

Imagination is More Important than Knowledge

**Visions of Sustainability for People
and Turtles in East Asia**

**George Balazs
Regional Vice Chair
IUCN SSC MTSG Oceania**

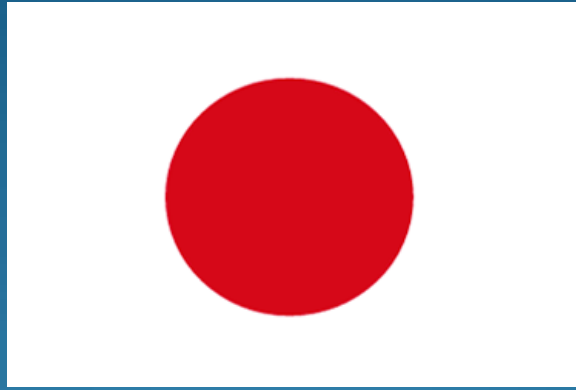
想像力比知識更重要



MTSG East Asia Region



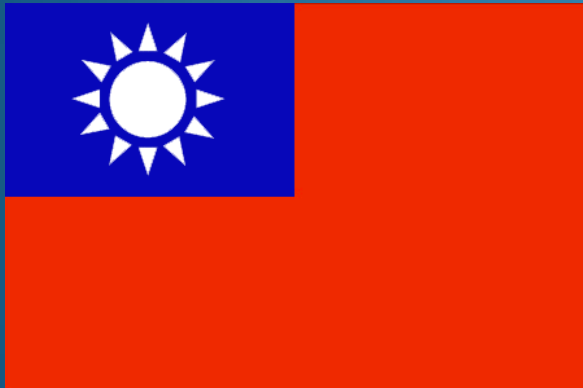
People's Republic of China
1.3 Billion



Japan
128 Million



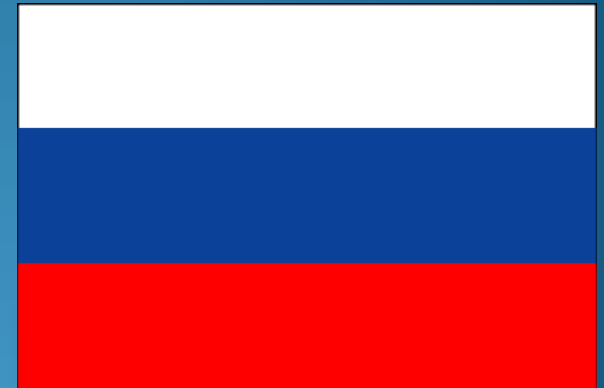
South Korea
50 Million



Taiwan
23 Million



North Korea
25 Million



Russia
Primorye Maritime Territory
2 Million



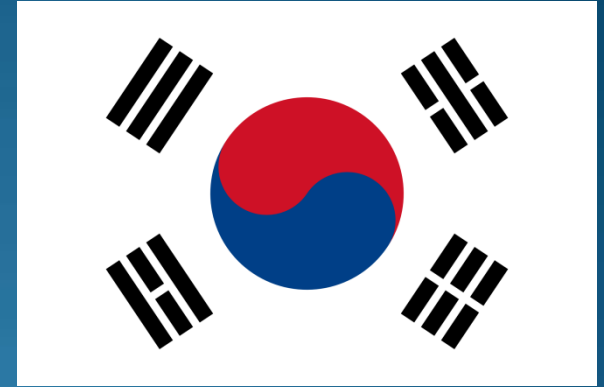
Coastline



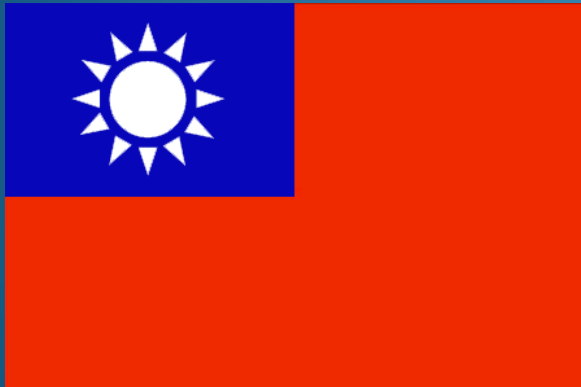
People's Republic of China
14,500 km



Japan
29,800 km



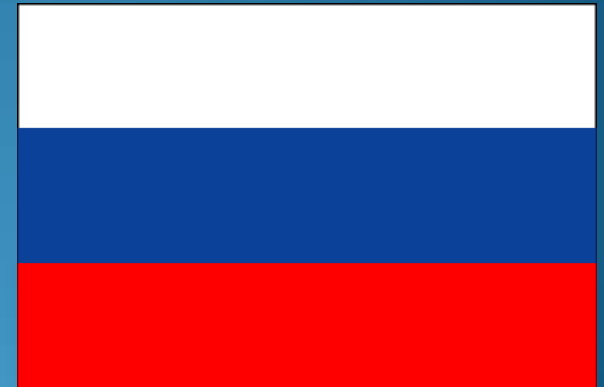
South Korea
2,400 km



Taiwan
1,600 km

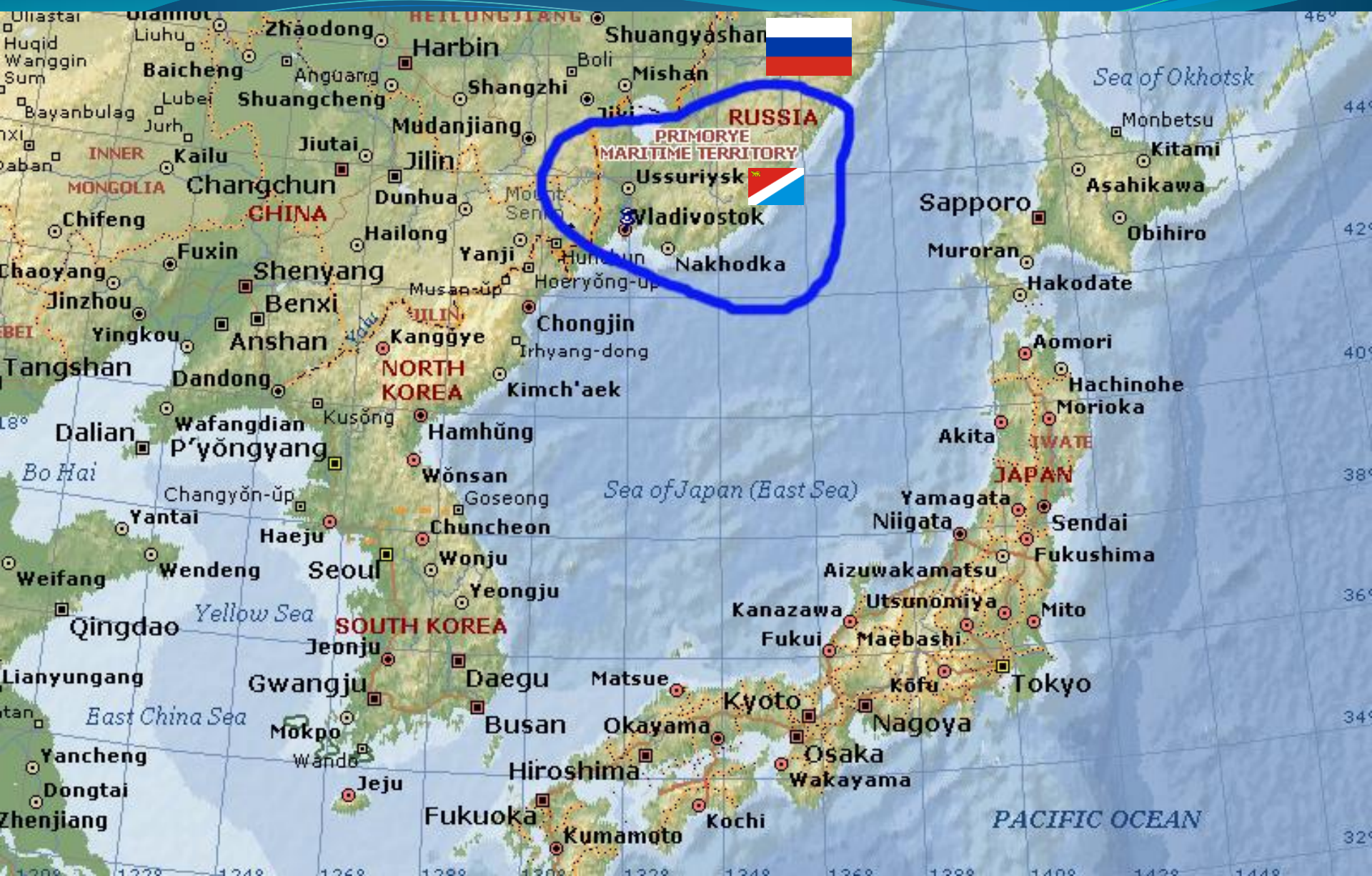


North Korea
2,500 km

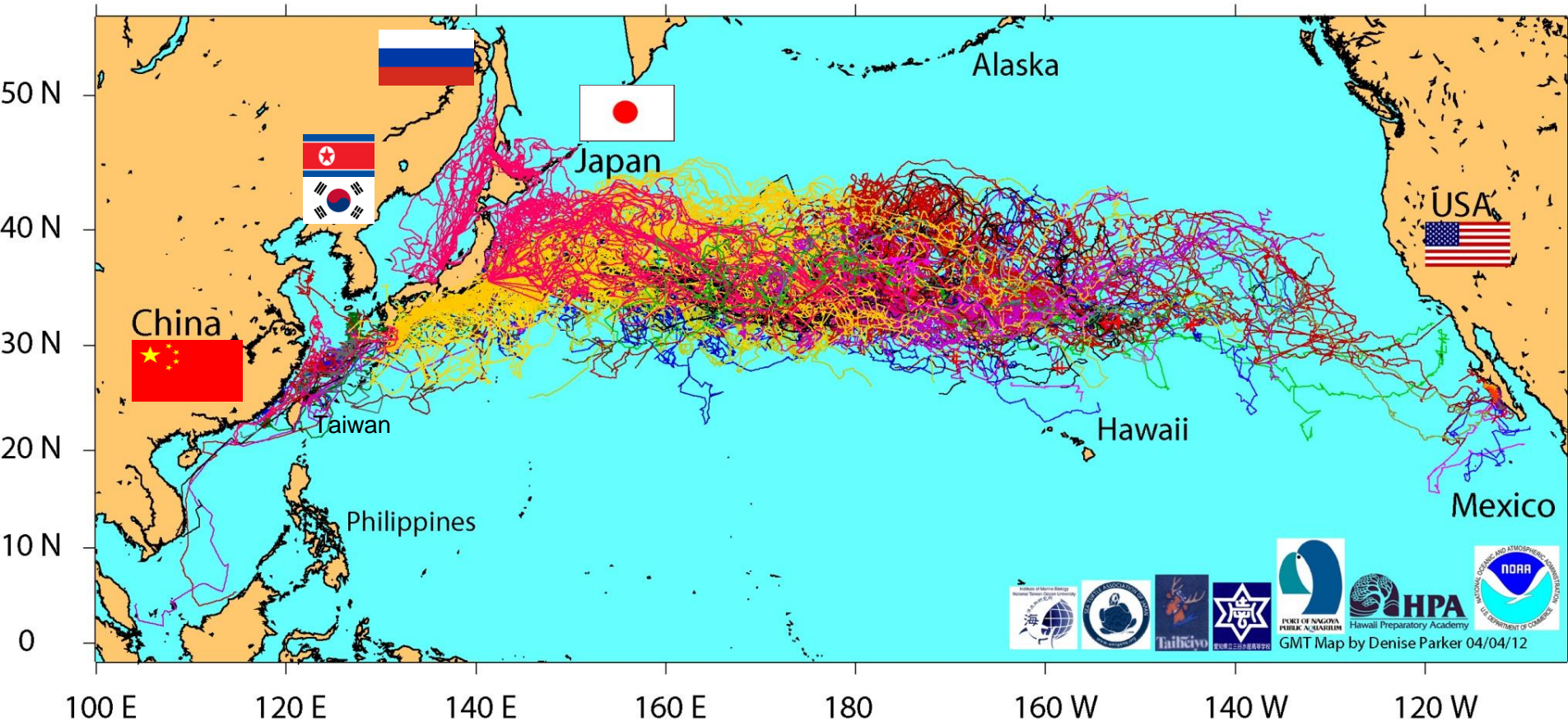


Russia
Primorye Maritime Territory
1,400 km





1997-2012 Satellite Tracking of Pelagic North Pacific Loggerheads





