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For management purposes, NOAA Fisheries currently defines 32 stocks of bottlenose dolphins (*Tursiops truncatus*) within bays, sounds, and estuaries of the Gulf of Mexico; however, for the majority of stocks little data are available. Bottlenose dolphins utilizing Choctawhatchee Bay in the Florida panhandle are of particular concern due to potential impacts of recent Unusual Mortality Events. NOAA Fisheries estimated abundance of Choctawhatchee Bay dolphins (179 residents; 232 residents plus transients) from surveys conducted in summer 2007. Our objective was to use data from those surveys to describe bottlenose dolphin social structure within Choctawhatchee Bay. Photo-identification surveys conducted on 33 days resulted in 141 groups sighted and 227 individuals sighted 1- 12 times. Group size (GS) ranged from 1 to 45 (median = 7). No neonates were sighted, but young-of-the-year (YOY) were present in 30% of groups. Groups containing YOY (median GS = 15) were significantly larger than groups without YOY (median GS = 5) ($P < 0.001$). SOCPROG2.4 was used to calculate half-weight association indices, test for differences in gregariousness and for preferred/avoided associations, and examine lagged association rates. The estimate of social differentiation indicated a well-differentiated society. Tests for differences in sociality or gregariousness indicated some individuals were found in consistently large or small groups. Permutation tests revealed non-random associations and the presence of preferred/avoided companions. Standardized lagged association rates were significantly higher than by chance alone, indicating animals preferentially associated over time. Though limited to summer, these findings contribute to our understanding of social structure of bottlenose dolphins in Choctawhatchee Bay. Using these data, we are not only able to quantify how many animals are debilitated to the point of stranding and death during natural and anthropogenic disturbances, but also understand the overall effect on group dynamics and social structure for those remaining within the population.

Live Here - Die Here! Life History Inference from Carcass Recovery in Bottlenose Dolphins (*Tursiops truncatus*)

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In studies of cetacean populations, mortality of known individuals is often assumed but rarely confirmed. Stranded carcasses of bottlenose dolphins (*Tursiops truncatus*) in the Indian River Lagoon (IRL), Florida have been systematically recovered for several decades. Dolphins in the IRL exhibit year-round site fidelity within at least three separate communities. The goals of this study were to use the recovery of marked/known photo-identified individuals to: 1) determine if individuals died within their home range; and 2) use a sighting interval based on resight histories to predict death and estimate carcass recovery. A total of 194 dolphins were recovered dead in the IRL from 2002-2007, with 105 (54%) suitable for matching (decomposition/scavenging accounted for most unrecognizable fins). Fifty percent (53/105) of these dolphins were marked/known, 45% (47/105) were unmarked, and 5% (5/105) were marked/unknown. The majority of dolphins with >3 sightings (82%) died between the most extreme points of their home range. Dolphins in the southern community have not been observed in the Atlantic Ocean and no evidence exists of dispersal to the northern or Mosquito Lagoon communities. Of 182 resident dolphins in this community encountered 2,734 times, sighting intervals were not normally distributed with most dolphins resighted in < 100 days. Based on the 99% resighting frequency interval (390 d), we predicted 35 adult/juveniles to have died within the study area and period. Fourteen of the predicted dolphins were recovered dead and 12 carcasses too decomposed to identify were also recovered. After applying the marked/unmarked ratio (62:38) for live non-calf dolphins to the decomposed carcasses, we predicted seven dolphins were potentially marked, thus the remaining 14 of the predicted 35 dolphins (or 40%) were presumed unrecovered. Further investigation comparing mark/recapture analyses will help to refine an annual correction factor for unrecovered carcasses as a minimum estimate of mortality.

Rare Sightings of Bryde's Whales (*Balaenoptera brydei/edeni*) in the Southern California Bight

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Bryde's whales (*Balaenoptera brydei/edeni*) have been considered an anomalous occurrence in the Southern California Bight (SCB). Thus, they typically have been excluded from species lists associated with SCB management documents. In the last 40 years only two visual sightings of Bryde's whales were documented in California waters, the last one in 1991 (Carretta et al. 2008). This is despite extensive systematic vessel and aerial surveys and presumed recent recordings of Bryde's whale vocalizations in the SCB. Bryde's whales are notoriously difficult to differentiate in the field, both from each other and also from fin (*B. physalus*) and sei whales (*B. borealis*), given the subtle differences in physical characteristics. Between August 2006 and September 2010, we photo-documented five sightings of five single Bryde's whales in the SCB. Two of the five sightings occurred in October 2008 and September 2010 during 33,880 km of aerial surveys. The remaining three sightings occurred during small-vessel surveys that included offshore waters: two in June 2006 and one in September 2010. These sightings combined with other reports of presumed vocalizations suggest that Bryde's whale numbers may be increasing in the SCB. This may be related to global warming, large-scale oceanographic events (e.g., El Niño and La Niña) and resulting changes in prey availability. Recent sightings reported herein indicate that the Bryde's whale should be considered as a species present in the SCB and photo-documentation is critical to ascertain species.

