，包括2隻雌性及2隻雄性；另外3隻是少年綠海龜，定位在離岸較遠較深的水域。

於11月9日下午（約2至4點），我們在當地的環境保育者阿添和建偉的帶領下，在沿岸水域浮潛，從小島北部的景點“美人洞”出發，游至“花瓶石”，全長約800米至1公里。在浮潛期間，我們驚喜地觀察到至少40隻綠海龜活躍地在淺水域覓食，生長在從懸崖上向海延伸平坦的石灰石上茂盛的海藻墊。這些海龜的背甲長度約30至超過100厘米，50%以上是剛從遠洋到近岸棲息的少年綠海龜，其他是接近成年的綠海龜。這些綠海龜體形和健康良好，我們與牠們保持約5米的距離，對我們的存在不大理會。一隻綠海龜左前肢的基部有漁線纏繞，我們曾努力嘗試援救該海龜，為牠解纏，但不成功。有趣的是，我們遇上一隻大的雌性綠海龜，其右前肢的中間位置附有一個藍色的塑料標籤，標籤長滿藻類，因此無法獲得任何標籤上的資料。根據阿添和建偉的觀察，該隻雌性綠海龜在該地區居住至少3年。

我們衷心感謝阿添、靜儒和建偉的熱情照顧和友誼，和所有我們在小琉球認識的朋友們。

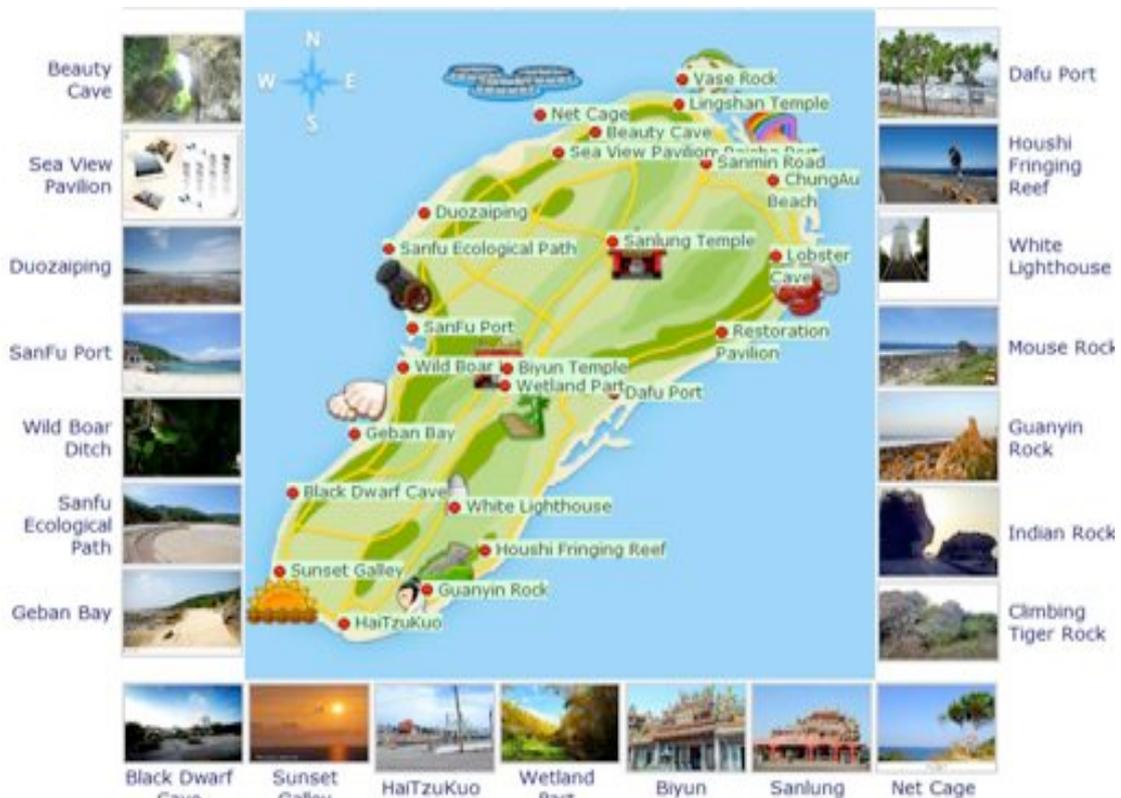
除夏威夷群島外，我們從來沒有在這短短的海岸線上見到這麼多的綠海龜覓食。我們計劃很快再到小琉球浮潛，欣賞並了解綠海龜在其他沿海地方覓食的情況。以下圖片記錄我們在小琉球的美好難忘經歷，包括當地的人民、他們豐富的文化及綠海龜。部分相片由阿添、靜儒和建偉提供。請大家細心欣賞感受。



