Spatial Analysis Figures

Area 08 Chum Salmon

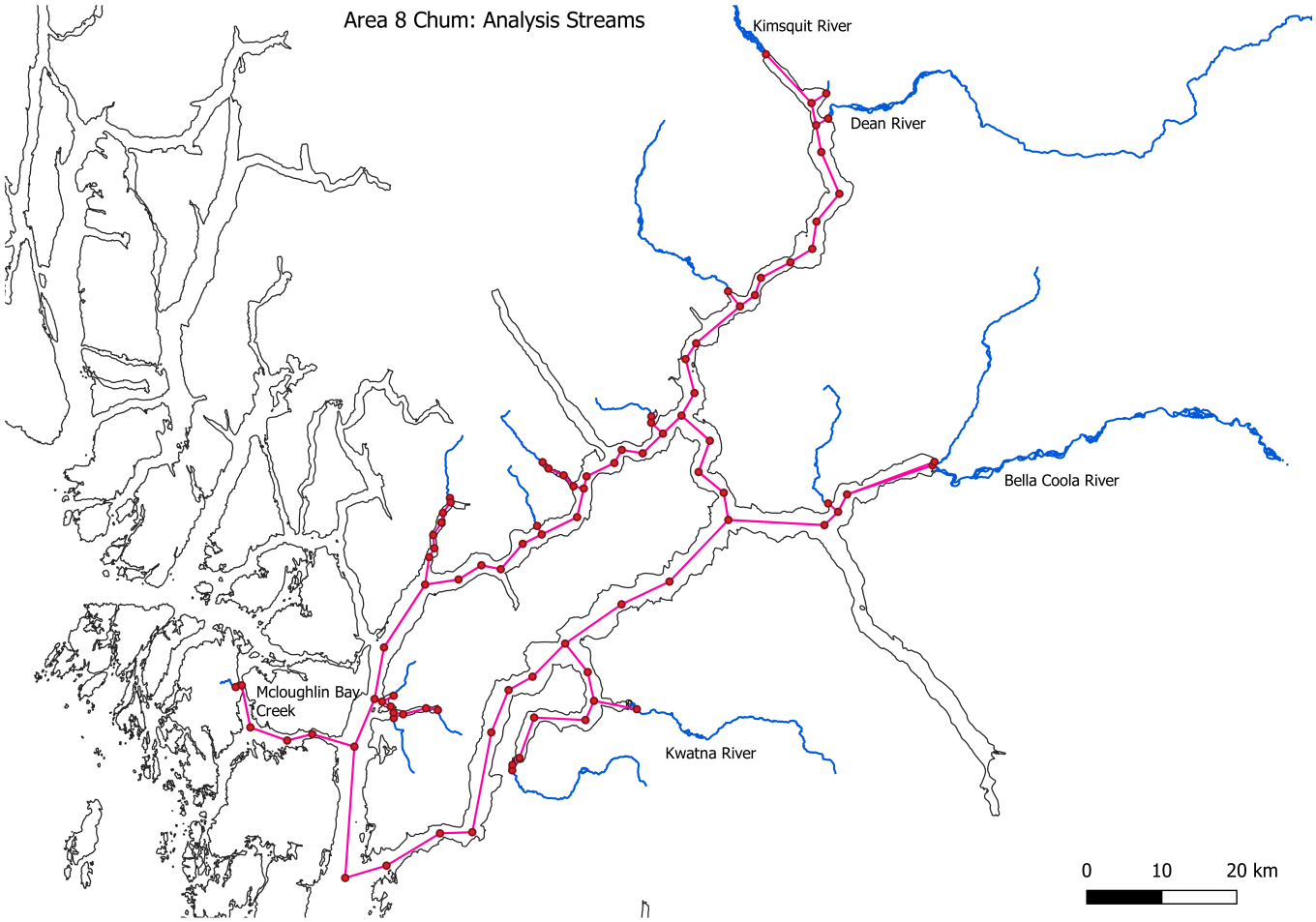
Coastland

2022-11-30

Contents

Study area

Area 8



Summary statistics

