HABITAT ASSOCIATIONS FOR NEARSHORE ROCKFISH FROM AN UNCONVENTIONAL SOURCE

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 Tailoring Monitoring to Local Fishing Practices
- Oregon’s Marine Reserve Program uses four core monitoring tools.
- At Redfish Rocks Marine Reserve, a local ‘live fish’ fishery targets demersal fish species not commonly caught using the existing hook-and-line approach.
- Longline gear was evaluated as an alternative catch-and-release tool to supplement the species catch from current hook-and-line efforts.

Spatially Explicit Data from Longline Survey
- Each longline set consisted of a 138m ground line with 100 [110] hooks spaced 1.37m apart.
- Spatial data was collected at the set start and end.
- Species occurrence on each hook was documented.
- Using the known hook spacing, species occurrence was assigned spatially.
- Bathymetric-derived habitat metrics were created.
- Species presence/absence points (1:3 ratio) were analyzed in a generalized linear model (GLM) to explore habitat associations.

Habitat Associations: A Proof of Concept
- Cabezon: Slope of Slope (P < 0.05)
- VRM ≥ 15m (P < 0.05)
- Distance to Unconsolidated (P < 0.05)
- Species occurrence was assigned spatially, with significant relationships between fish occurrence and habitat metrics.
- Cabezon are found more frequently in flatter habitats with mid-scale rugosity (VRM), and closer to unconsolidated habitats.

Considerations for Using Longlines in Spatial Analyses
- This proof of concept study successfully detected significant relationships between fish occurrence and habitat metrics.
- One other published study (Parra et al. 2016) has used longlines in this manner; suggesting it may be an under-used approach.
- Analysis would improve with the following modifications:
  1. Evaluate different modeling methods (entropy, nonparametric multiplicative regression, etc.).
  2. Conduct sampling using a uniform random approach.

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