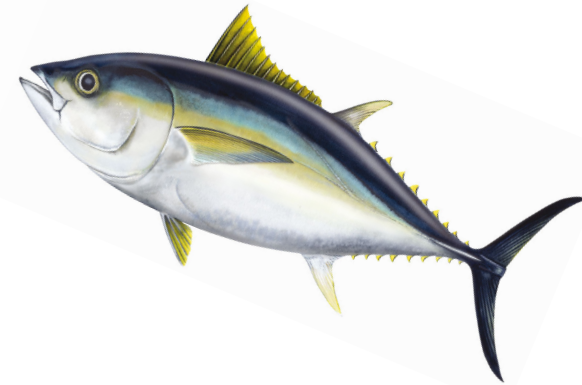
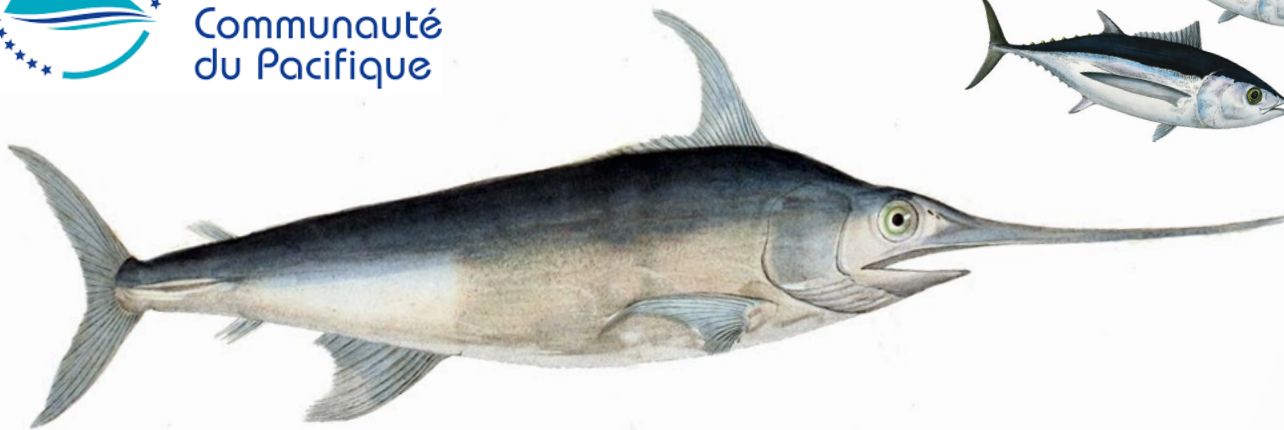




Pacific
Community
Communauté
du Pacifique



Pacific-wide changes in tuna targeting *via* cluster analysis of all-fleet operational data sets

Ongoing work by the [Stock assessment and modelling team](#) of
the Oceanic Fisheries Programme at SPC

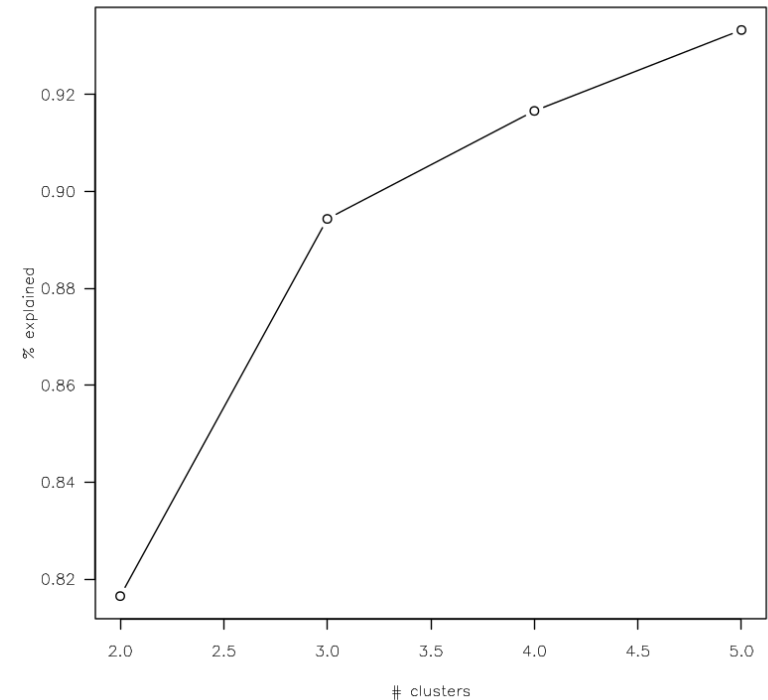
Including: Samuel McKechnie, Laura Tremblay-Boyer, Shelton Harley,
Graham Pilling, John Hampton

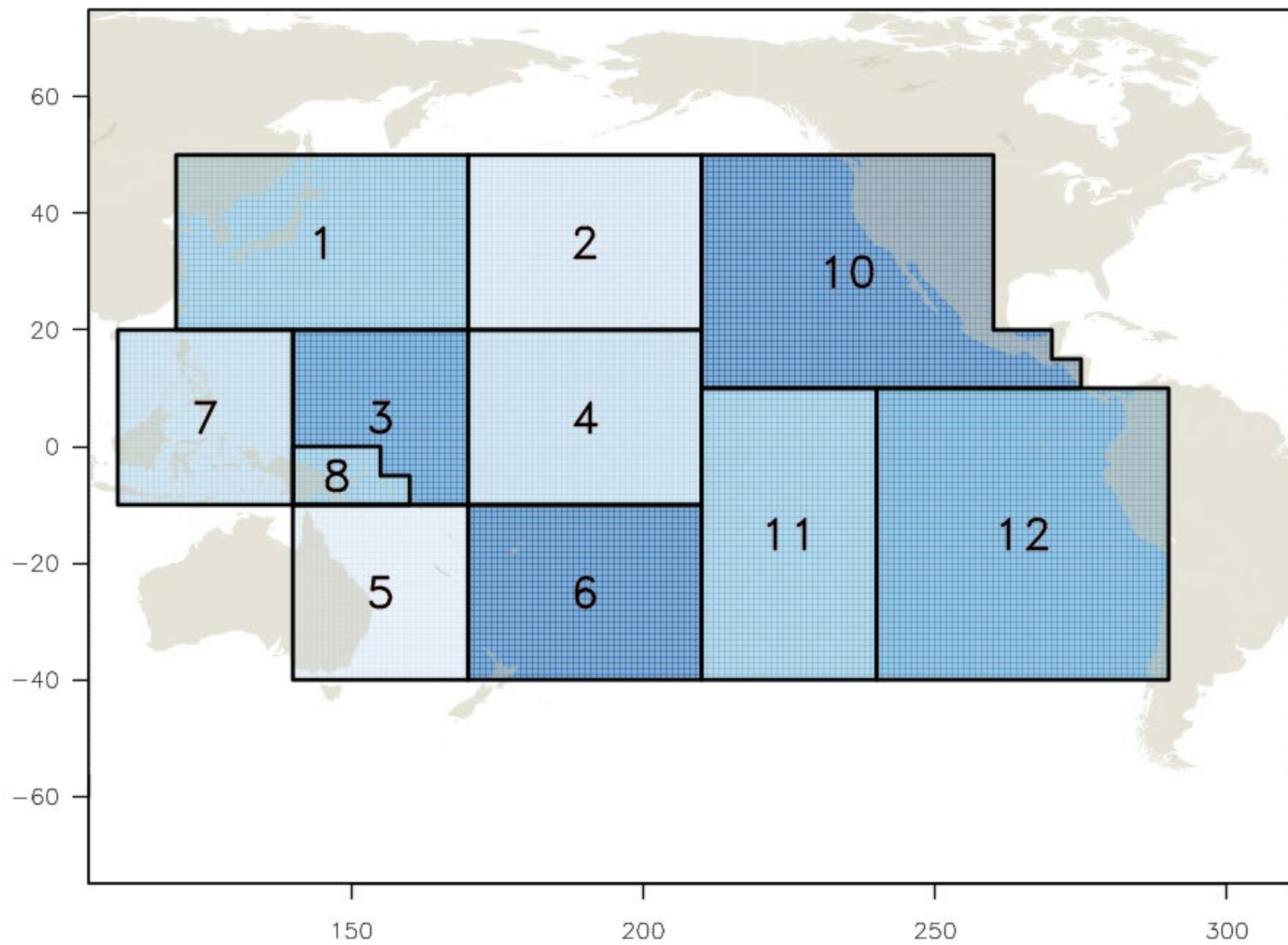


Laura Tremblay-Boyer
Fisheries Scientist
Dragonfly Data Science
laura@dragonfly.co.nz

Clustering by **species composition**

- > Pacific-wide operational longline dataset, all fleets
- > **K-means** / k-medians / hclust
- > Aggregation: Vessel x month (short) OR 5d cell x month
- > Also tried 'temporal' clusters
- > Best # of clusters: 'elbow' + committee assessment