Bubbleplot of escapement by enhancement rank

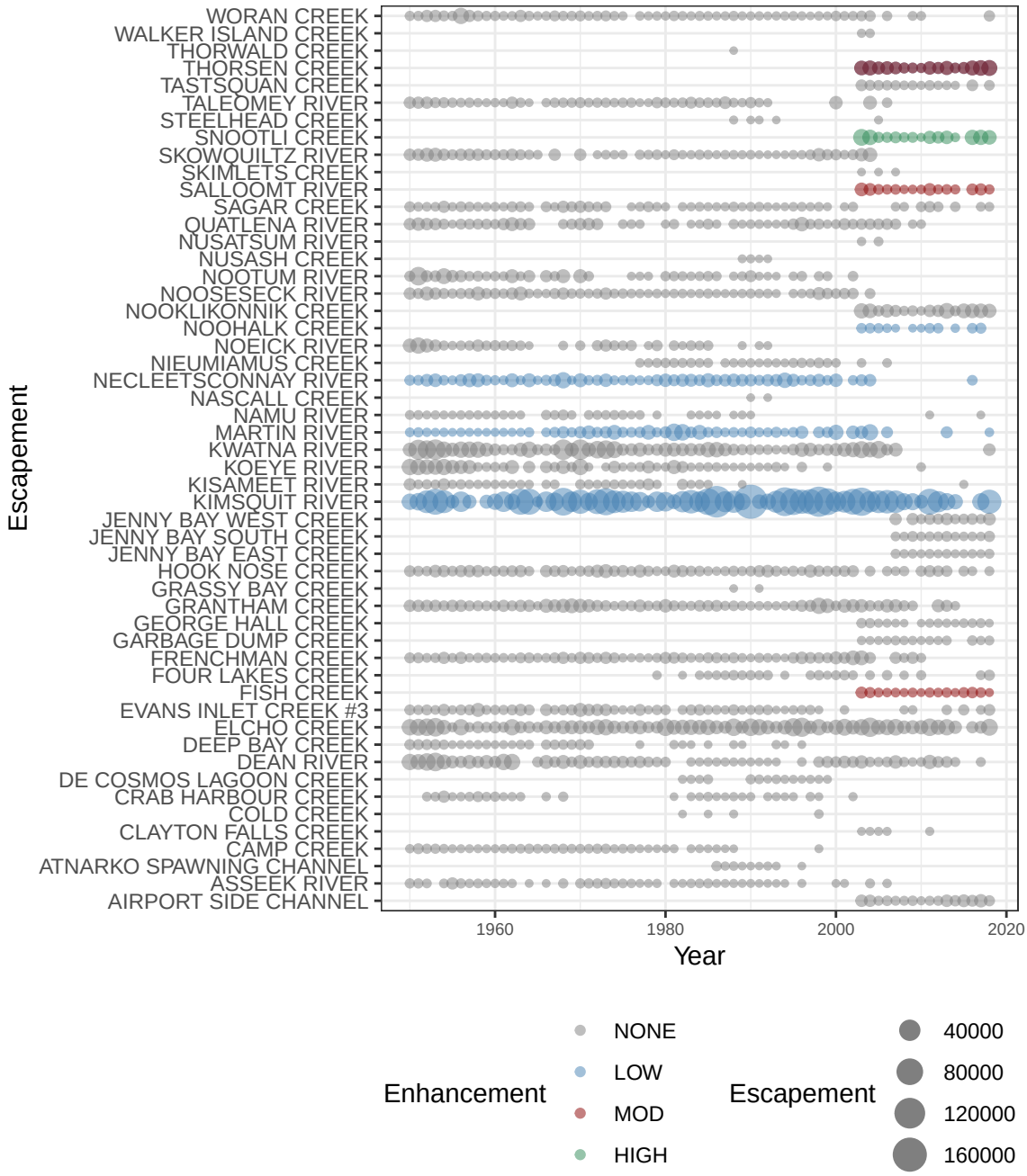


Figure 1: Escapement to area streams by enhancement rank.

