



## 2017 ISSUE #4

### Natal origins of male leatherbacks

Male leatherback sea turtles (*Dermochelys coriacea*) are elusive and typically only encountered at sea. As a result, there is limited information about their behavior and distribution, both



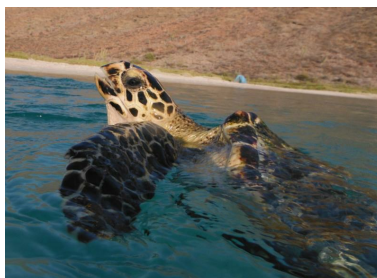
for juveniles and adults. To better understand their population dynamics, Roden et al. used genetic analysis with microsatellite DNA markers to assign captured or stranded turtles from the United States, Turkey, France, and Canada to one of nine Atlantic basin populations. The results show that the natal origins of all turtles were western Atlantic nesting beaches in Trinidad, French Guiana, and Costa Rica. Better understanding the population dynamics of male sea turtles in a breeding population has the potential to improve management and conservation strategies.

Photo courtesy of NC Wildlife Resources Commission

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### Juvenile hawksbills forage near natal beaches

When sea turtles reach sexual maturity, they often return to natal areas for reproduction and nesting. The importance of natal regions during other life stages however, is not well understood.



Genetic research by Gaos et al. using mitochondrial DNA (mtDNA) from juvenile

### Recent Publications

#### Environment, Climate, & Ecosystem Effects

**Wells et al.**

Environmental conditions and prey-switching by a seabird predator impact juvenile salmon survival.

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**Yeh et al.**

Effect of contaminants of emerging concern on liver mitochondrial function in Chinook salmon.

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#### Population Studies

**Martien et al.**

Unexpected patterns of global population structure in melon-headed whales (*Peponocephala electra*).

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**Abadia-Cardoso et al.**

Molecular population genetics of the northern elephant seal *Mirounga angustirostris*.

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**Goertler et al.**

Seasonal floodplain-tidal slough complex supports size variation for juvenile Chinook salmon (*Oncorhynchus tshawytscha*).

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hawksbill turtles (*Eretmochelys imbricata*) in the eastern Pacific Ocean suggests that they forage in regions near their natal beaches. This pattern, termed natal foraging philopatry (NFP), could have important implications for life history research and conservation of sea turtles. Further research is necessary to determine how common NFP is among other sea turtle stocks.

Photo courtesy of Alex Gaos

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## High exposure of Chinook salmon to personal care products and pharmaceuticals

The fish plasma model (FPM) is used to estimate the potential for pharmaceuticals and personal care products (PPCPs) to harm fish. It works by



comparing observed or predicted PPCP plasma concentrations in fish to known therapeutic plasma levels in humans. Meador et al. used an FPM to assess the toxicity of PPCPs to Chinook salmon (*Oncorhynchus tshawytscha*) and Pacific staghorn sculpin (*Leptocottus armatus*). They collected salmon and sculpin from two wastewater effluent-impacted sites and one reference site and compared and estimated PPCP exposure based on water and fish tissue concentrations. Their findings suggest that predicting plasma concentrations from tissue residues rather than water concentrations improves our ability to assess the likelihood of PPCP toxicity for fish.

Photo courtesy of NWFSC

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## Habitat use of fin whales in the California Current

Fin whales are globally endangered due to historical overexploitation, and little is known about fin whale spatial ecology at



the sub(ocean)-level, which makes conservation difficult. Scales et al. aimed to better understand the influence of biophysical conditions on broad-scale patterns of habitat use by fin whales in the California Current System (CCS), predict seasonal habitat use and explore seasonal variability, and use modelling to assess the environmental factors influencing individual residence times in high-use habitat. Satellite telemetry data suggest that fin whales do not follow the canonical baleen whale migration model, that biophysical conditions in the CCS support productive foraging habitat year-round, and some localized areas are ideal for extended periods of residency. High-use habitats for fin whales are in areas of intense human use, and seasonal habitat suitability maps could better inform management efforts.

Photo courtesy of MarEcoTel

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## Conservation

### Goulette and Hawkes

Altering vertical placement of hydroacoustic receivers for improved efficiency in cold water estuary zones.

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### Macqueen et al.

Functional Analysis of All Salmonid Genomes: an international initiative supporting future salmonid research, conservation, and aquaculture.

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### Sampson et al.

Trophic ecology of green turtle *Chelonia mydas* juveniles in the Colombian Pacific.

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## Behavior

### Soldevilla et al.

Geographic variation in Risso's dolphin echolocation click spectra.

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### Fossette et al.

Resource partitioning facilitates coexistence in sympatric cetaceans in the California Current.

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This newsletter is intended to summarize the latest research on protected species from scientific publications that include one or more NOAA Fisheries authors. It will be distributed quarterly with alternate issues highlighting research from the East and West Coasts centers and offices.

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