

Fishermen's Perceptions of Dugong (*Dugong dugon*) Conservation and Seagrass Ecosystems in the Northern Coastal Region of Sri Lanka

T. Keerthanaram^{1*}, S. Priyanchana¹

¹*Department of Bio-Science, Faculty of Applied Science,
University of Vavuniya, Vavuniya, Sri Lanka*

*keerthanaram@vau.ac.lk

The dugong (*Dugong dugon*) is a vulnerable marine mammal that depends primarily on shallow coastal seagrass meadows for food. Although dugongs historically occurred throughout the Gulf of Mannar and Palk Bay, baseline population data for northern Sri Lanka remain limited amid concerns about habitat degradation, incidental capture, hunting, coastal development, and vessel traffic. This study investigated fishermen's perceptions and local ecological knowledge of dugongs and seagrass ecosystems along the northern coastal belt from Mannar Island to Jaffna Lagoon. A structured questionnaire was administered to respondents from coastal fishing communities using systematic spatial sampling based on 5 km × 5 km coastal grid cells (n = 60). Most respondents were familiar with dugongs (96%), 92% correctly identified the species, and 48% reported observing dugongs while fishing. Nearly three-quarters (72%) perceived that dugong abundance had declined over time. Ecological knowledge of seagrass was high: all respondents recognized seagrass beds, and 95% identified their importance as dugong feeding habitat. Accidental entanglement in fishing gear was the most frequently identified threat (78%), followed by habitat degradation (61%) and disturbance from motorized boat traffic (44%). The conservation-attitude scale showed strong internal reliability (Cronbach's $\alpha = 0.84$), with a mean score of 4.1 ± 0.63 . Dugong knowledge was positively correlated with conservation attitudes ($r = 0.53$, $p < 0.01$) and was the strongest predictor in the regression analysis ($p < 0.01$). These findings demonstrate that fishermen possess valuable local ecological knowledge that can complement scientific monitoring and support participatory conservation planning and policy development for dugongs and seagrass habitats in northern Sri Lanka.

Keywords: Community knowledge, Conservation, *Dugong*, Fishermen's perceptions, Seagrass ecosystems, Sri Lanka