

## **The magnitude and sustainability of marine mammal by-catch in fisheries in East Malaysia**

### **Abstract**

The magnitude and sustainability of incidental catches of marine mammals in fisheries was investigated in Sabah and Sarawak, East Malaysia, using a combination of interview surveys and observer trips on fishing boats. These fisheries involve around 15,000 registered fishing boats and generate annual landings of around 350,000 tonnes. Between March 1997 and December 2004, we interviewed fishermen working on 753 and 358 boats in Sabah and Sarawak, respectively, who were employing trawl nets, purse seines, gillnets and fish stakes. They were asked questions about sightings of marine mammals and interactions with fishing. We also followed 36 trawl and 10 purse seine fishing trips in Sabah between June 2003 and December 2004. Fishing was conducted in coastal waters and total annual catches by each method and region were estimated. Incidental catches of marine mammals were reported by fishermen from 310 (41%) and 99 (28%) fishing boats in Sabah and Sarawak, respectively. Gill-netters, trawlers and fish stakes were reported to catch cetaceans and dugongs, while purse seiners caught only cetaceans. The Irrawaddy dolphin, bottlenose dolphin, spinner dolphin, pantropical spotted dolphin, Indo-Pacific humpback dolphin and finless porpoise are the cetacean species known to be taken. Overall, the magnitude of incidental catches of marine mammals is greatest in gillnets. No marine mammal catches were seen during observer trips. Interview results suggest annual by-catches of 306 (95% CI=250369) cetaceans and 479 (95% CI=434528) dugongs in Sabah. Estimates for Sarawak were 221 (95% CI=189258) cetaceans per year and 14 (95% CI=230) dugongs. These results suggest that by-catch rates, particularly in gillnets, may be unsustainably high. A dedicated monitoring and educational programme, together with the establishment of Marine Protected Areas, is urgently needed to minimize the threat. © 2009 Marine Biological Association of the United Kingdom.