Miniature satellite tags



「いしかり」フェリー・オブ・ザ・イヤー
2012-2013 11年連続受賞

おかげさまで「いしかり」は、
船旅専門誌「クルーズ」の
「読者が選ぶフェリー・オブ・
ザ・イヤー」を11年連続受賞

NAGOYA

SENDAI

TOMAKOMAI

名古屋 ≧ 仙台 ≧ 苫小牧

TOMAKOMAI

ゆとり・優雅・安い船旅

SENDAI

NAGOYA



運賃

平成15年4月1日～7月17日 / 8月25日～平成16年3月31日

ご予約は2ヶ月前から

名古屋

隔日運航	翌日
20:00発	17:00着
翌日	隔日運航
09:20着	12:20発

仙台

毎日運航	翌日
20:00発	10:45着
翌日	毎日運航
09:20着	19:00発

苫小牧







TurtleWatch: a tool to aid in the bycatch reduction of loggerhead turtles *Caretta caretta* in the Hawaii-based pelagic longline fishery

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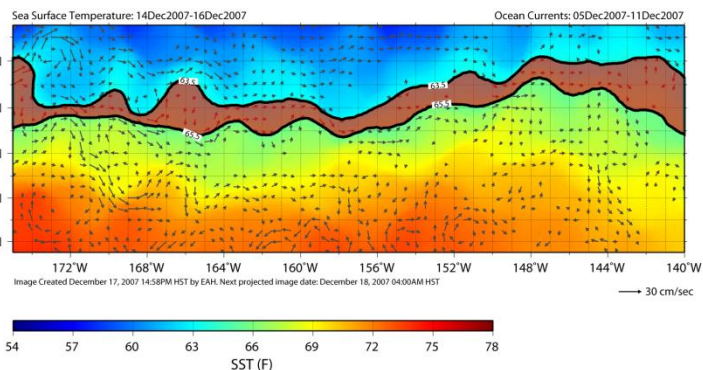
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EXPERIMENTAL PRODUCT

avoid fishing between solid black 63.5°F and 65.5°F lines to reduce turtle interactions



PACIFIC ISLANDS FISHERIES SCIENCE CENTER
ECOSYSTEMS AND OCEANOGRAPHY DIVISION
2570 Dole Street, Honolulu, HI 96822
http://www.pifsc.noaa.gov/eod/turtlewatch.php
contact: turtlewatch@noaa.gov