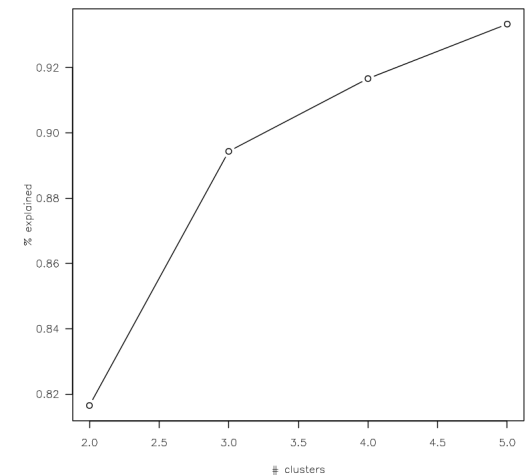
Clustering analysis



Region 6



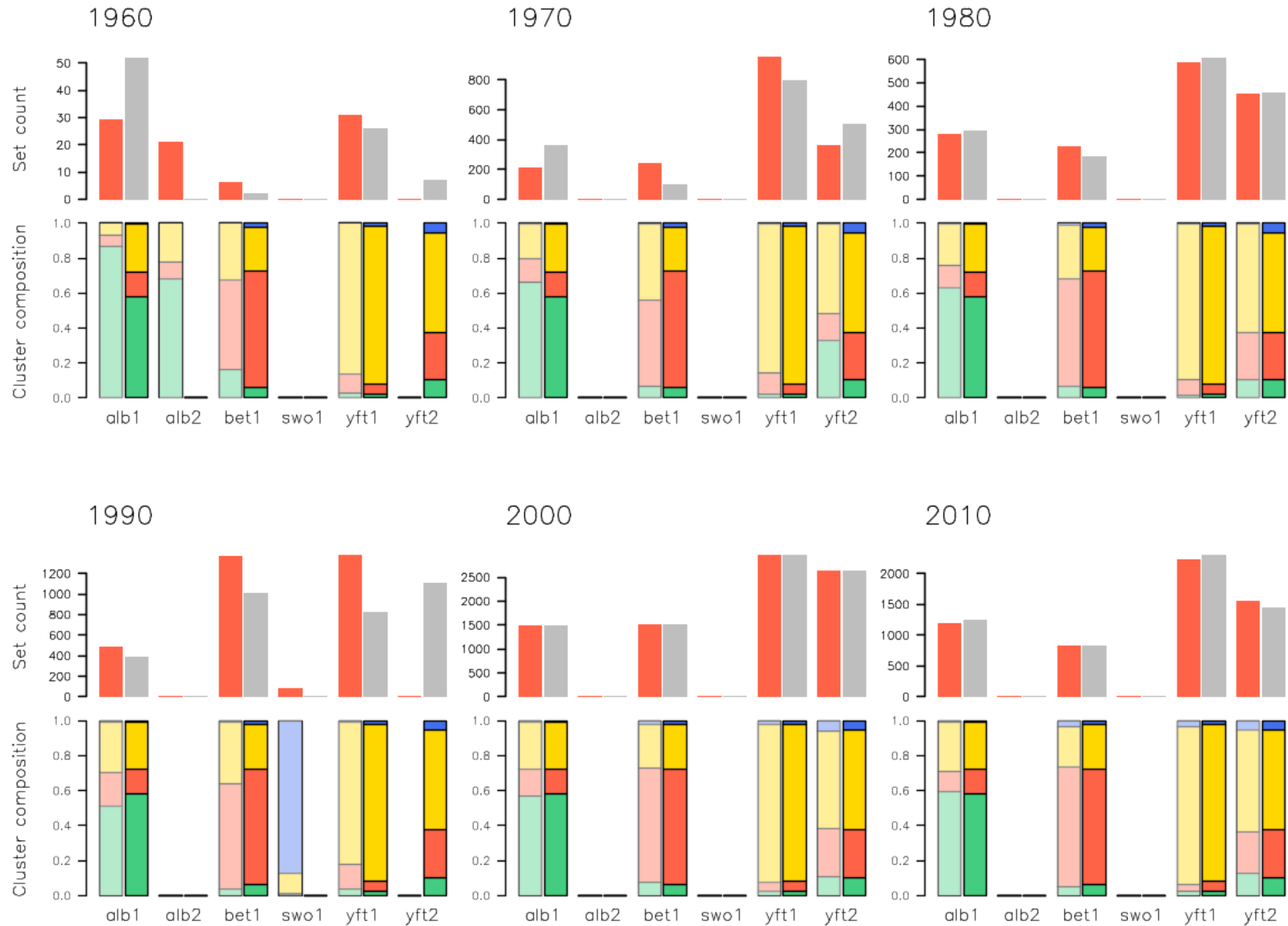
- > Pacific-wide operational longline dataset
- > **K-means** / k-medians / hclust
- > Aggregation: Vessel x month (short) OR cell x month
- > Also tried 'temporal' clusters
- > Best # of clusters: 'elbow' + committee assessment



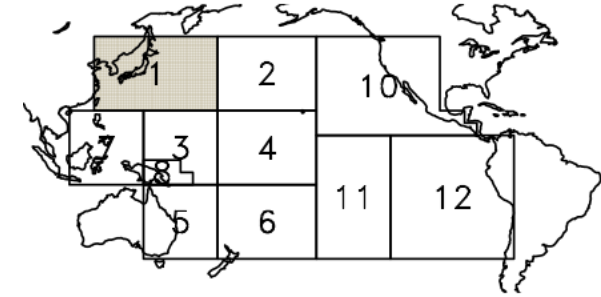
Temporal clusters

Region 1: temporal clusters (4)

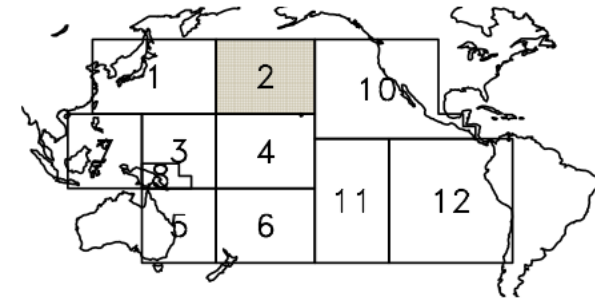
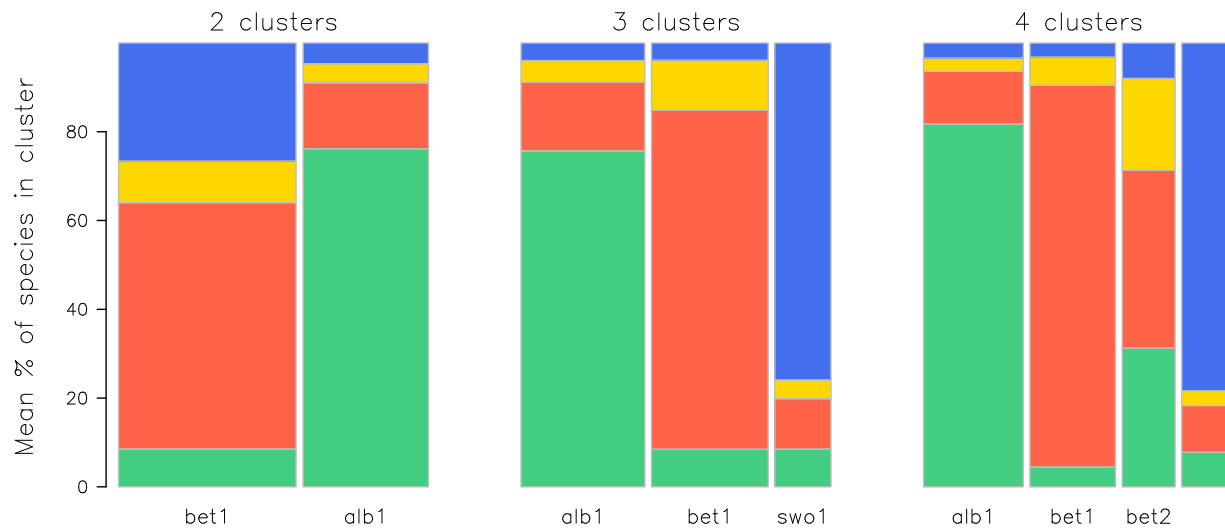
by dec
all



