



## Profile of the Month

### High-seas releases of Pacific loggerheads from ships of opportunity

( Apr 2016 )

Source: G.H. Balazs (1), M. Rice (2), D. Parker (3) and J. Polovina (1)

Photos: Photos and figures c/o Denise Parker (JIMAR) and Marc Rice (HPA)

George Balazs has kindly given permission to reproduce the contents of an informative poster presented at the recent International Sea Turtle Symposium, held in Lima, Peru. The following abstract summarises two decades of work aimed at understanding more about the migration of Pacific loggerhead turtles.

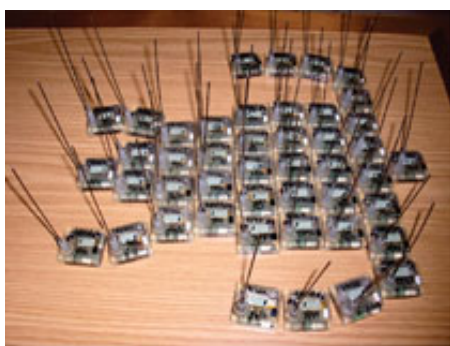
As the abstract points out in its conclusion, many more analyses can be made of the acquired data for years to come. The abstract mentions a dozen scientific papers that have already been published between 2000 and 2014, and which are available for viewing (see URL below).

As a bonus to readers in South-East Asia, at the very end of this note we also draw attention to satellite tracking studies that demonstrate the movements of another species, green turtles, from the Federated States of Micronesia and the Republic of the Marshall Islands, respectively, into the waters of Malaysia, Philippines, and Viet Nam.

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Life on the high seas is one of the last great frontiers for sea turtle exploration, inquiry, and discovery. In the Pacific Ocean, significant progress has begun in understanding the ecology and oceanic movements of juvenile pelagic loggerheads in northern and southern hemispheres comprising distinct genetic stocks derived from nesting beaches in Japan and New Caledonia/Australia respectively.

Our advances in knowledge to date have been made possible by the availability of smaller satellite-linked tracking tags and the enhanced sensitivity of CLS Argos receivers on board orbiting satellites. The photo at left shows an array of SPOT5 satellite tags prior to their attachment to juvenile loggerhead turtles at Aquarium des Lagons, Nouvelle Caledonie.



We have overcome the immense challenge of directly capturing immature loggerheads on the high seas by substituting robust aquarium-reared turtles transported by ship for offshore release. Trained shipboard observers have also satellite-tagged and released pelagic long line by-catch turtles on the

high seas. Turtles incidentally taken in offshore commercial pound nets targeting pelagic fish have also contributed to our international research partnership program.

From 1997-2012, 523 loggerheads with satellite tags have been released, 374 of which were aquarium reared involving 14 deployments after 2003 from eight different ships, including cargo vessels, fishery training ships, a passenger liner, a French Navy ship, a fishing vessel, and a whale-watching tour boat.



Eighty-eight turtles from the New Caledonia Aquarium des Lagons were released south of the equator, and 286 from the Port of Nagoya Public Aquarium Japan were released in northern latitudes. The following photo on the left shows preparations for the release of juvenile loggerheads (48 in total) from a cargo ship southwest of New Caledonia; and on the right juveniles are released off the coast of Japan.



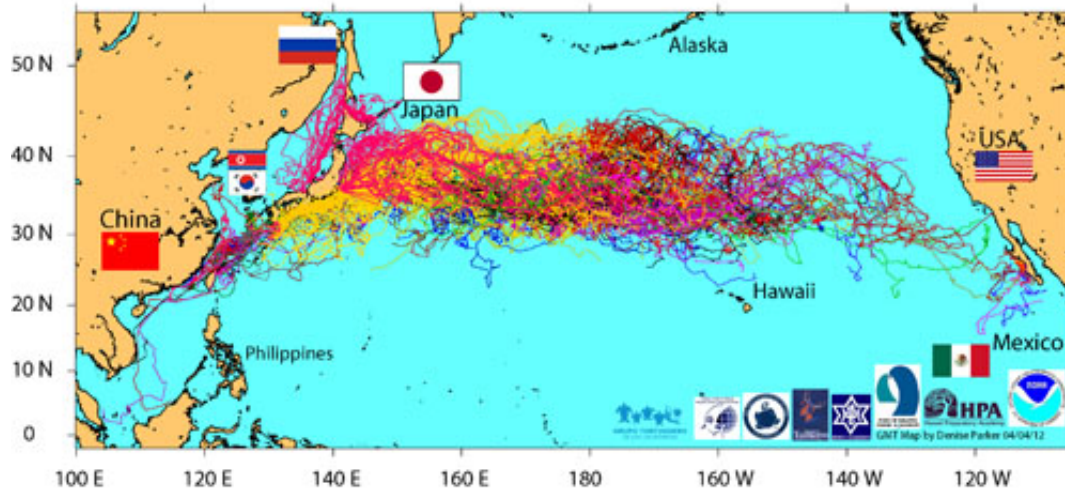
Carapace lengths ranged from 23-75 cm. Deployment locations included: the Kuroshio Current off Japan (30-35°N, 131-141°E); the Sea of Japan (37°N, 136°E); midway between Japan and Hawaii (33°N, 176°E), midway between New Caledonia and New Zealand (30°S, 171°E); and 200nm southwest of New Caledonia (25°S, 163°E).

