Towards acoustic discrimination of tuna species associated with FADs

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Summary

The development of tools for selective fishing will impact positively tropical tuna fisheries, not only those that target larger individuals, such as the longline fisheries but also purse seine fisheries that fish on FADs and free-swimming schools, by reducing the impact on fish stocks where overfishing is occurring and that are limiting the ability to harvest. Acoustic technology could be the means to selectively catch tropical tuna associated to FADs, targeting species and sizes for which stocks are known to be in healthy condition, while reducing their impact on small yellowfin and bigeye. This technology could also support science, by providing direct data on species composition and biomass at FADs, at the temporal and spatial scales necessary to address key questions on highly migratory species. The rapid technological advances introduced in fishing technology, such as echo-sounder buoys used to quantify biomass under FADs, make it possible to design and implement systems that can bridge the existing data gaps. However, the technology is not ready to discriminate tropical tuna species yet. We present current state of the acoustic technology and advances on tropical tuna species discrimination as well as the conditions that need to be met to successfully apply this technology for tropical tuna management.