Region 1

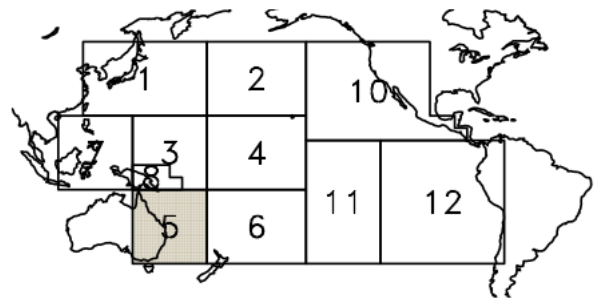
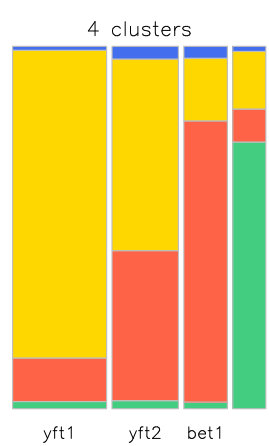
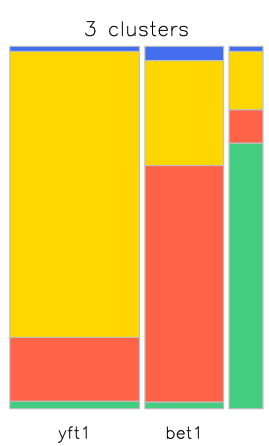
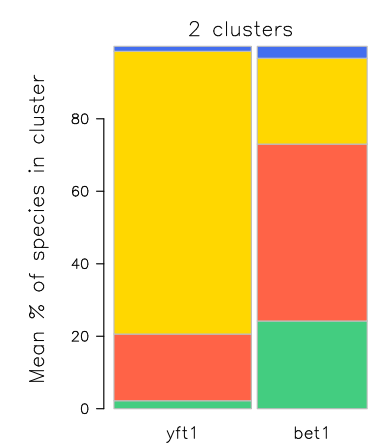
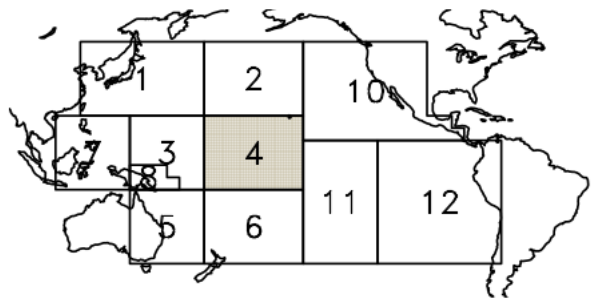
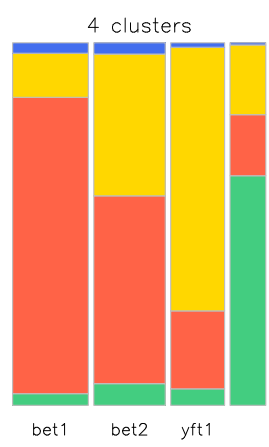
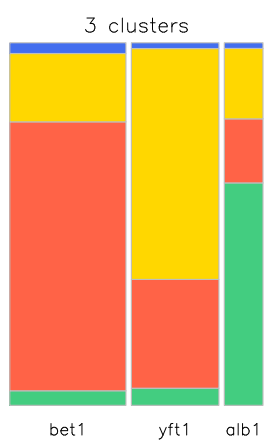
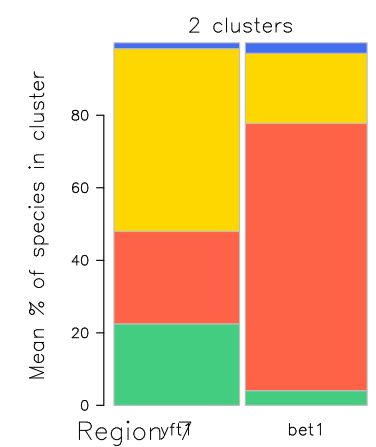
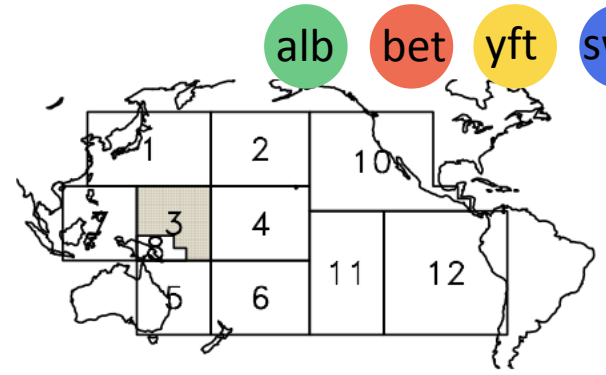
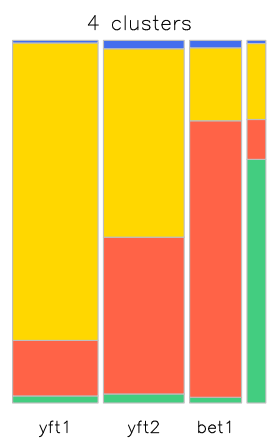
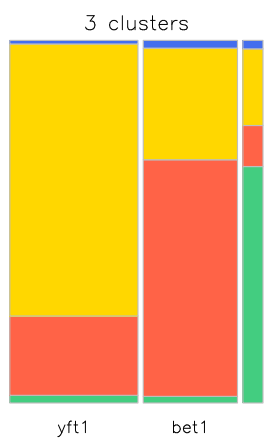
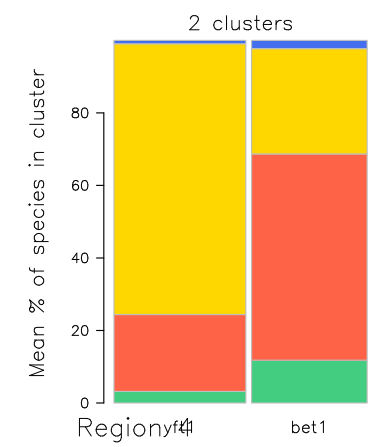


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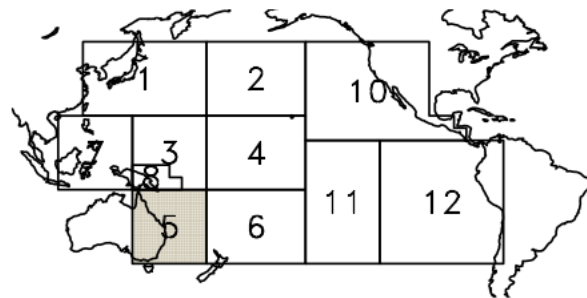
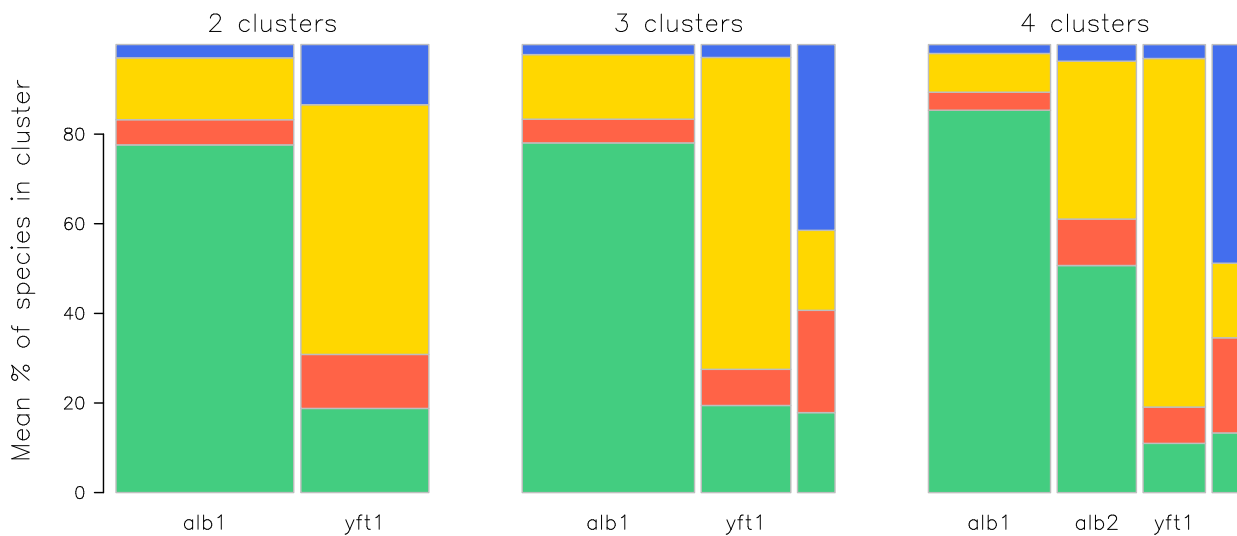