Map 1 showing the location of Liuqiu Island, Taiwan地圖顯示台灣小琉球島的位置  
(Source 來源: SEATURTLE ORG Maptool. SEATURTLE.ORG, Inc.  
<http://www.seaturtle.org/maptool/>)



Map 2 showing the location of Liuqiu Island, Taiwan 台灣小琉球島的位置 (Source來源: Google Map)



Map 3 showing the scenic spots of Liuqiu Island, Taiwan 台灣小琉球島的風景名勝區 (Source來源: [http://liuqiu.pthg.gov.tw/liuqiu/web\\_en.php?prog=travel](http://liuqiu.pthg.gov.tw/liuqiu/web_en.php?prog=travel))



Picture 1. Palanquin of Wangye carried by the locals on Liuqiu Island

圖1. 島上居民抬著王爺的神轎環島遊行



Picture 2. George H. BALAZS and Connie Ka-yan NG with the Wangye boat

圖2. 佐治伯樂滋及伍家恩與王爺船合照



Picture 3. Local people carried the Wangye boat around Liuqiu

圖3. 島上居民抬著王爺船環島遊行



Picture 4. George H. BALAZS and Connie Ka-yan NG followed the parade

圖4. 佐治伯樂滋及伍家恩跟隨隊伍環島遊行



Picture 5. George H. BALAZS carried the Wangye boat with the locals

圖5. 佐治伯樂滋跟隨島上居民抬王爺船



Picture 6. Wangye boat stationed in one of the local temples

圖6. 王爺船停放於當地其中一間寺廟“碧雲寺”



Picture 7. Burning of the Wangye boat with paper money

圖7. 火燒王爺船及紙幣



Picture 8. Burning of the Wangye boat with paper money

圖8. 火燒王爺船及紙幣



Picture 9. Burning of the Wangye boat with paper money

圖9. 火燒王爺船及紙幣



Picture 10. Camping Area, north of Liugu Island

圖10. 小琉球北部的景點“露營區”



Picture 11. Two foraging green turtles in coastal waters of Camping Area

圖11. 於“露營區”淺水水域覓食的兩隻綠海龜



Picture 12. Sophia, Ka-yan and Tien (from left to right) at Camping Area

圖12. 靜儒、家恩及阿添(由左至右)在“露營區”



Picture 13. George, Tien and Ka-yan at “Beauty Cave”, start of the snorkeling trip  
圖13. 佐治、阿添和家恩在“美人洞”出發浮潛



Picture 14. George, Tien and Ka-yan at “Beauty Cave”, start of the snorkeling trip  
圖14. 佐治、阿添和家恩在“美人洞”出發浮潛



Picture 15. George when snorkeling

圖15. 浮潛中的佐治



Picture 16. George closely observed the spot on the algal mat where the turtle foraged

圖16. 佐治密切觀察綠海龜及其進食的海藻



Picture 17. George when snorkeling

圖17. 浮潛中的佐治



Picture 18. George picked up some algae fed by green turtles when snorkeling

圖18. 佐治在浮潛時採下綠海龜進食的海藻



Picture 19. Foraging green turtles

圖19. 覓食中的綠海龜



Picture 20. Connie Ka-yan when snorkeling

圖20. 浮潛中的家恩



Picture 21. Ka-yan, Tien and George (from left to right) when snorkeling  
圖21. 浮潛中的家恩、阿添和佐治 (由左至右)



Picture 22. A blue plastic tag, with algae overgrown, on the right forelimb of a large female green turtle  
圖22. 雌性綠海龜右前肢附有一個長滿藻類的藍色塑料標籤



Picture 23. George, Ka-yan and Tien (from left to right) at Vase Rock, end of the snorkeling trip  
圖23. 佐治、家恩和阿添 (由左至右) 在花瓶石，浮潛圓滿結束



Picture 24. Jian-wen, George and Ka-yan (from left to right) at Vase Rock, end of the snorkeling trip  
圖24. 建偉、佐治和家恩 (由左至右) 在花瓶石，浮潛圓滿結束



Picture 25. Amazingly beautiful sunset and a group of teenage girls on Liuqiu Island

圖25. 一群少女於小琉球岸邊欣賞璀璨的日落