Data provided by Central Pacific CoastWatch node

TURTLEWATCH



ABSTRACT: Operational longline fishery characteristics, bycatch information, and loggerhead turtle satellite tracks were all used in conjunction with remotely sensed sea surface temperature data to identify the environmental area where the majority of loggerhead turtle bycatch occurred in the Hawaii-based longline fishery during 1994 to 2006. In the first quarter of each calendar year from 1994 to 2006, the majority of shallow longline sets and associated loggerhead turtle bycatch were above 28° N, which corresponds to the area near the North Pacific Subtropical Frontal Zone. Based on the thermal ranges of bycatch, sets and the satellite-tagged turtles, it was recommended that shallow sets should only be deployed in waters south of the 18.5°C (~65.5°F) isotherm to decrease loggerhead turtle bycatch. This recommendation formed the basis for the TurtleWatch tool, a map providing up-to-date information about the thermal habitat of loggerhead sea turtles in the Pacific Ocean north of the Hawaiian Islands. TurtleWatch was released to fishers and managers in electronic and paper formats on December 26, 2006, to assist in decision making during the first quarter of 2007. Fishery information from 2007 was later compared with data for the years 2005 to 2006 to assess the response of the fishery to TurtleWatch. The observed fleet movement during the first quarter of 2007 was to the north of the 18.5°C (~65.5°F) isotherm (i.e. in the area recommended for avoidance by the TurtleWatch product) with increased effort and lower bycatch rates. We discuss possible reasons for this decrease in turtle bycatch north of the frontal zone together with future research directions which may lead to refinement of the TurtleWatch product.

KEY WORDS: Loggerhead turtles · Bycatch · Remote-sensing · Sea surface temperature · Longline fishery · Transition zone · Swordfish

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INTRODUCTION

The interactions of sea turtles with high seas fisheries are a global concern, with fisheries bycatch implicated as one of several factors in the population decline of many sea turtle species, including the loggerhead turtle *Caretta caretta* (Hatase et al. 2002, Hays et al. 2003, Peckham et al. 2007). The loggerhead is a circumglobal sea turtle species (Dodd 1988) that undergoes a series of ontogenetic shifts during its life cycle, with stages occupying a series of habitats that

include nesting beach, oceanic, and neritic areas (Bjorndal 2003). In the North Pacific, loggerhead nesting beaches are only found in Japan, where, during the last half of the 20th century a substantial decline (50 to 90%) in the size of the annual loggerhead nesting population at nesting beaches was reported (Kamezaki et al. 2003). The importance of the oceanic stage to juvenile loggerheads was hypothesized first by Carr (1987) with recent work by Polovina et al. (2006) reporting that specific pelagic regions, such as the Kuroshio Extension Bifurcation Region of the North

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FINAL MAP:

2002-2003 Movement of pound net by-catch male loggerhead turtle, 22168

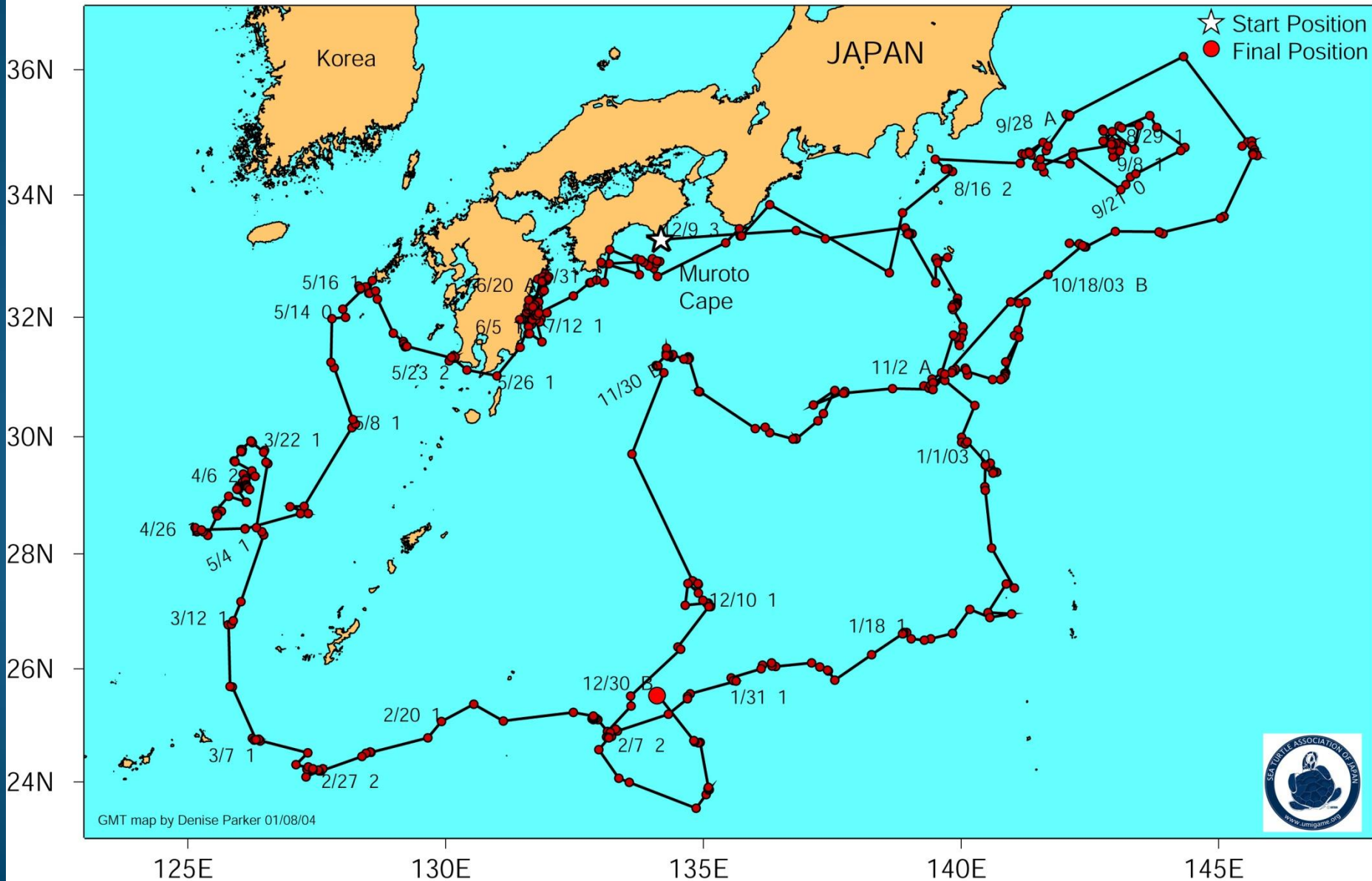
ST-18 Duty Cycle: 12/48 SCL: 76.5 cm

from Kochi Prefecture, Shikoku, Japan

Days transmitting: 386 days

Date Released: 12/9/2002

Distance traveled: 11,333 km



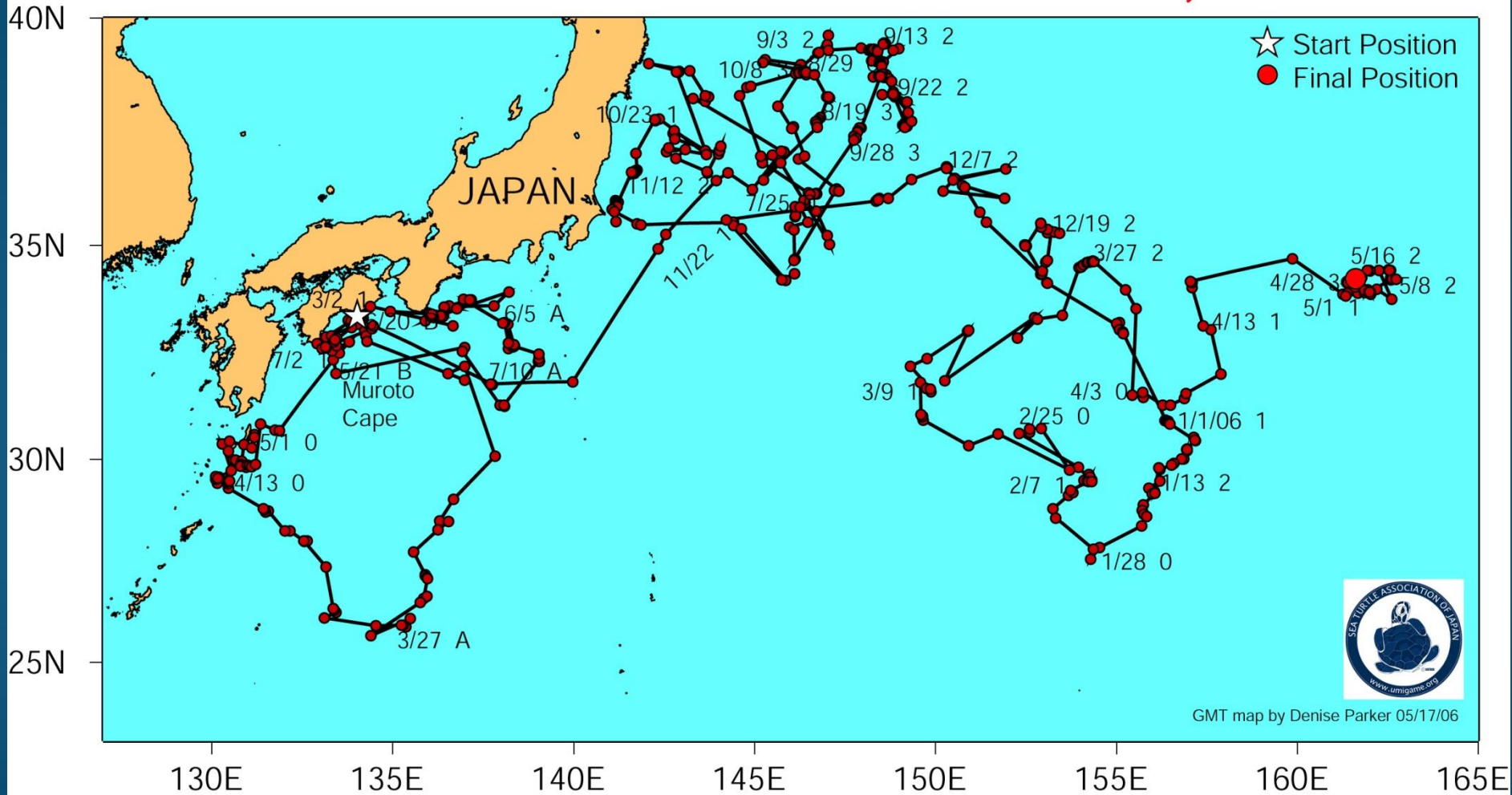
FINAL MAP:

2005-2006 Movement of pound net by-catch loggerhead, ID 22270

ST-18 Duty Cycle: 12/48 SCL: 70.9 cm

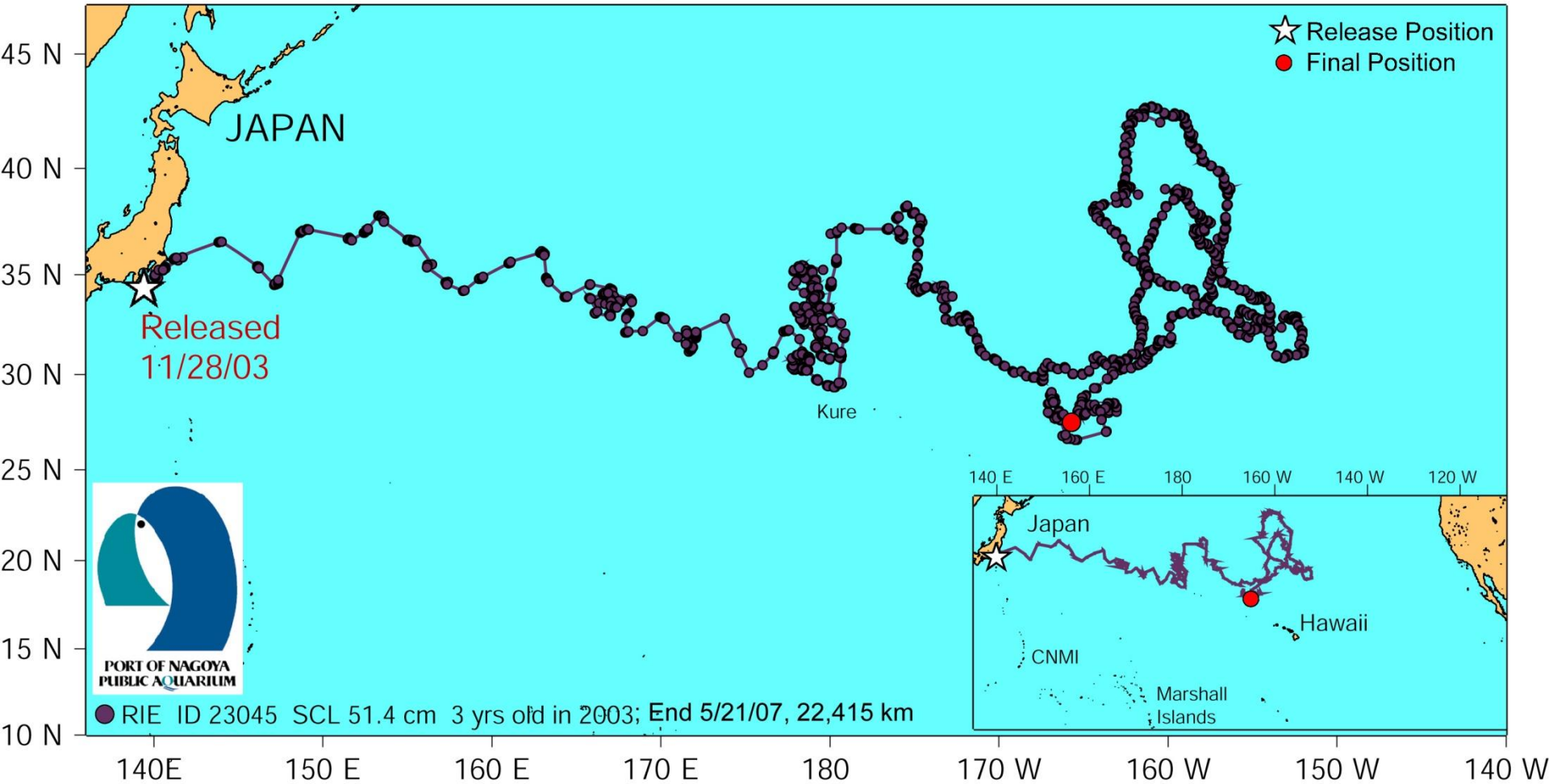
from Cape Muroto, Kochi Prefecture, Shikoku Japan **Days transmitting: 440**

Date Released 3/2/2005 **Distance traveled: 17,659 km**



FINAL MAP:

2003-2007 movement of juvenile loggerhead turtle released from the M/V Ishikari
Hatched and raised by the Port of Nagoya Public Aquarium Date Deployed: 11/28/2003
ST-18 transmitter Duty Cycle: 12 hours on, 48 hours off **Days transmitting: 1270 days**
Distance traveled: 22,415 km Mean speed of travel: 0.7 km/hr



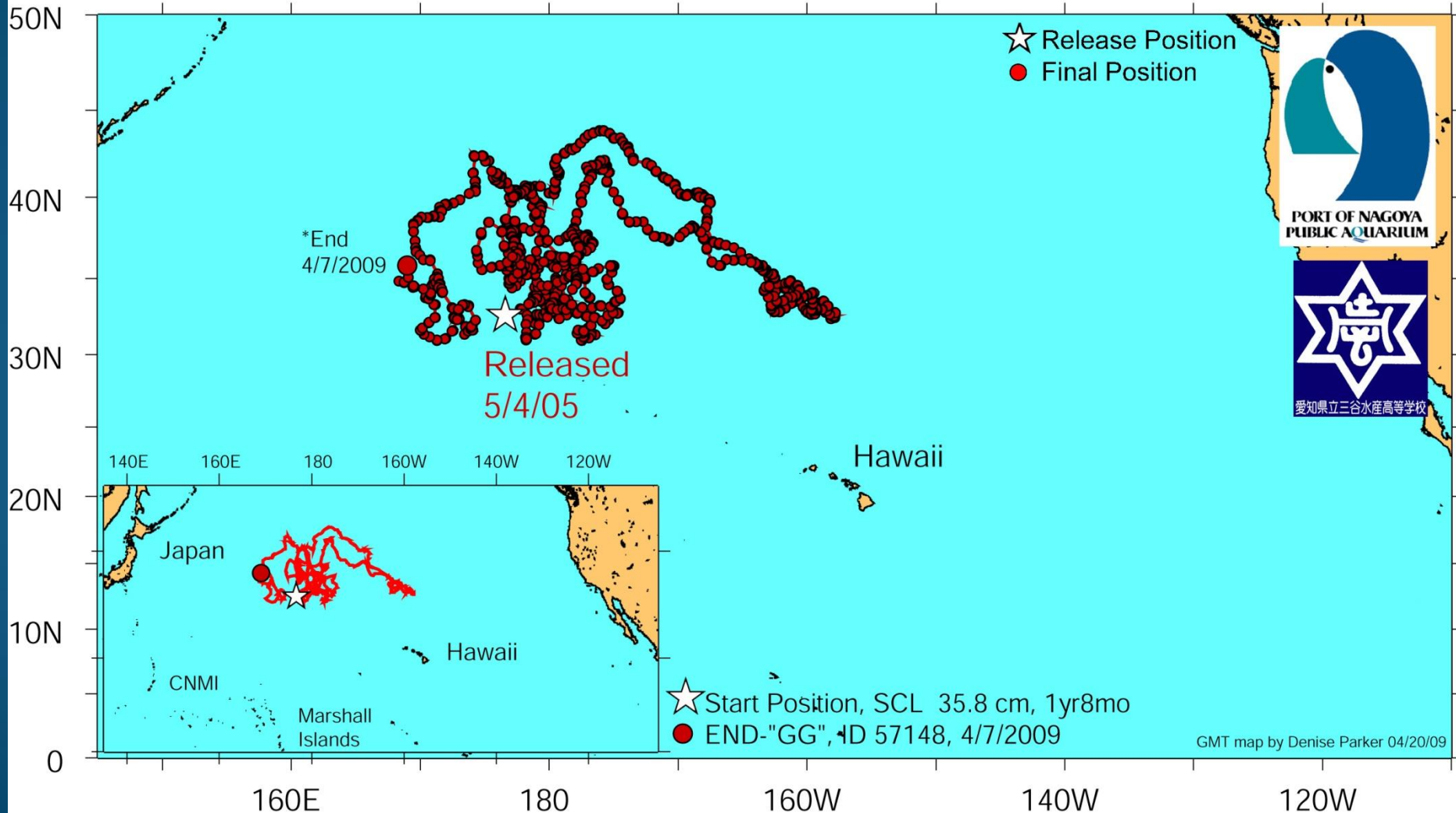
FINAL MAP:

2005-2009 movement of juvenile loggerhead turtle, Argos ID 57148
released from the R/V Aichi Maru Date Deployed: 5/4/2005

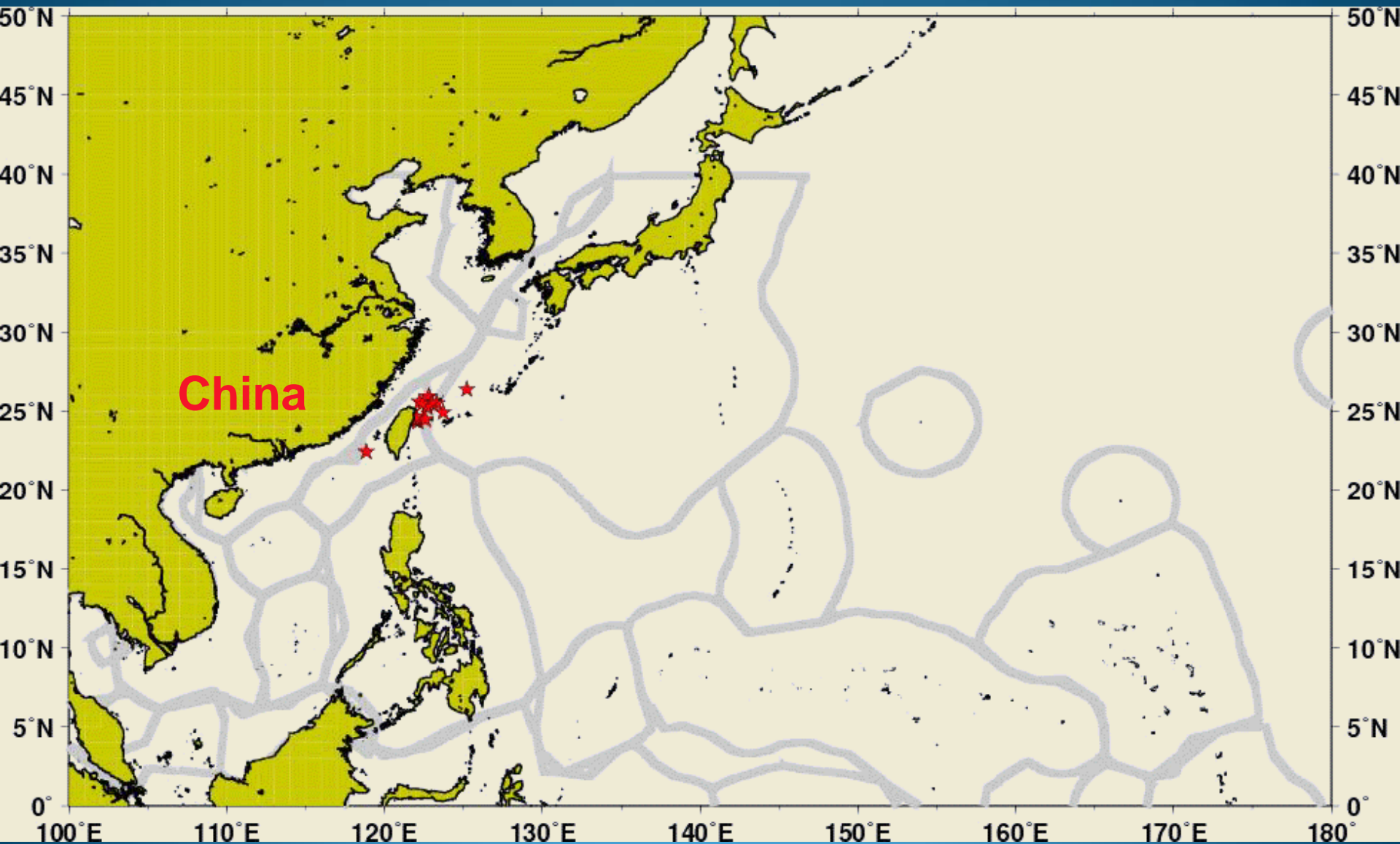
Hatched and raised by the Port of Nagoya Public Aquarium