Region 3

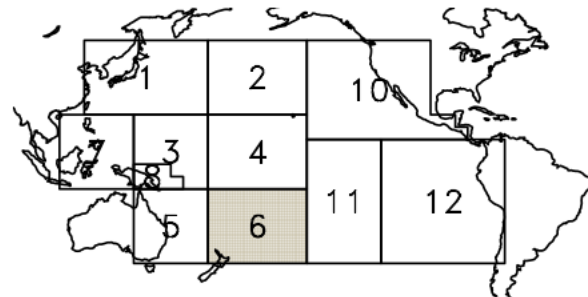
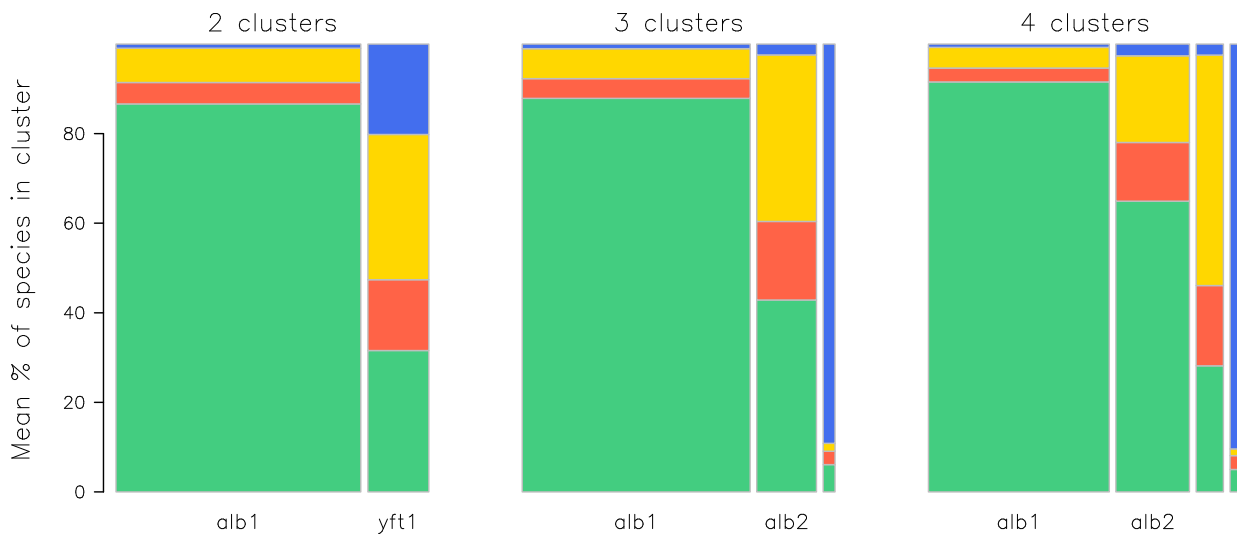
alb bet yft swo



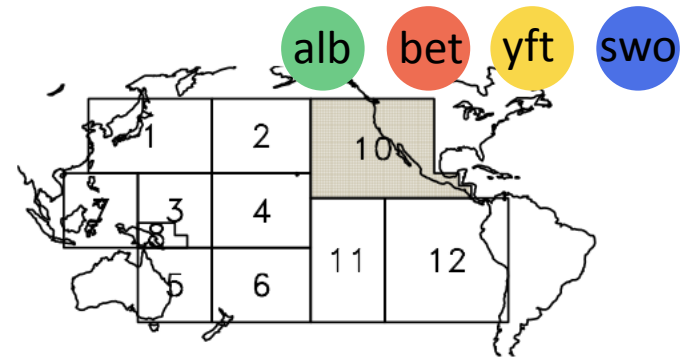
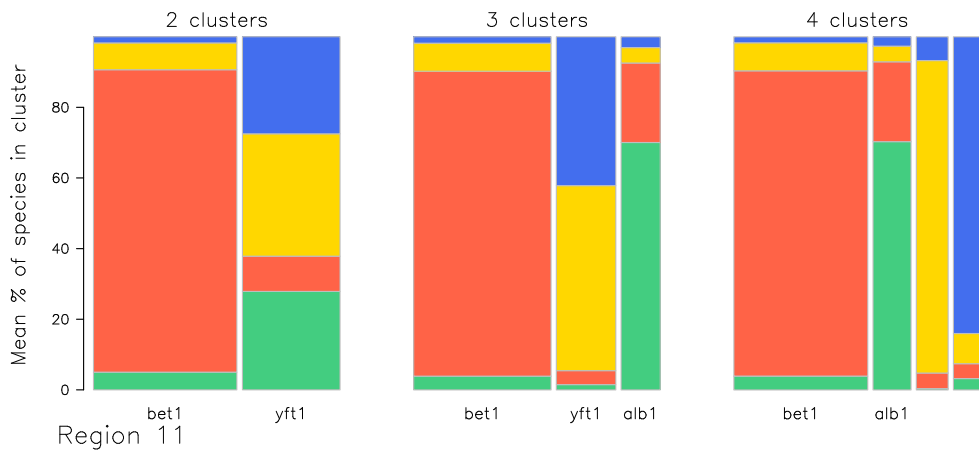
Region 5



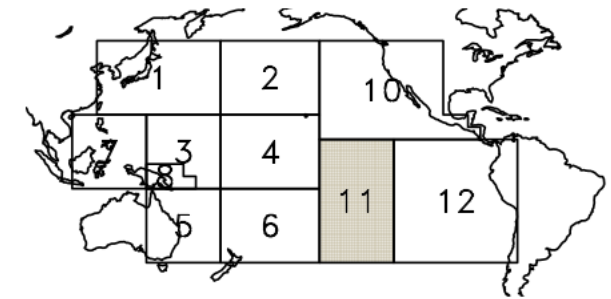
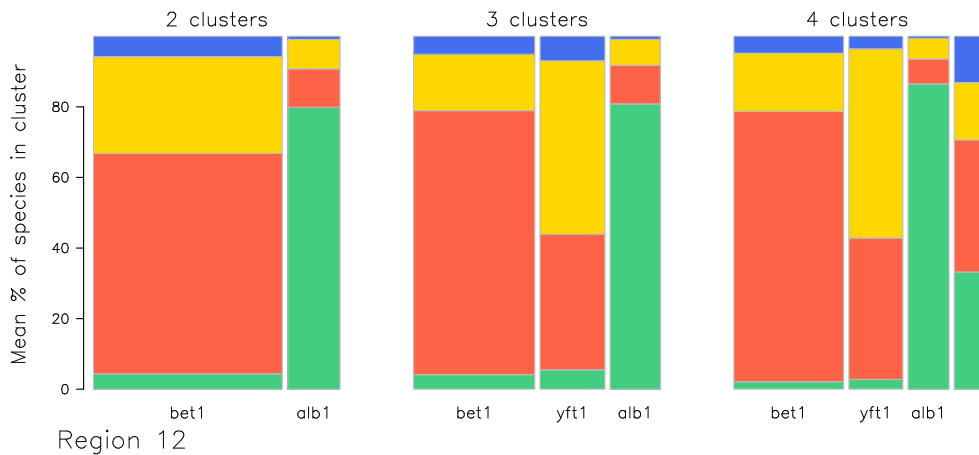
Region 6



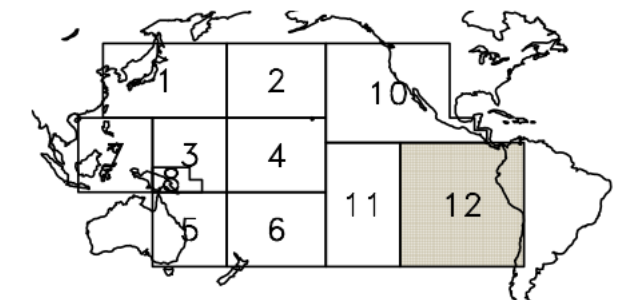
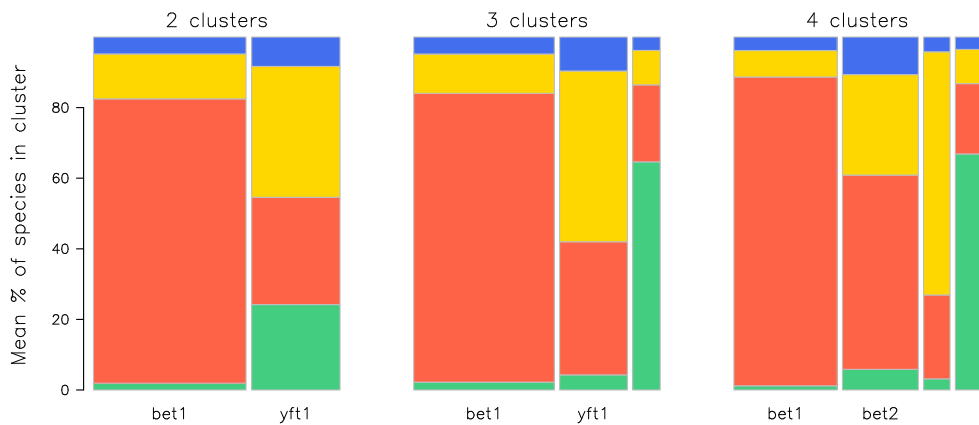
Region 10



