Harbor porpoise (Phocoena phocoena) reactions to pingers

The use of acoustic alarms (pingers) has been mandated in several gill net fisheries around the world. Even though pingers have shown to reduce the incidental catch there are still questions to be answered in relation to effective range, habituation and displacement. In the present studies, the vocalization behavior of porpoises was recorded in response to two different pingers, AQUAmark100 (20–160 kHz) and AQUAmark300 (10 kHz). The Scottish experiment included an AQUAmark100 pinger running in on/off cycles. The pinger was placed in an array of acoustic click detectors (C-PODs) spaced at different distances from the pinger. In Denmark, three experiments were conducted. One had the same AQUAmark100 pinger placed in a C-POD array. The second and third experiment used an AQUAmark300 pinger running in on/off cycles. Both trial results of the AQUAmark100 revealed significant pinger reduction effects at 0, 200, and 400 m distance; however, the vocalization behavior reveal no signs of habituation. The studies of the AQUAmark300 revealed a significant pinger effect at 0 m distance and either none or 17% reduction at 300 m distance. At one station, however, habituation effects were found indicated by an increase in clicks over time. These results are important in relation to pinger use and thus fisheries management.

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