ST-24 transmitter Duty Cycle: 6 / 48 **Days transmitting: 1434 days (3.9 y)**

Distance traveled: 25,896 km Mean Speed of Travel: 0.7 km/hr

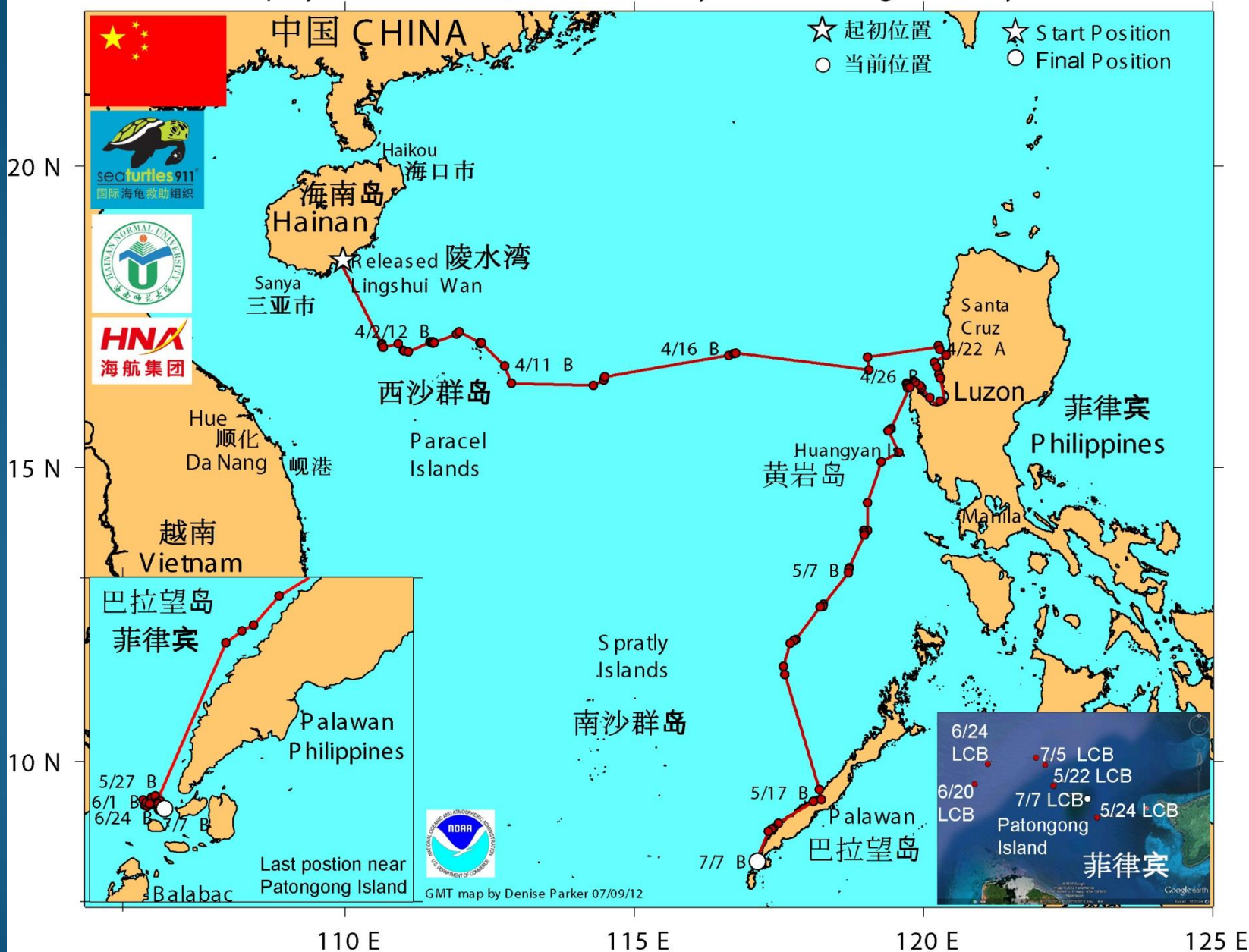


Animation of first 70 days



Last Position 7/7/2012:

2012 movement of adult female green turtle, "Star Blue", ID 53747
released by Sea Turtles 911 TAM-2639 6/24 CCL: 95.5 cm
Deployed: March 26, 2012 Days transmitting: 103 days



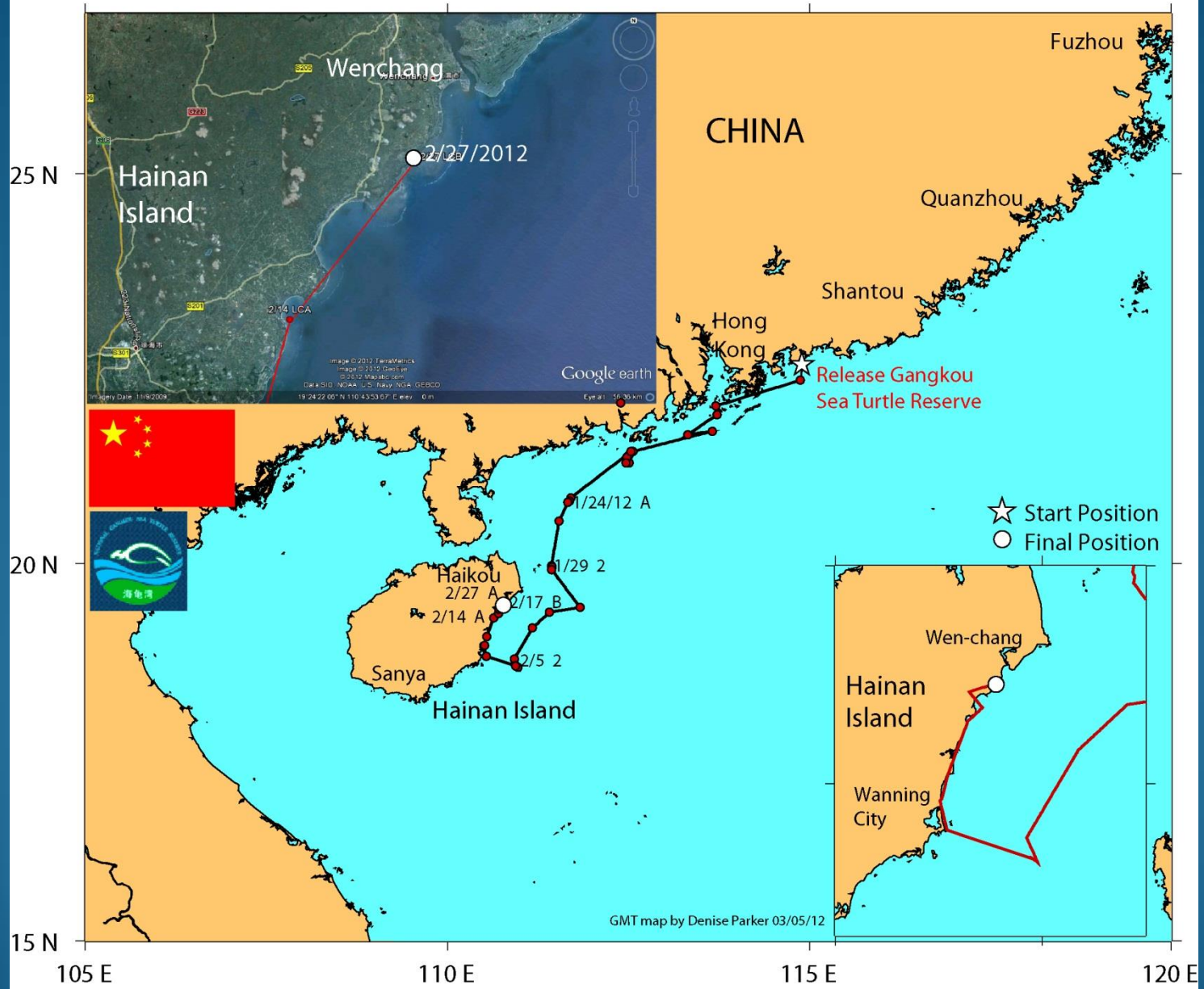
FINAL MAP:

2011-2012 movement of juvenile green turtle, ID 53744

released from Gangkou Sea Turtle Reserve

TAM-2639 6/24 Deployed: 12/21/11 Days transmitting: 68 days

Distance traveled: 949 km Mean speed of travel: 0.6 km/hr





Cultural Considerations in Conservation





「選挙の話はしなから」などと弁明。供応 札をめぐる談合事件で、性があるときめて捜索に踏み切った。福井県警は22日、県内に

時ごろ、同市植田町の路上で、専門学校生の入りのかばんを奪われた。

中国で命拾い、日本で産卵

「食用」寸前僧侶助ける

海ガメはるばる3000キロ

中国・広東省で危うく食用になるところを地元の僧侶に救われ、海に返されたウミガメが今月中旬、小笠原諸島（東京都小笠原村）の父島に上陸し、産卵した。NPO法人エバーラスティング・ネイチャー（本部・横浜市）が運営する小笠原海洋センターが、カメの甲羅に書かれた地名や日付をもとに確認した。放流地とは直線距離で約3千キロ離れており、カメを救った尼僧の釈文敬さん（82）は「カメが日本で無事できることが分かって、とてもうれしい」と話している。

（山本智之）



同センターの山口真名美所長によると、メスのアオウミガメで、甲羅の長さは約90センチ、体重は120キロ余り。父島・二見湾内の砂浜に14日夜、上陸した。翌日も同じ場所に上陸したが、砂が少なく産卵できない浜だったため保護したところ、16日に77個の卵を産んだ。

小笠原では、アオウミガメが漁業の対象になっているが、カメ漁師に捕まることもなかった。甲羅には「広東」「普善庵」「徐聞」などの漢字が赤く彫り込まれていた。山口さんは、知人で北海道大学院に留学中の中国人女性、任敏儀さん（23）に相談した。任さんがインターネットで調べたところ、中国の現地紙「羊城晚報」が今年1月中旬、広東省徐聞県にある普善庵という寺の僧侶がウミガメを助けて海にもどしたという記事を掲載していた。

同紙によると、商人がウミガメをレストランに売ろうとしているのを知った僧侶が45000元（約7万2千円）で買い取り、地名や日付などを甲羅に記して翌日海に放した。朝日新聞が任さんに問い合わせてもらったところ、カメを救ったのは尼僧の釈さんと分かった。寺関係者の話では、同寺はウミガメを何頭も救ってきたが、今回は特別に大きく、みなでお金を集めて買い取り、寺で一晩保護したうえ、海に返した。放流してもウミガメは何回か岸に戻ってきたが、やがて海に消えた。放流地の港では、数百人の群衆が沖へ向かうカメを見守り、お祭り騒ぎだったという。



上「羊城晚報」が報じたウミガメ提供・金羊網（中国のニュースサイト）
下小笠原・父島に上陸したウミガメ。甲羅に彫られた文字が中国で報じられたものと一致したNPO法人エバーラスティング・ネイチャー提供

生き埋め殺人、死刑

大阪地裁 22歳主犯格に判決

判決によると、小林被告は友人で大阪府立大3年だった広畑智規（22）を殺人罪などで公判中から7被告と共謀。昨年6月

FINAL MAP:

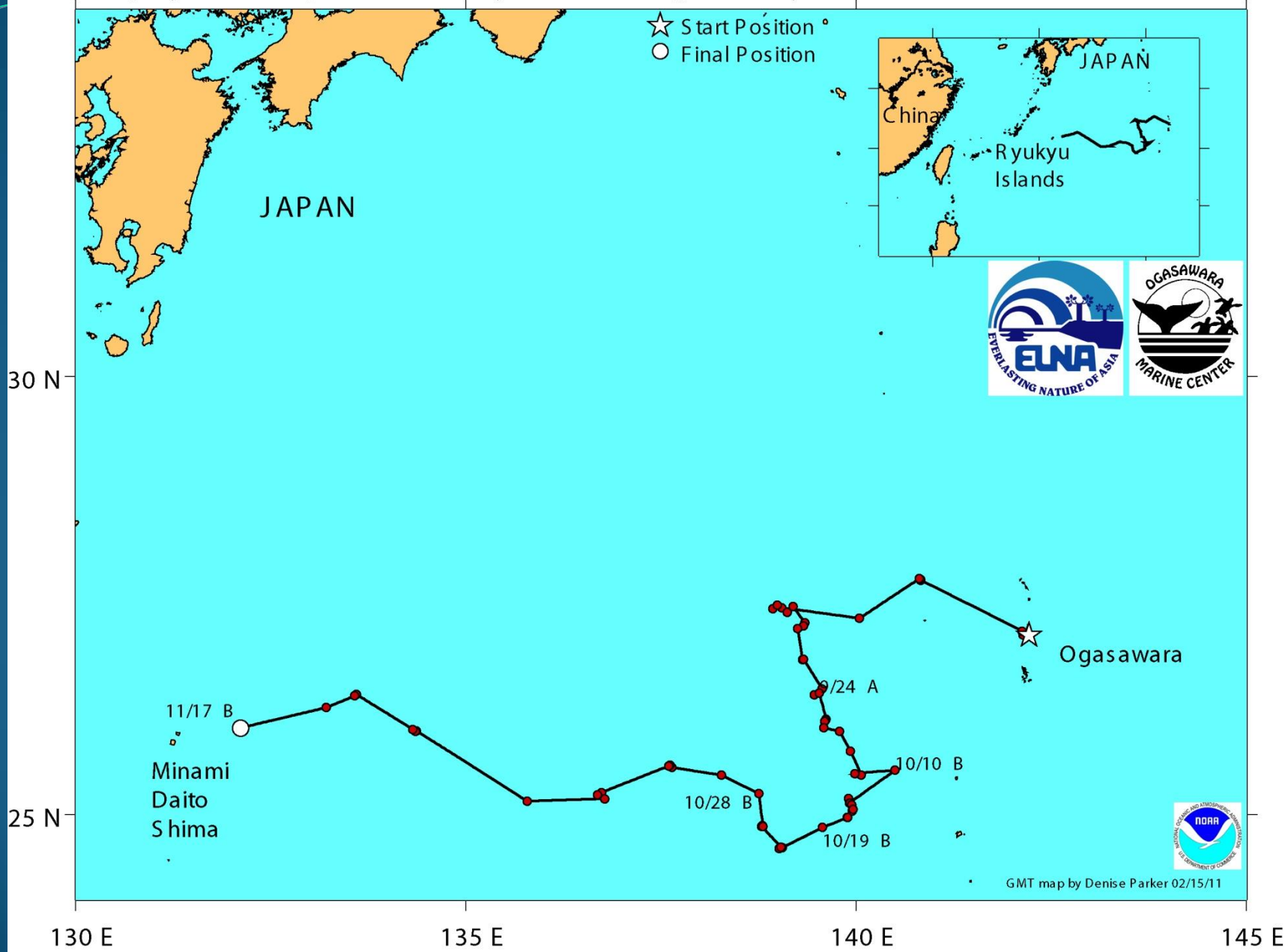
2007 movement of Miss China, green turtle ID 41457, from Chichi Jima, Japan

