to reduce the potential for bias. Gathering data in this fashion can be both time consuming and costly. Similar data, however, can be collected from platforms of opportunity, including commercial vessels, ecotourism operations and whale watch vessels. The goal of the current project was to analyze data collected aboard whale watch vessels in order to make recommendations for data collection procedures so that such observations are as comparable as possible to data collected from scientific surveys. To accomplish this goal, a sightings data set was obtained from three whale watch companies on Stellwagen Bank, Massachusetts during summer 2007. Data were obtained via GPS for the duration of whale watches departing out of Gloucester and Boston, Massachusetts. Whale sightings data were combined with vessel movement data to calculate species-specific sightings-per-unit-effort (SPUE) for humpback whales (*Megaptera novaeangliae*), fin whales (*Balaenoptera physalus*) and minke whales (*Balaenoptera acutorostrata*). These SPUE values were then compared to similar data derived from independent analyses conducted in the same area to assess how biases in data collection may influence the interpretation of long-term trends. Additionally, sightings data from whale watches from 1994-2006 were analyzed for long-term trends in relative abundance and distribution to understand how bias in data collection may influence the interpretation of species abundance. Based on the findings from this study, a set of recommendations was developed to minimize bias in data collection onboard whale watch vessels. Whale watch vessels offer a valuable and often untapped source for gathering data on the distribution of whales. Whale watch data collected in a standardized fashion could contribute significantly to an understanding of cetacean populations.

New rorqual whale lunge-feeding strategies, behaviors and mechanisms

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Whale conservation is a complex, long-term program. Scientific foundations for this program necessarily include knowing as much as possible about whale feeding strategies, behaviors and mechanisms. Rorqual whales (Balaenopteridae) are the largest animals on earth yet their feeding systems are poorly understood due to the difficulties of studying feeding whales at sea. Most rorquals feed by lunging into schools of fishes or krill with their mouth open. They engulf a large volume of water and prey then channel it into their expandable ventral pouch. Musculature and elastic material properties of the pouch then force water back out the mouth through a set of baleen plates which retain prey. During the summers of 2004, 2006 and 2007 we used inflatable boats to observe and record digital video footage of surface-feeding blue whales (*Balaenoptera musculus*), finback whales (*B. physalus*) and minke whales (*B. acutorostrata*) in the Gulf of St. Lawrence, Canada. Individual whales were photographically identified, and videogrammetric techniques were used to comparatively quantify various aspects of lunge-feeding behavior and locomotion. This information was then used to develop physical models in laboratory water tunnels to simulate functional aspects of rorqual feeding anatomy. Results from 1300 hours at sea and over 3500 lunge-feeding events from 39 blue whales, 10 finback whales and 62 minke whales provided evidence that rorquals exhibit preferential lunge-feeding behaviors and techniques. They also use specialized prey capture maneuvers that include exploitation of prey along oceanographic fronts. Our results from the modeling study provided new mechanistic information involving ventral pouch function during prey capture and filtration. Collectively this study contributes new information toward behavioral ecology and lunge-feeding biomechanics of rorqual whales. Its broader impacts apply toward relevant conservation policies that are important to areas like the St. Lawrence where commercial shipping lanes intersect historical whale feeding grounds.

Vocal hot spots of dugongs (*Dugong dugon*) monitored using simultaneous passive acoustic methods and visual observations in Thai waters

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Although population estimation is important for conservation of endangered animals such as dugongs (*Dugong dugon*), spatial distribution pattern of the focal animal should be evaluated in advance. The spatial distribution pattern has direct impacts on sampling biases of the techniques applied for the population survey. Previous dugong surveys included visual and acoustic observations and also satellite telemetry studies. The distribution pattern of the dugongs monitored by using either visual or acoustic observations remain to be calculated and compared. Dugongs were monitored using simultaneous passive acoustic methods and visual observations along 60 km cruise per day in Thai waters during January 2008. Dugong calls were detected by a towed stereo hydrophone array system. Two teams of experienced observers conducted standard visual observations on the same boat. Distribution pattern of the detections were evaluated by dispersion analysis using I_δ-index. Detection probabilities of the both observations were estimated by matching the detections. Vocal hot spots characterized by frequent acoustic detection of calls were suggested by the dispersion analysis, while dugongs were visually observed constantly throughout the focal area ($p < 0.001$). The vocal hot spots were found outside the seagrass beds, suggesting that their calls were not used during feeding. Acoustic and visual detection probabilities were 15.1% and 15.7%, respectively, employing a 300 second matching time interval. Passive acoustic monitoring assisted the survey with similar detection performance to that of experienced visual observers. But for the dugong population survey, the visual survey may perform better than the acoustic survey because the distribution of the visual detections was constant. Further studies on the site-specific vocalization of the dugongs enhance our understanding of the functional role of the dugongs and also contribute to more specified and optimized conservation plans.

Fishing the same fish? Odontocete - fisheries interactions in the Adriatic Sea

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The Adriatic Sea is semi-closed in the eastern Mediterranean Over one third of cetacean mortality in this area during the past 19 years is attributed to antropogenic causes. We examined the diet of four odontocete species that appear in the Adriatic regularly: Risso's dolphin, Striped dolphin and Cuvier's beaked whale, and the only resident one: the Bottlenose dolphin. 201 animals were found stranded in this period and a stomach content analysis was done, and in addition we conducted a series of interview on cetacean presence and behavior with local fishermen. The Bottlenose dolphin was feeding on the prey in inshore area, with >60% prey biomass attributed by Sparidae, while other species were feeding offshore: Risso's dolphin and Cuvier's beaked whale fed exclusively on cephalopods of middle and lower slope, respectively, without a direct interaction with the firsheris A correlation was established between the fish stock status and the bottlenose dolphin mortality: as the stock dropped the dolphins maintained a similar diet, a possible result of the growth of the competiton with fishermen, but also a possible consequence of adopting the alternative feeding methods, as the interviews implied. The results urge for a revision of the management measures in eastern Adriatic in order to sustain the small local bottlenose dolphin population.

Population trends in North Atlantic right whales: Why haven't they increased like *Eubalaena australis*?

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