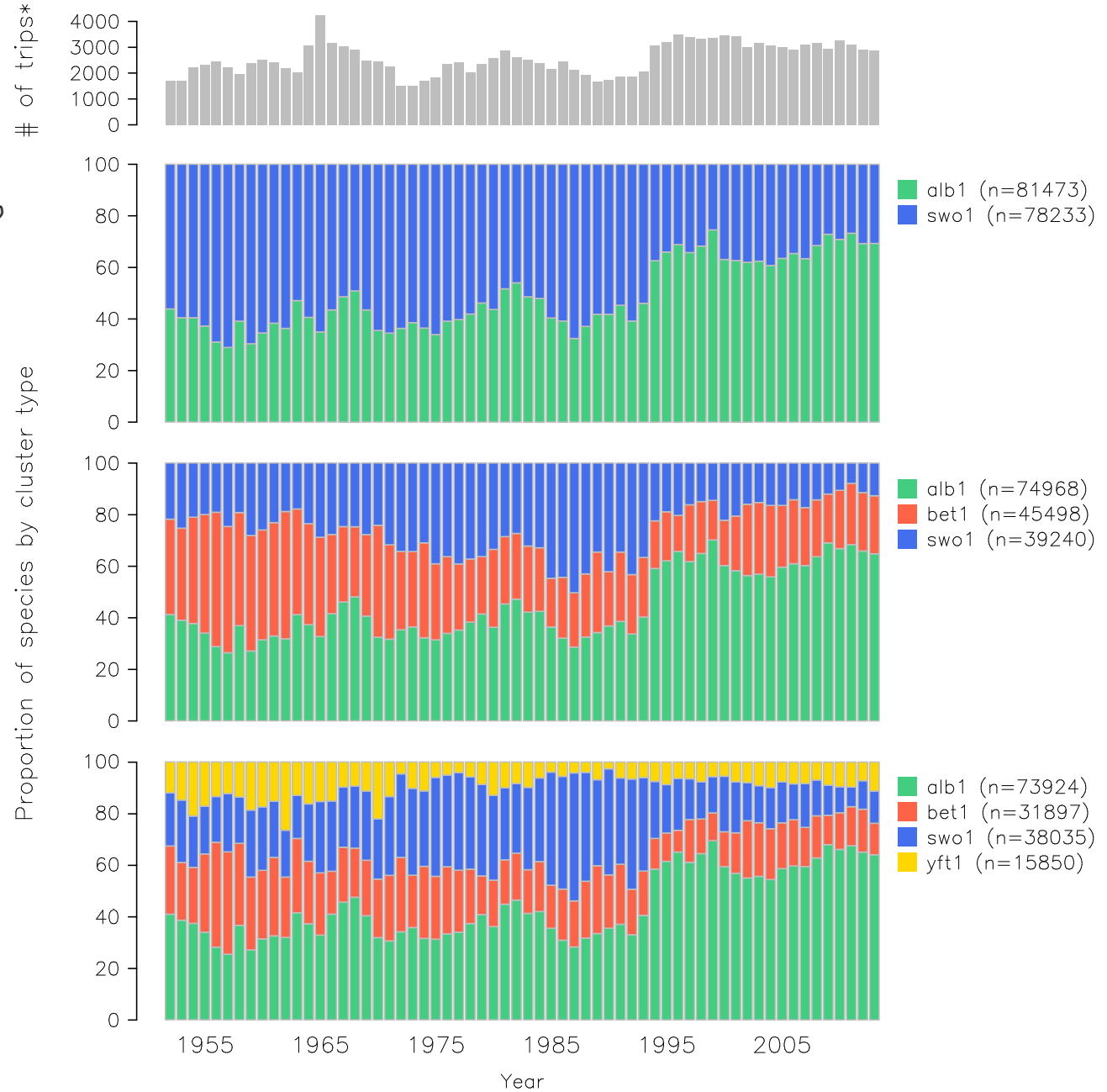
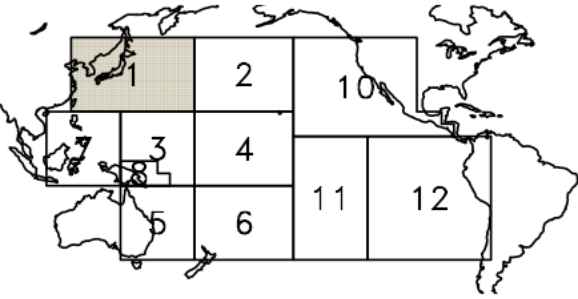
Region 11



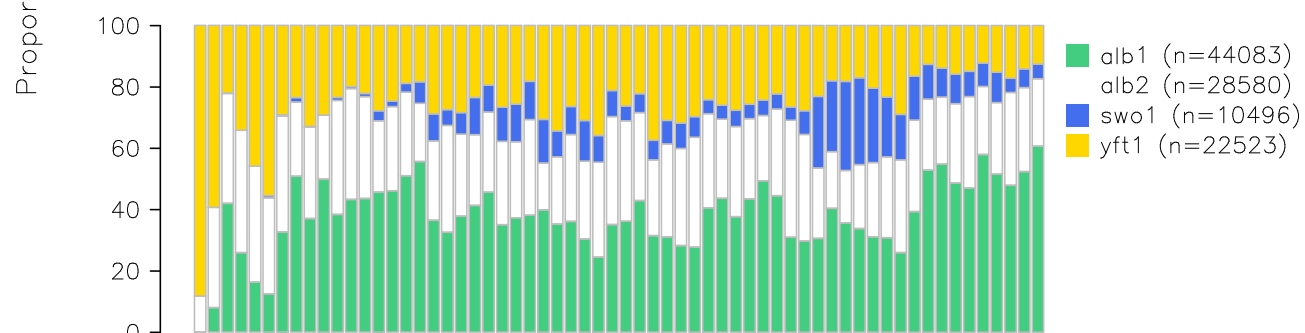
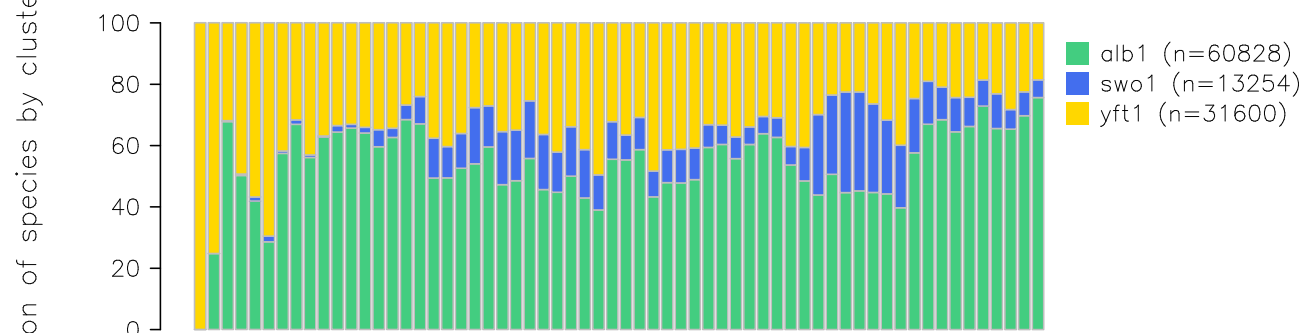
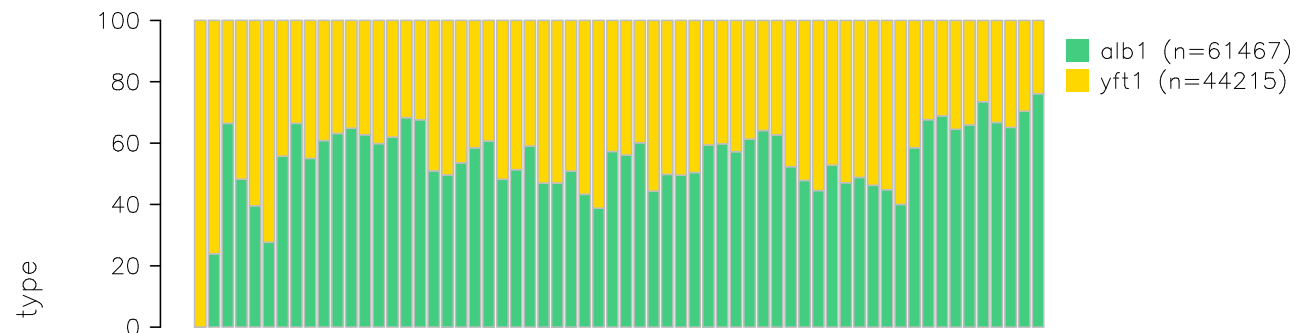
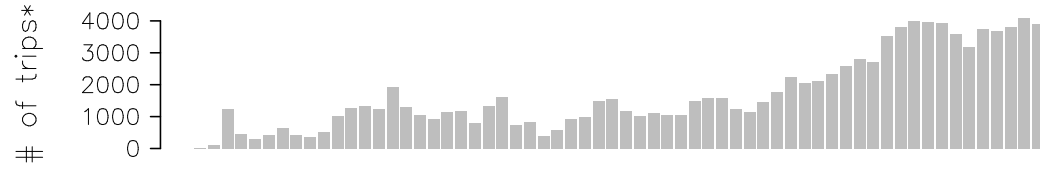
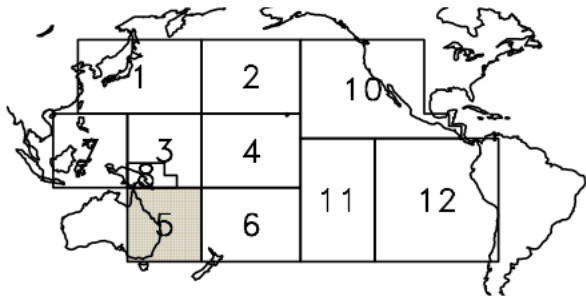
Region 12