Tracking lasted up to 1434 days in the northern hemisphere and 764 days in southern latitudes. Maximum distance traveled by a northern-stock turtle was 25,900 km and 15,290 km for a southern-stock turtle.

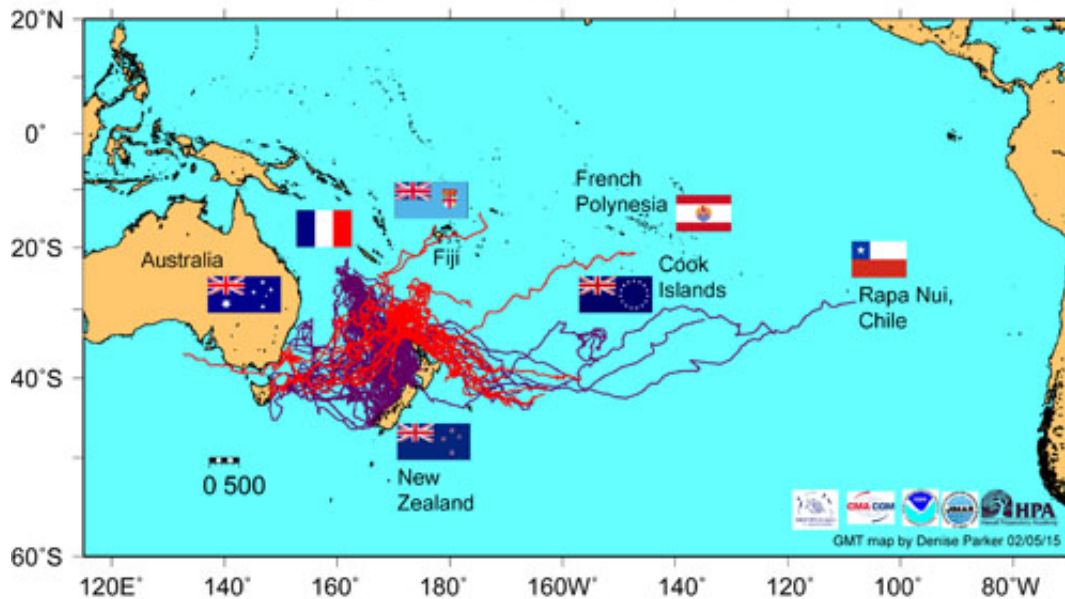
The following figures illustrate the satellite tracks of juvenile loggerheads raised at the Port of Nagoya Public Aquarium, Japan, and released into the North Pacific Ocean; and of juvenile loggerheads raised

at Aquarium des Lagons, Nouvelle Calédonie, and released into the South Pacific Ocean.

### 1997-2013 Satellite Tracking of Pelagic North Pacific Loggerheads



### 2008-2014 Satellite tracks for loggerhead turtles released in the South Pacific



Detailed findings to date of our pelagic loggerhead investigations are presented in 12 journal publications available at: < <http://akepa.hpa.edu/~mrice/sop/Pelagic.html> >.

Three overall conclusions can be drawn from the success of our work: 1) International partnerships of mutual understanding, trust, and goodwill are essential to study sea turtle populations that span an ocean basin; 2) Aquarium-reared loggerheads released into appropriate high-seas habitats are acceptable replacements for the research of wild-captured turtles; and 3) Our voluminous archive of tracking data constitutes a significant resource for additional analytical approaches involving collaboration.

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*Ed. Readers in South-East Asia — particularly Malaysia, Philippines, and Viet Nam — will be interested in two additional papers that also make use of satellite tracking technology to reveal the movements of post-nesting **green turtles** from the Federated States of Micronesia and the Republic of the Marshall Islands, respectively:*

**(1) Kolinski et al. (2014) Migrations & Conservation Implications of Post-Nesting Green Turtles from Gielop, Ulithi, FSM. Micronesica 14-04**

**(2) Parker et al. 2015. Conservation considerations revealed by the movements of post-nesting green turtles from the Republic of the Marshall Islands. Micronesica 15-03**

Please visit <http://micronesica.org/> for more details of these papers.

