rmarkdown whiteboard

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$$E_{im} = -\sum_{j=1}^{N_{im}} f_i(j) log_2 f_i(j)$$

Category	Variable	Definition
Port Use	Ports per Trip	Average ports visited per trip
	Ports per Month	Number of ports visited per month
	Port Diversity	Inverse Simpson diversity index of port use across the entire season
	Total Ports*	Total number of ports visited across the entire season
Trip Length	Mean Trip Distance*	Mean distance per fishing trip
	Mean Trip Duration	Mean number of days per fishing trip
	SD Trip Distance*	Standard deviation of distance traveled per trip
	SD Trip Duration	Standard deviation of days per fishing trip
Participation in Other Fisheries	Season Length	Day-of-season on which fisher reached 90% of eventual, cumulative catch
	Proportion Non-Dungeness Revenue	Proportion of revenue from non-Dungeness crab fisheries
	Proportion Non-Dungeness Tickets*	Proportion of all fish tickets from non-Dungeness crab fisheries
	Revenue Diversity	Inverse Simpson diversity index of revenue by fished species
Risk-Taking	Risk Taking	Propensity to fish in high winds. Proportion of trip pursued where the 95% quantile of wind speed was greater than 7.5 m/s
Exploration & Mobility	Location Entropy	Cumulative choice entropy, measuring how likely a vessel is to fish in new versus past locations. The metric used is the 90th percentile of maximum choice entropy per vessel per season
	Home Range Size	Home range defined as the area of the convex hull surrounding all of a vessel's VMS pings during the season, excluding the top 5% spatial outliers
Vessel Size	Vessel Length in Feet	Registered length of the fishing vessel

Table 1: Fisher behavioral and demographic variables derived and used in the clustering and random forest analyses. Variables with asterisks were removed from the final clustering analysis due to high collinearity with other variables.

$$C = dC_d + RC_c \tag{1}$$

$$C_d = C_b + C_f + C_v \tag{2}$$

$$C_b = \begin{cases} N(66, 73) & 0 < \text{length} < 30 \\ N(178, 269) & 30 <= \text{length} <= 50 \\ N(261, 188) & \text{otherwise} \end{cases} \tag{3}$$

$$C_f = \begin{cases} N(47, 51) * r_s & 0 < \text{length} < 30 \\ N(78.5, 158) * r_s & 30 <= \text{length} <= 50 \\ N(173, 96) * r_s & \text{otherwise} \end{cases} \tag{4}$$

$$C_v = \begin{cases} N(46, 62) & 0 < \text{length} < 30 \\ N(47, 62) & 30 <= \text{length} <= 50 \\ N(72, 33) & \text{otherwise} \end{cases} \tag{5}$$

$$C_c = \begin{cases} N(0.15, 0.1) & 0 < \text{length} < 30 \\ N(0.24, 0.11) & 30 <= \text{length} <= 50 \\ N(0.31, 0.1) & \text{otherwise} \end{cases} \tag{6}$$