Developing a calving rate index for beluga in Cook Inlet, Alaska using aerial videography and photography

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A study, conducted during the 2003 aerial survey of Cook Inlet belugas (*Delphinapterus leucas*), developed a method to estimate the portion of calves in the population. Beluga calves were identified by their small relative size, and dark gray. The objectives of this study were to: 1) identify camera systems capable of collecting images of beluga calves within groups; 2) test a paired system of photographic and video equipment to simultaneously document the distribution of a group, count white and gray animals, and count small dark calves in a sub area of the group; 3) assess our ability to randomly sample within a group and collect data on the proportion of calves. A Nikon D1X digital still camera with a 300mm fixed focal length lens and a Sony DVCAM PDX10 digital video camera were used to simultaneously sample groups. The digital still camera collected high quality images of belugas where calves may be easily identified in a sub area within the larger group. The digital video provided a wider but lower resolution view of the group to assess group dimensions, size, movement, and behavior. Photo/video passes were conducted at various times of day and locations on a variety of beluga group sizes and dimensions. Still images were reviewed for the number and quality of pictures containing white or gray whales and smaller darker gray calves, and cataloged by date, location, number of whales, and the presence of calves in the shot. The results show a total of 688 images with 525 containing whales. Of these images, 385 contained mature white whales only and 98 contained gray whales. Only 7 were known calf images with and an additional 35 images with possible calves. These results indicate that the dual photographic/video setup can sample a beluga population for clear images of small calves.