Region 1

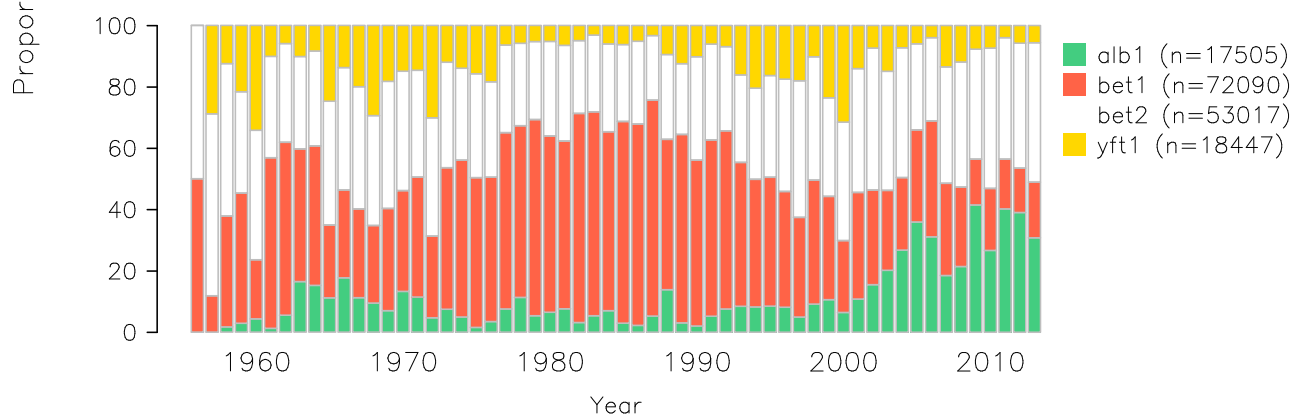
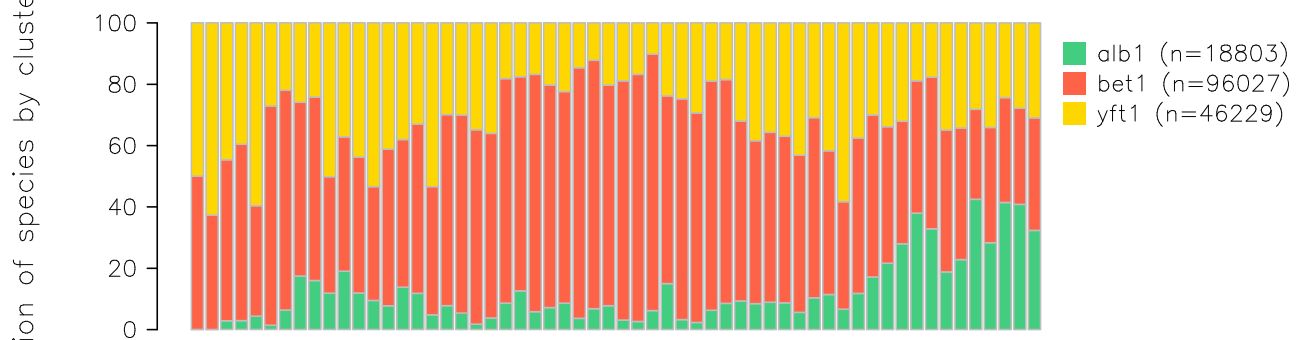
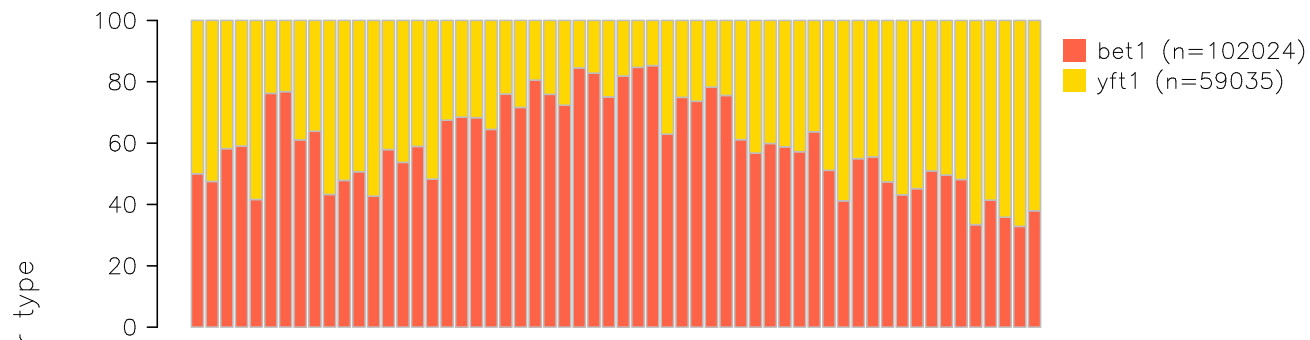
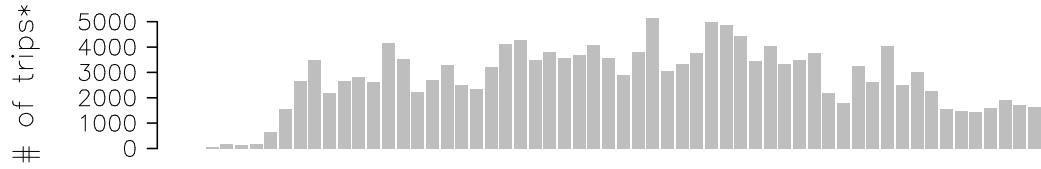
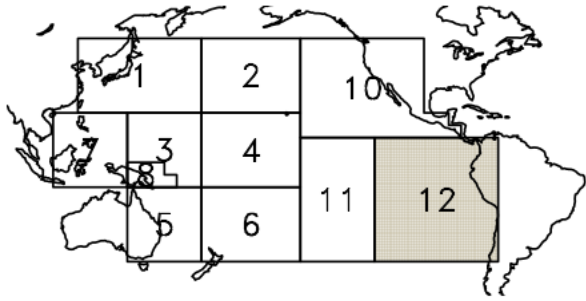