Cetacean species diversity observed during four years of survey effort in Onslow Bay, NC, USA

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From June 2007 to April 2011, dedicated aerial and vessel surveys were conducted in a 1,713 km² area in Onslow Bay, NC, identified as a site alternative for a US Naval sonar training range. The site straddles the shelf-break and incorporates shallow, shelf and deeper, pelagic waters. The surveys were designed to investigate occurrence, density, and distribution of protected marine species. Sixty-seven complete aerial surveys covering 48,674 km, and 67 single track-line vessel surveys covering 5,642 km, were conducted. *Tursiops truncatus*, the most frequently encountered species, was recorded during every calendar month and observed throughout the range. This species displayed two distinct color patterns; dolphins east of the continental shelf break exhibited a white peduncle and were sighted in larger groups, while animals on the shelf were more uniform in color and were sighted in smaller groups. *Stenella frontalis*, the second most commonly encountered species, was sighted in 10 of 12 calendar months, and had a distribution restricted to inshore continental shelf waters. *Globicephala macrorhynchus*, *Grampus griseus* and *Steno bredanensis* occurred less frequently and were commonly encountered in summer. Only these five species were recorded during the first 33 months of effort. In the subsequent 14 months four additional species,*Delphinus delphis*, *Balaenoptera physalus*, *Balaenoptera acutorostrata* and *Megaptera novaeangliae* were observed in winter and spring months. The appearance of two "colder" water species, *D. delphis* and *B. physalus*, on the same day raises questions about oceanographic features that influence conditions inside the survey area. Variation in Gulf Stream position, and the presence of warm and/or cold core eddies, likely influences cetacean presence at this site in winter months. On-going efforts will be aimed at establishing the relationship between cetacean occurrence and local oceanographic conditions within this site.

Home Range Modeling of Resident Bottlenose Dolphins (*Tursiops truncatus)* in Boca Ciega and Tampa Bay, Florida

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Home ranges of three long-term resident common bottlenose dolphins (*Tursiops truncatus*) were studied in Boca Ciega and Tampa Bay, Florida. Boat-based photo identification surveys were conducted from 1993 to 2010 in approximately 406 km² of inshore and coastal waters. Individuals with 100+ sightings were selected for analysis, as prior studies indicated that using fewer sightings tended to underestimate home range size. From a catalog of 722 individuals, 3 females met this criterion; no males met the criterion. Sightings were analyzed with Geographic Information System software (ArcGIS) using the 'Home Range Tools' extension to perform 100% minimum convex polygon (MCP) and 95% fixed kernel density (FKD) estimations of home range area. MCP estimates ranged from 57.1-107 km² with large, polygon models likely influenced by outliers, while FKD estimates ranged from 21.5-42.2 km², with smaller, more amoeboid-shaped models and core areas concentrated within 20-25% of total individual home range. To investigate the effect of sample size on home range estimation, 10 sightings of each individual were randomly selected and MCP and FKD estimates were calculated. Additional increments of 10 randomly selected sightings were included in the MCP and FKD estimates to create area observation curves which suggested that FKD estimates were appropriate for large sample size and that a minimum of 50-60 sightings is necessary for accurate home range size definition in the Boca Ciega and Tampa Bay areas. However, MCP remains a valuable tool for assessing home ranges for short term field studies or small subsets of long-term data which are limited to small sample sizes. Home range estimates from this area were smaller than those previously estimated for resident female bottlenose dolphins in Sarasota Bay, perhaps indicating ecological differences between these two nearby bays along the central west coast of Florida.

An analysis of caloric intake, water temperature, reproductive status, and sexual behavior of *Tursiops truncatus* in ambient seawater facilities

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Several studies have examined the consumption patterns and energy requirements of Atlantic bottlenose dolphins (*Tursiops truncatus*), yet little is known about how these values change with respect to reproductive status and small-scale changes in water temperature. This study involved a comparative assessment of the caloric intake of two resident, Atlantic bottlenose dolphin populations, with respect to sex, reproductive state, and water temperature in ambient seawater facilities (Dolphins Plus and Dolphin Cove, Key Largo, FL). Additionally, detailed, daily behavior logs were analyzed to determine whether water temperature influenced observable sexual activity in males. Weekly caloric intake, based on pre-determined caloric values (Dairy One Ithaca, Inc.) of each dietary component, was calculated for adult males (n = 5) and females in the following reproductive states: pregnant/lactating (n = 2), pregnant/non-lactating (n = 6), non-pregnant/lactating (n = 5), and non-pregnant/non-lactating (n = 5) over the course of 12-24 months. Due to high variability in energy use associated with growth and nursing, calves and juveniles were excluded in these analyses. Although food is provisioned, rate and magnitude of provisioning is driven by appetitive responses exhibited by each individual dolphin. Males exhibited a significantly higher caloric load than non-pregnant/non-lactating females. Among females, lactating females (pregnant and non-pregnant) exhibited significantly higher consumption values than females in all other reproductive states, highlighting the energetic cost of lactation. Additionally, there was an inverse relationship between mean monthly caloric intake and mean monthly water temperature (controlled for reproductive status), indicating the influence of temperature on energetic demands. Lastly, the frequency of male sexual activity was significantly higher during summer months (i.e. June, July, and August). Although additional research on caloric consumption of bottlenose dolphins is needed, these data can serve as a baseline for the development of managed care provisioning protocol and as a comparative tool for wild analyses.

Relationships between prey quantity and quality and seasonal movement patterns of bottlenose dolphins in the nearshore waters of Bunbury, south western Australia

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Prey availability is a driving force in the distribution, behavior, and movement patterns of predators. Relative abundance, concentration, and energy content of prey all influence predator choice in space use. Bottlenose dolphin (*Tursiops aduncus*) abundance in the nearshore waters of Bunbury, Western Australia is found to be higher during the