Figure from Kolinski et al. (2014) showing 2005 and 2006 green turtle migration routes following nesting activities at Gielop Island, Federated States of Micronesia:

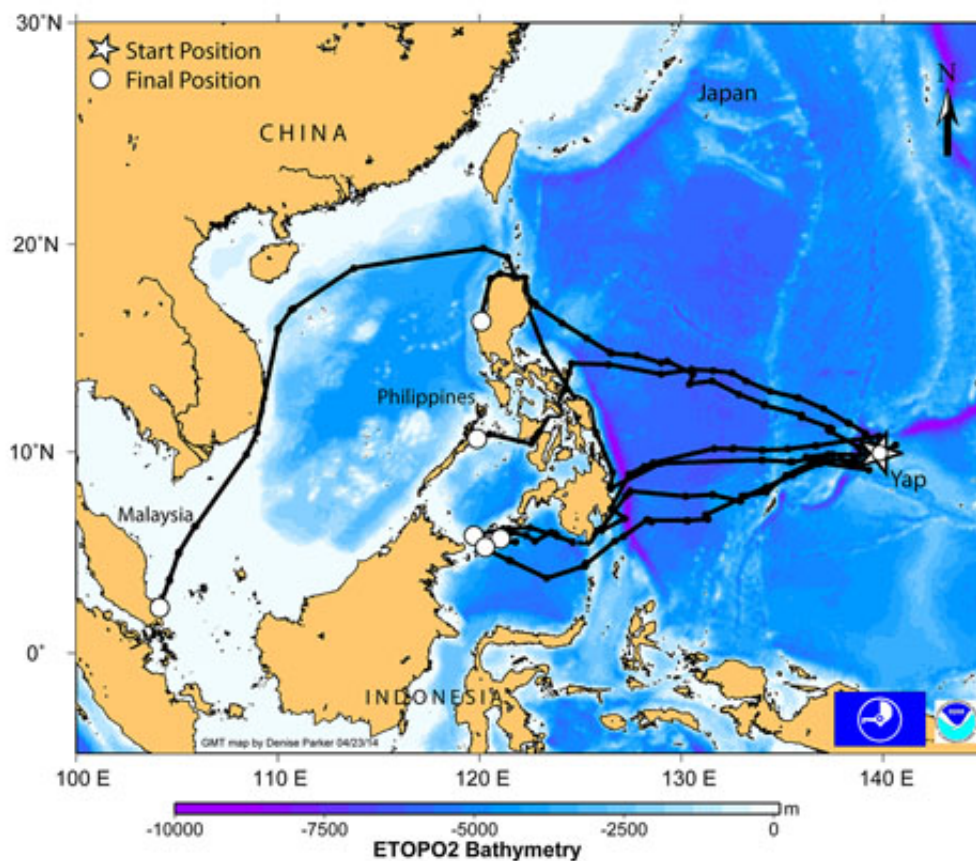
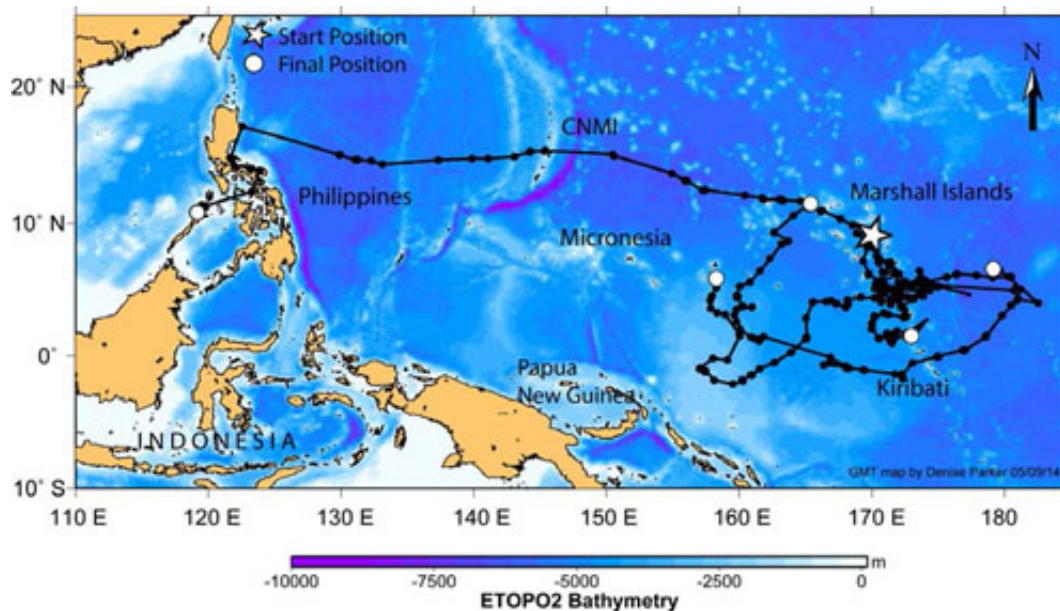


Figure from Parker et al (2015) showing the 2007-2008 post-nesting movement of five green turtles from Erikub Atoll, Republic of the Marshall Islands:



As Parker et al. rightly point out, both of these studies demonstrate "the international connectivity of green turtles nesting in this area and the results can be used to exchange information and enhance regional conservation efforts between nations that share these endangered and culturally important turtle resources".

Original URL: [http://www.ioseaturtles.org/pom\\_detail.php?id=177](http://www.ioseaturtles.org/pom_detail.php?id=177)

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