Region 5



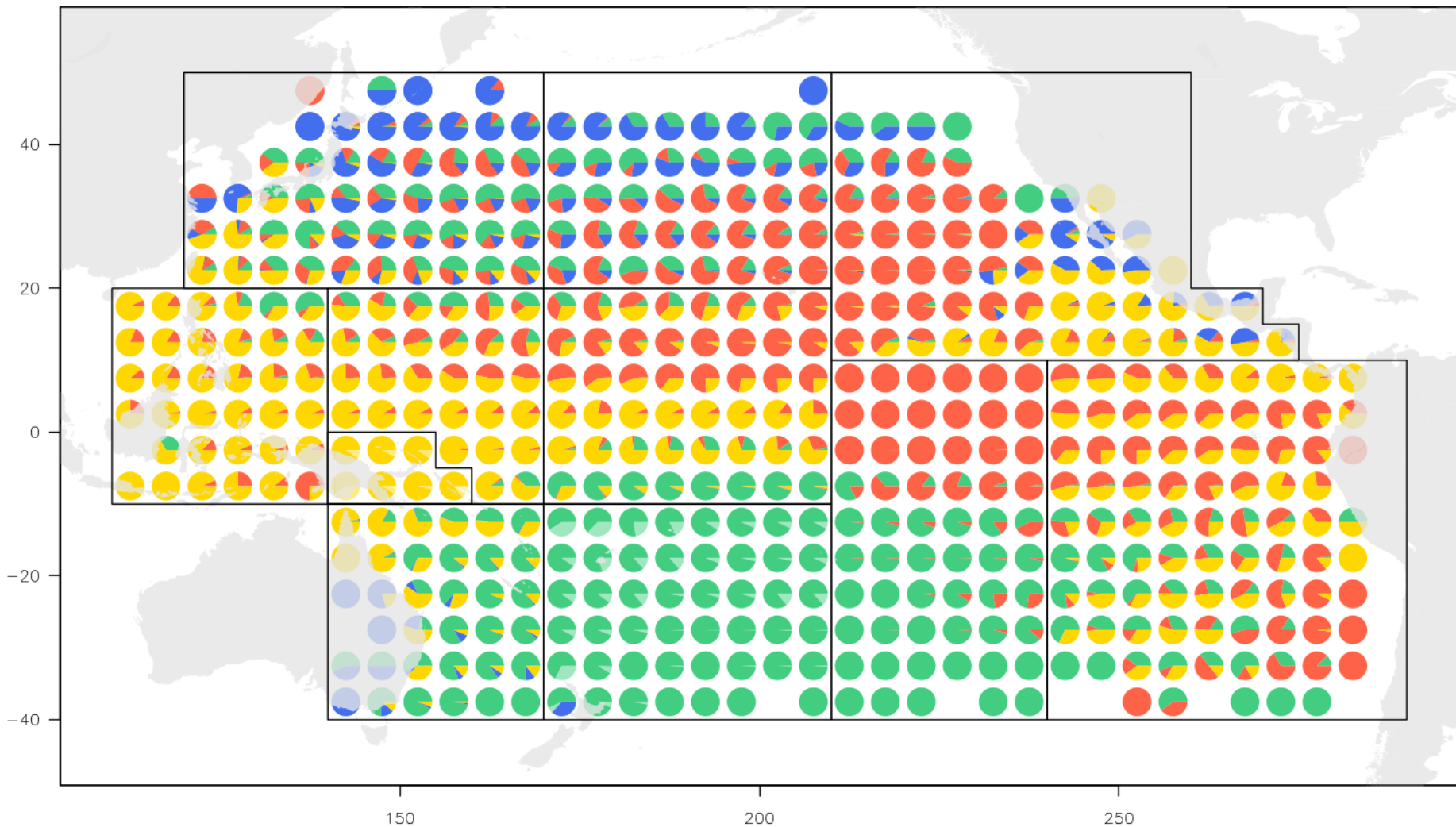
Year

Region 12



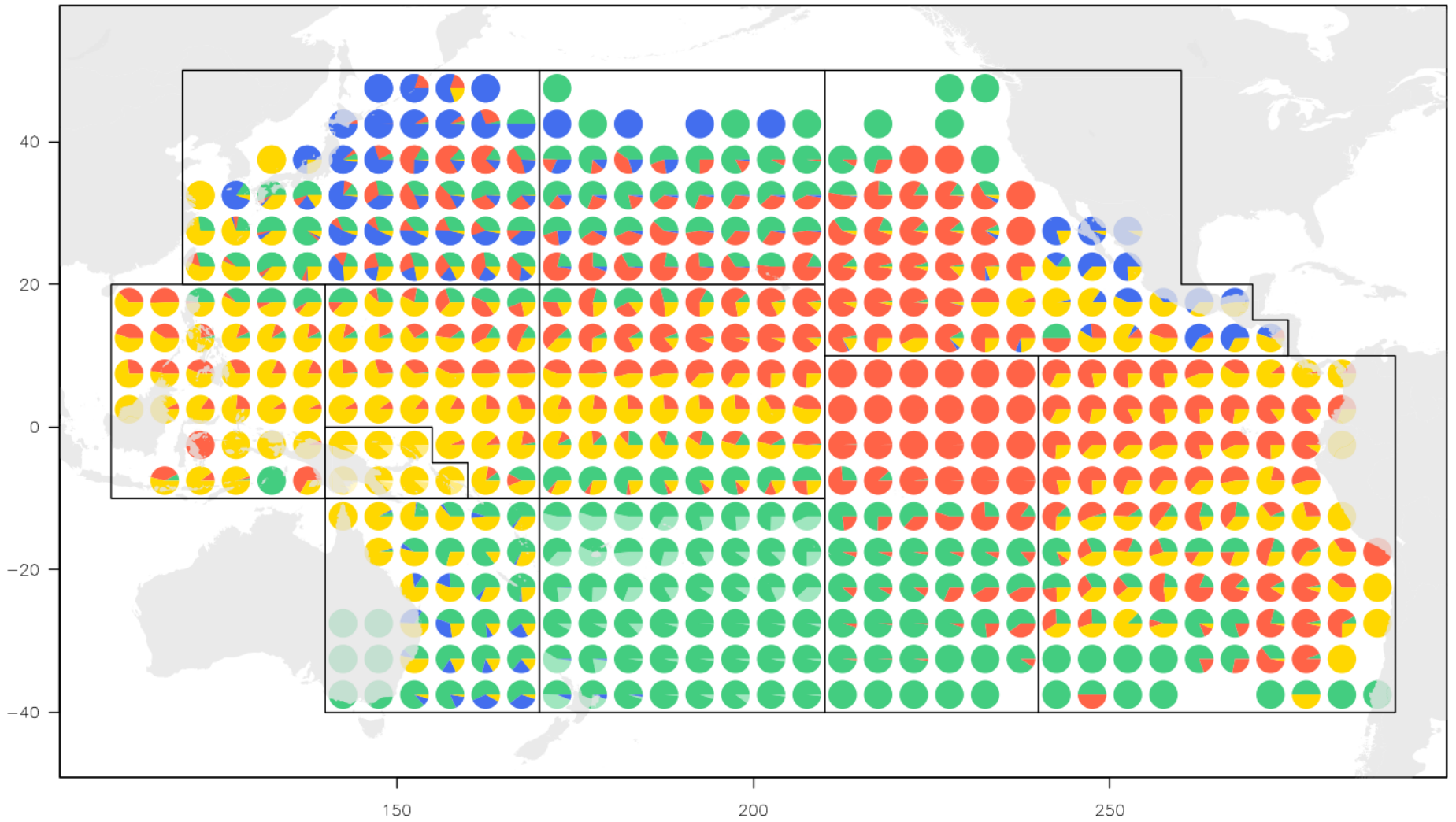
alb bet yft swo

1960



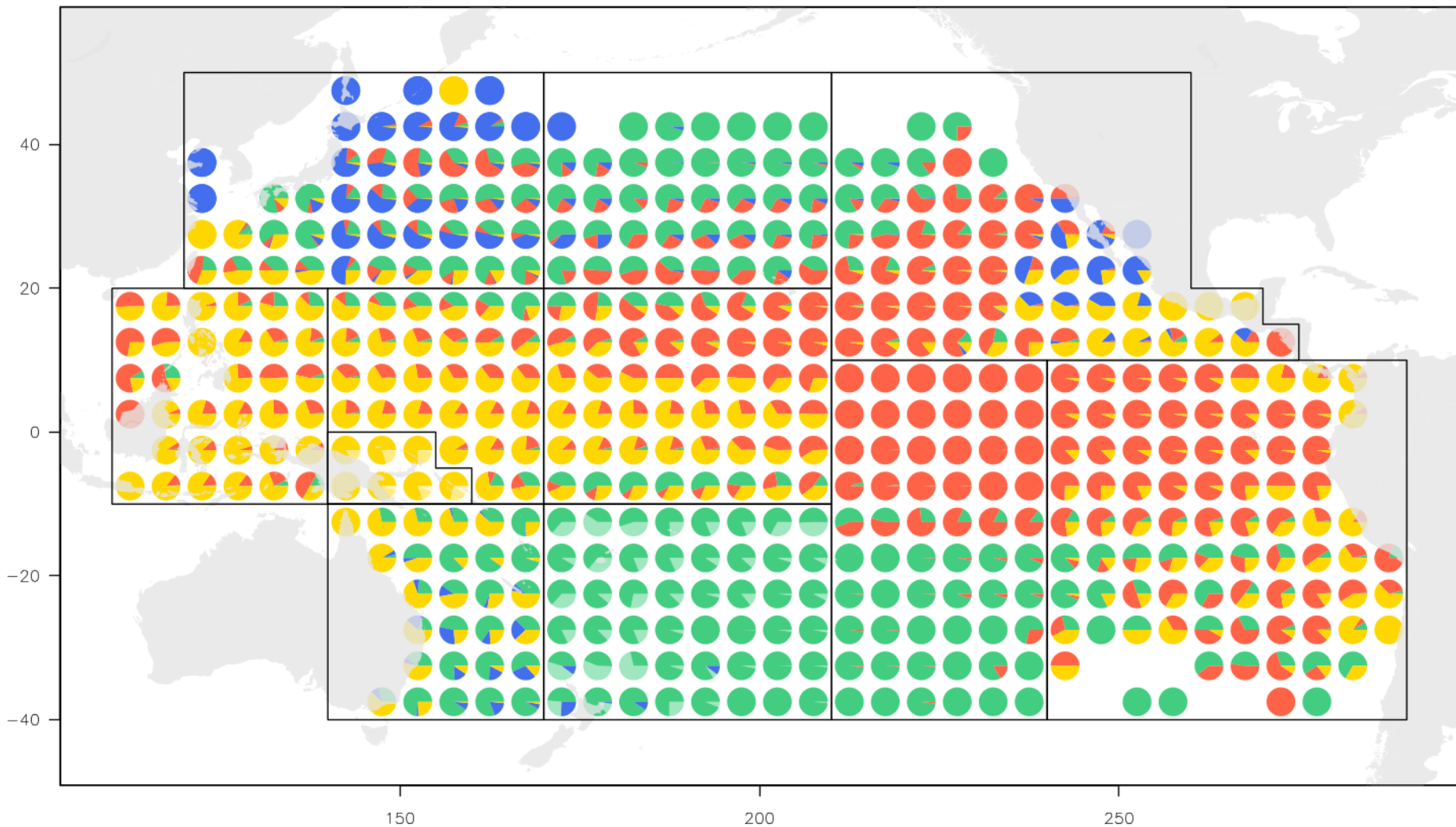
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1970



