

Exploitation currency among artisanal bait fishers: are intertidal bait harvesters optimal foragers?

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Optimal foragers, target prey with superior energetic returns. However, tropical artisanal bait, are harvested to enhance fish landings, and hence determinants to choice, remain conjectural. This study uses fisher interview, to infer bait and patch preference, and monitors bait and fish landing, to compute energetic and fishery profitability. Bait harvesting duration and quantity of hermit mangrove whelk, and polychaete harvested from intertidal mangrove and mudflat, and subsequent fish landings, were obtained. Whelk and hermit bait yields, were corrected for shell processing, using relevant metrics. Documented energy content and fishing fixed costs, were used to compute energetic and fishery profitability, and compared. Results show that despite whelks being least targeted (>6%), they provide significantly ($P < 0.0001$) higher energetic returns (5623 kcal.trip⁻¹), compared to more popular, polychaete and hermit crab baits (>400 kcal.trip⁻¹). Similarly, mudflats are most targeted (44%) patches, but record, twentyfold lower energetic returns, than less targeted (>11%), mangroves (2383 kcal.trip⁻¹). However, higher fishery profitability, was associated with polychaete and hermit (<200%) bait, than whelk (62%), but similar among patches. Therefore, fishing profits, rather than conventional bait harvesting energetics, are important determinants of bait choice. Patch preference may be clouded by factors, such as: alternate bait, fisher skill, foraging location, among others. This suggest that fishers may pursue preferred superior bait, due to perceived fishery gains, irrespective of harvesting constrains, with consequences on biota and ecosystem integrity.