ST-20 Duty Cycle: 6 hrs on, 48 hrs off

Deployed: 7 Sept 2007

Days transmitting: 69 days

Distance traveled: 1640 km



Excerpt from: Yoshimasa Matsuzawa. 2009. Sea Turtle Conservation and Sea Turtle Association of Japan.

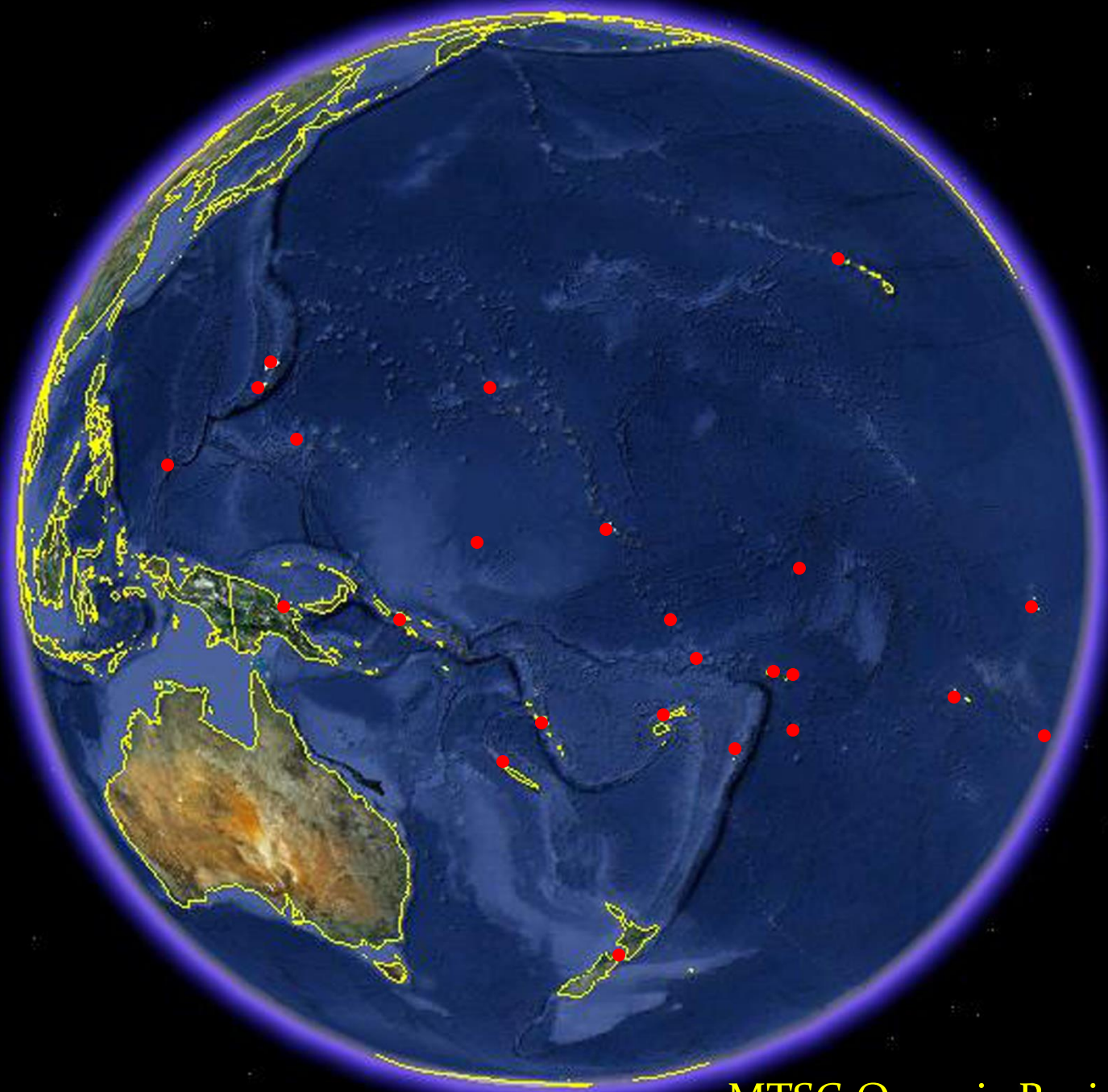
“What kind of world would open up when we solve the issues that pose threats to sea turtles today, sufficiently recover the population, and remove them from the Red List? We envision a world in which a diversity of relationships exists, as it must have been so for a long time, between sea turtles and people who live outside of urban centers: those who eat sea turtles; those who do not eat sea turtles because of their loyalty to an ancestor who was saved by a sea turtle; those who eat sea turtle eggs; craftsmen who create eyeglass frames using hawksbill shells; fishermen who offer sake to a sea turtle caught in his net; fishermen who carry out a burial for a dead sea turtle in expression of sympathy; fishermen who enshrine in their family altar a piece of driftwood that a sea turtle used as a pillow; children who play at the beach mocking the tracks of sea turtles that came to nest; children who surround a sea turtle and torment it, and a young fisherman who comes by to rescue the turtle. **To bring back rich and plentiful nature that allows and tolerates such a diversity of values and world views, we believe, is the natural direction toward which we should be moving.**”

Excerpt from: Yoshimasa Matsuzawa. 2009.

足立辰雄・所伸之編著「現代社会を読む経営学（14）サステナビリティと経営学—共生社会を実現する環境経営」2009年、ミネルヴァ書房（京都）より

第11章 ウミガメ保護と日本ウミガメ協議会 松沢慶将

「現在ウミガメに脅威となっている主な問題を解決して、十分に個体数を復活させ、レッドリストから外したその先にはどのような世界が広がるのだろうか？われわれが思い描くのは、もともと長い間存在したであろう、地方で暮らす人々とウミガメの多様な関係である。ウミガメを食べる人、ウミガメに救われた祖先の遺言を忠実に守りウミガメを食べない人、ウミガメの卵を食べる人、タイマイの鱗板から眼鏡の縁を作る職人、網にかかったウミガメに酒をふるまう漁師、死んだウミガメを哀れみ埋葬する漁師、ウミガメが枕にしていた流木を神棚に祀る漁師、ウミガメの足跡を真似て砂浜で遊ぶ子供たち、ウミガメを囲みいじめる子供たち、それを制してウミガメを助ける若い漁師。このような多様な価値観を許容する豊かな自然を取り戻すことが、本来の進むべき方向であると思う。」(P.207)



MTSG Oceania Region



**Lui Bell- Our Colleague, Friend, and Man of the Pacific Islands
February 24, 1956 to November 29, 2012**