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# Can the fishing time at FADs be adjusted to reduce bycatch by purse seiners?

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## Abstract

Fish aggregations at FADs are multi-specific in nature and comprise both targeted tuna species and several bycatch species. We acoustically tagged the three major tuna species - yellowfin tuna (*Thunnus Albacares*), bigeye tuna (*T. obesus*), skipjack tuna (*Katsuwonus pelamis*) - and some major bycatch species - silky sharks (*Charcharinus falciformis*), oceanic triggerfish (*Canthidermis maculatus*) and rainbow runners (*Elagatis bipinnulata*) - at the same drifting FADs (10 FADs). We investigated the temporal and spatial dynamics of the different species simultaneously to assess a potential time-dependent vulnerability. We specifically explored the fine scale diel patterns of association of the tagged species to determine if there are specific times of the day when only certain species are present at the FAD. Additionally, we used depth data (transmitted by pressure sensitive acoustic tags) to determine whether distinct diel patterns exist in the vertical distribution of the various species. These data are discussed in the light of a mitigation approach where the fishing time of tuna purse seiners could potentially be adjusted to reduce the capture of bycatch.

**Keywords:** purse seiner, bycatch, tuna, behavior, mitigation technique

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