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Mass stranding prevention: the effectiveness of herding and acoustic deterrents

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Mass strandings of cetaceans occur on a regular basis in a few locations around the world. From 1995 to 2002 there were twenty-six mass stranding events on Cape Cod, Massachusetts, USA. Publicity of these events and educational outreach has led to increased awareness and early warning reports of animals close to shore in critical stranding areas. We hypothesized that herding with a combination of small vessels and acoustic deterrent devices (pingers) during a falling tide would be successful in driving animals into open water. Between August 2000 and May 2003 attempts were made to prevent the occurrence of seven mass strandings involving 164 cetaceans on Cape Cod. Pingers effectively herded animals in two events. In three events, deploying pingers had a mixed effect; at times causing the animals to move into deeper water, at other times having no affect, or arresting their movement toward open water. Pingers were ineffective at driving animals out of shallow water in two events; however, in one of these events the motion and engine noise of the boats successfully herded the animals. Prevention efforts have been unsuccessful with pilot whales (*Globicephala melas* – 0/47 in one event). Two attempts to herd common dolphins (*Delphinus delphis*) have met with mixed success (12/22 in two events). The response by white-sided dolphins (*Lagenorhynchus acutus* - 88/95 in 4 events) showed an increase in herding success with an increase in group size. Our results suggest that a combination of small vessel herding and the use of acoustic deterrents were effective in preventing animals from mass stranding. We conclude that herding animals with small boats and pingers can be an effective deterrent to mass strandings, highlighting the importance of early detection.