POPULATION ESTIMATES AND DISTRIBUTION PATTERNS OF IRRAWADDY DOLPHINS (*ORCAELLA BREVIROSTRIS*) AND INDO-PACIFIC FINLESS PORPOISES (*NEOPHOCAENA PHOCAENOIDES*) IN THE KUCHING BAY, SARAWAK

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ABSTRACT. — Small boat surveys were conducted in the Kuching Bay area of Sarawak, East Malaysia, in order to determine the distribution and abundance of coastal cetaceans. Photographic data collected from Jul.2007 through Oct.2010 was used to generate mark-recapture abundance estimates of Irrawaddy dolphins in the study area, and provided insights into ranging patterns and site fidelity. Between Apr.2010 and Oct.2011, line transect surveys were conducted, and abundance estimates for Irrawaddy dolphins and Indo-Pacific finless porpoises were generated using distance sampling.

The best mark-recapture estimate for Irrawaddy dolphins based on a weighted mean of estimates derived from photographs of left sides and right sides of dorsal fins was 233 (CV = 22.5%, 95% CI 151–360). Re-sighted individuals showed a high degree of site-fidelity, with less than 10 km between sighting locations over a period of four years for some individuals. A smaller proportion of re-sighted individuals ranged further—with a maximum straight-line distance of 26 km between sighting locations.

The best line-transect estimate for Irrawaddy dolphins was 149 individuals (CV = 28%, 95% confidence interval 87–255). The line-transect estimate for finless porpoises was 135 individuals (CV = 31%, 95% confidence interval 74–246). Finless porpoise abundance varied seasonally, with higher densities observed between Mar. and May, coinciding with the occurrence of larger groups with very small calves. The line transect and mark-recapture derived estimates for Irrawaddy dolphins are compared, and viewed in the context of mapped relative densities that reveal key areas of habitat for the species. These abundance estimates provide a critical step toward the assessment of both species' local conservation status and can be used in the design of effective management strategies.

KEY WORDS. — Malaysia, Sarawak, South China Sea, marine mammals, conservation, distribution, habitat, Irrawaddy dolphin, Indo-Pacific finless porpoise