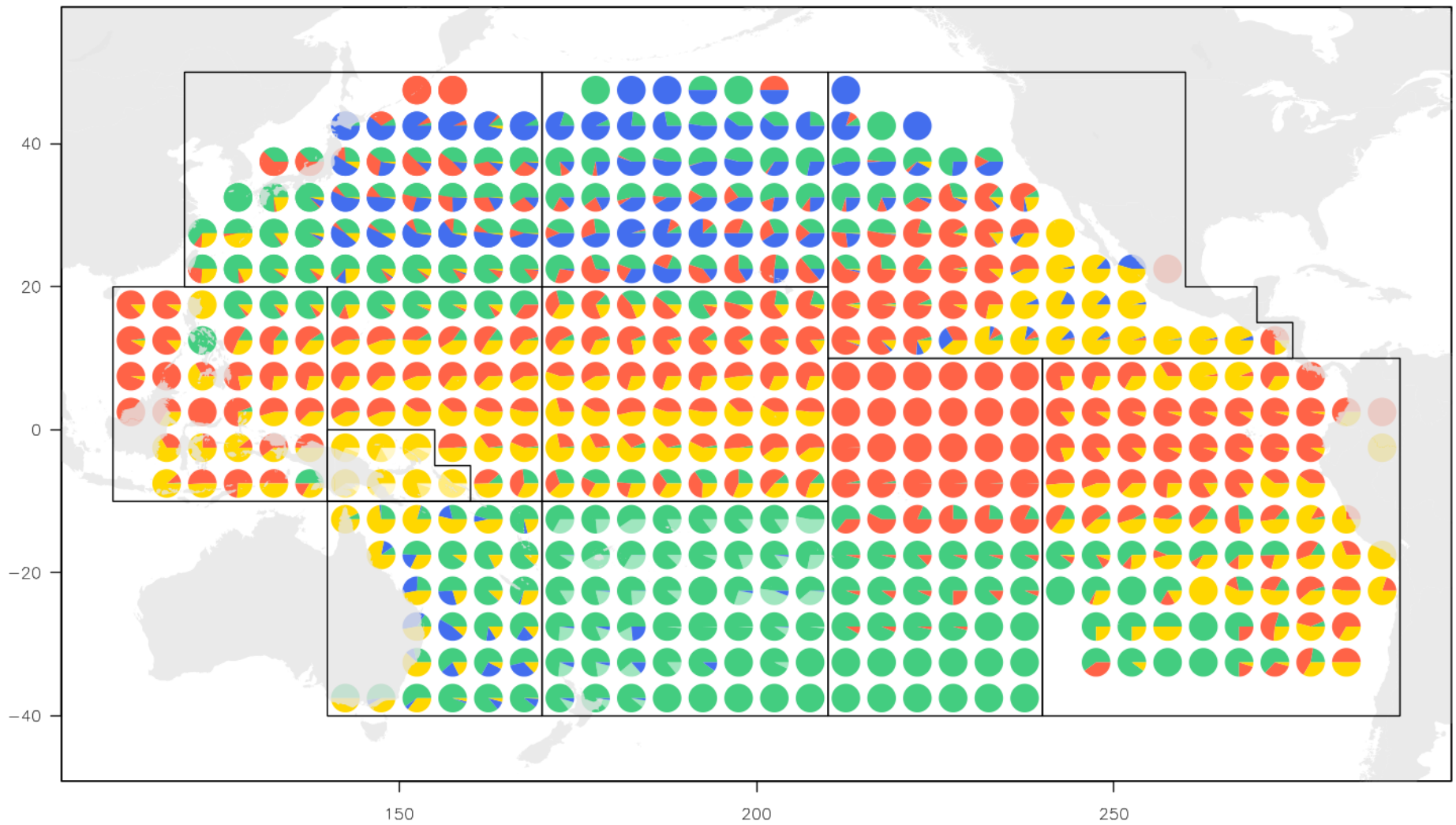
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1980



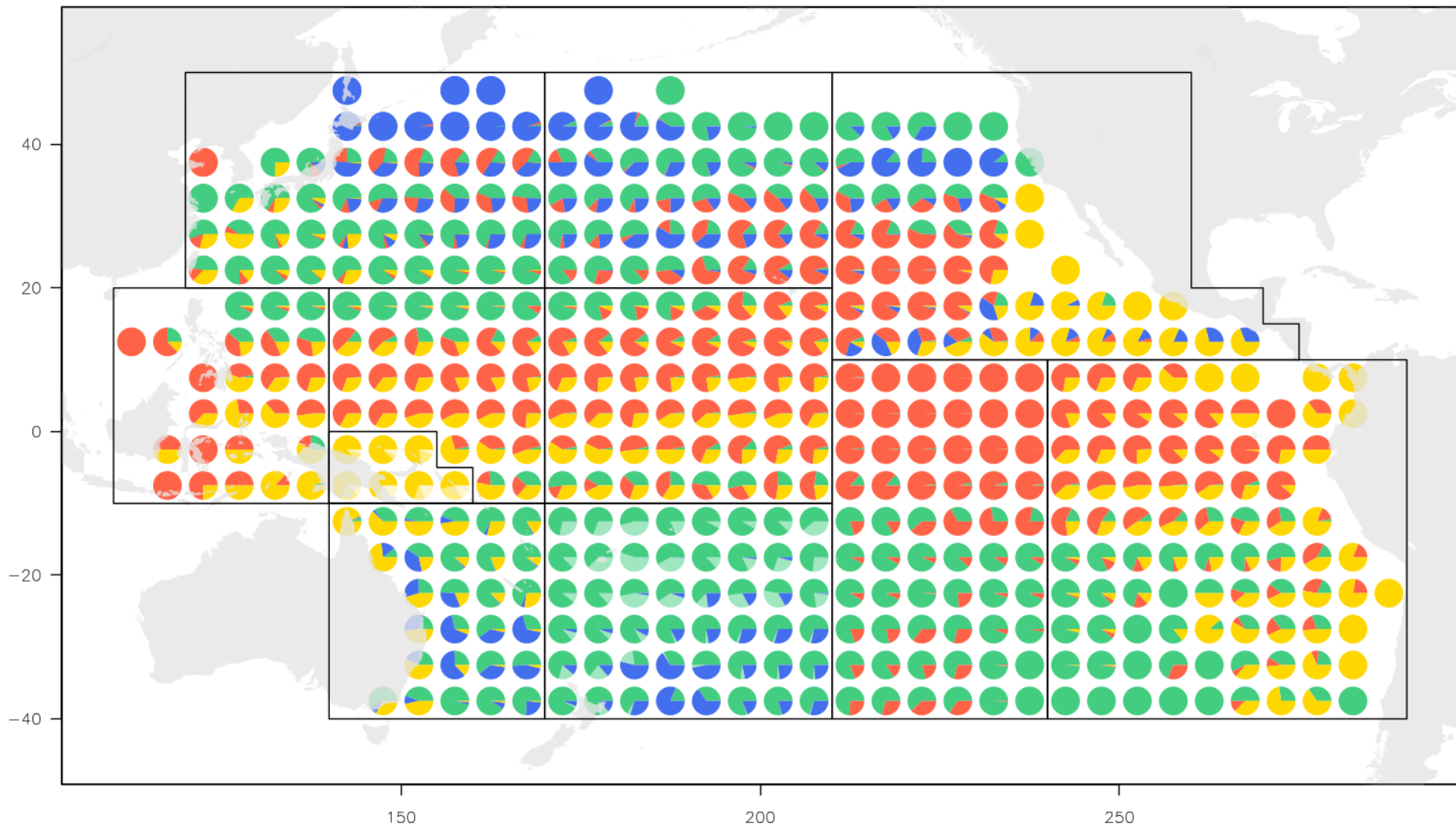
alb bet yft swo

1990



alb bet yft swo

2000



alb bet yft swo

2010