Plot of total releases to area

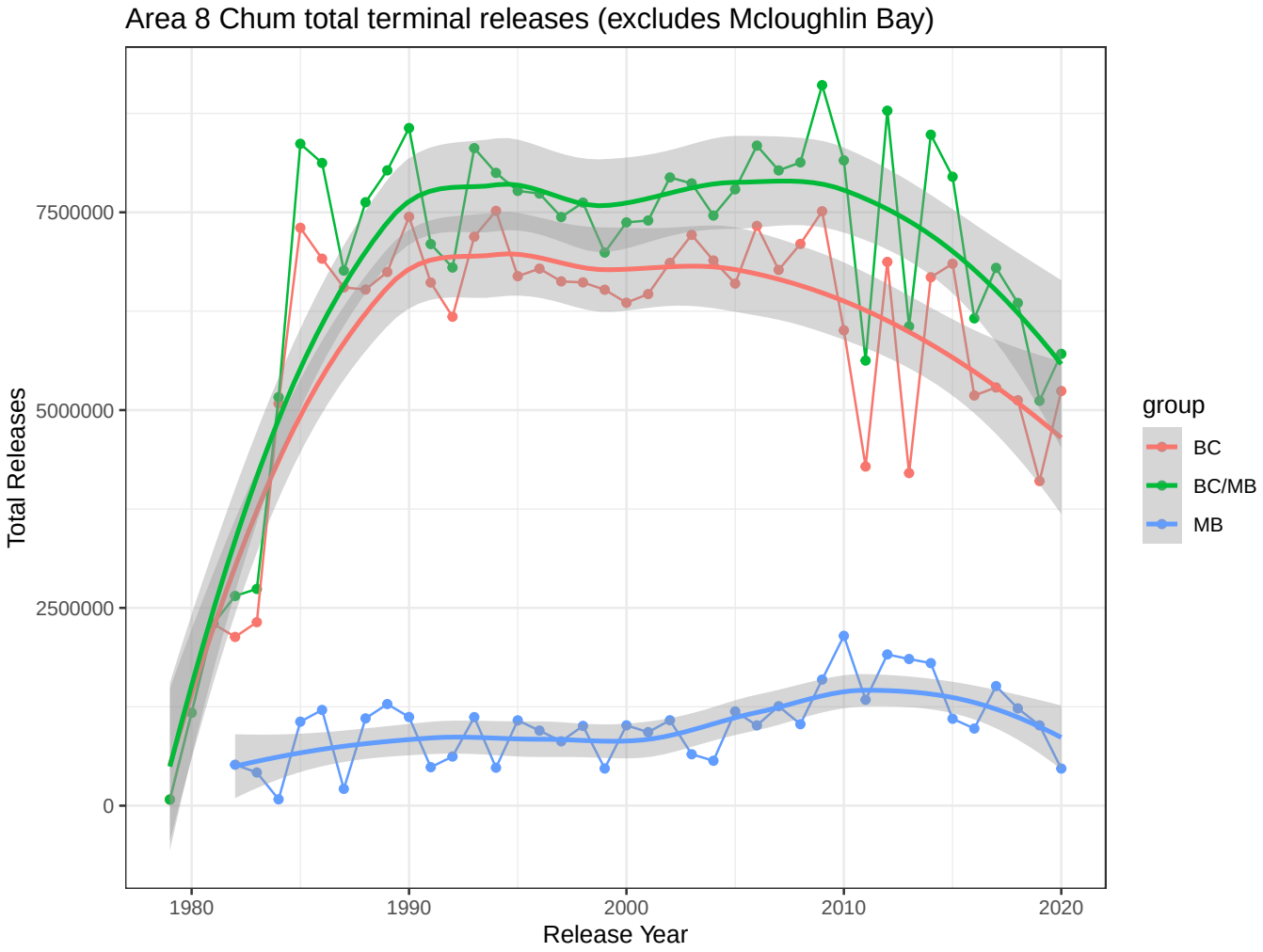


Figure 2: Total releases for Area 8 (not including McLoughlin Bay)

Escapement by enhancement rank per system

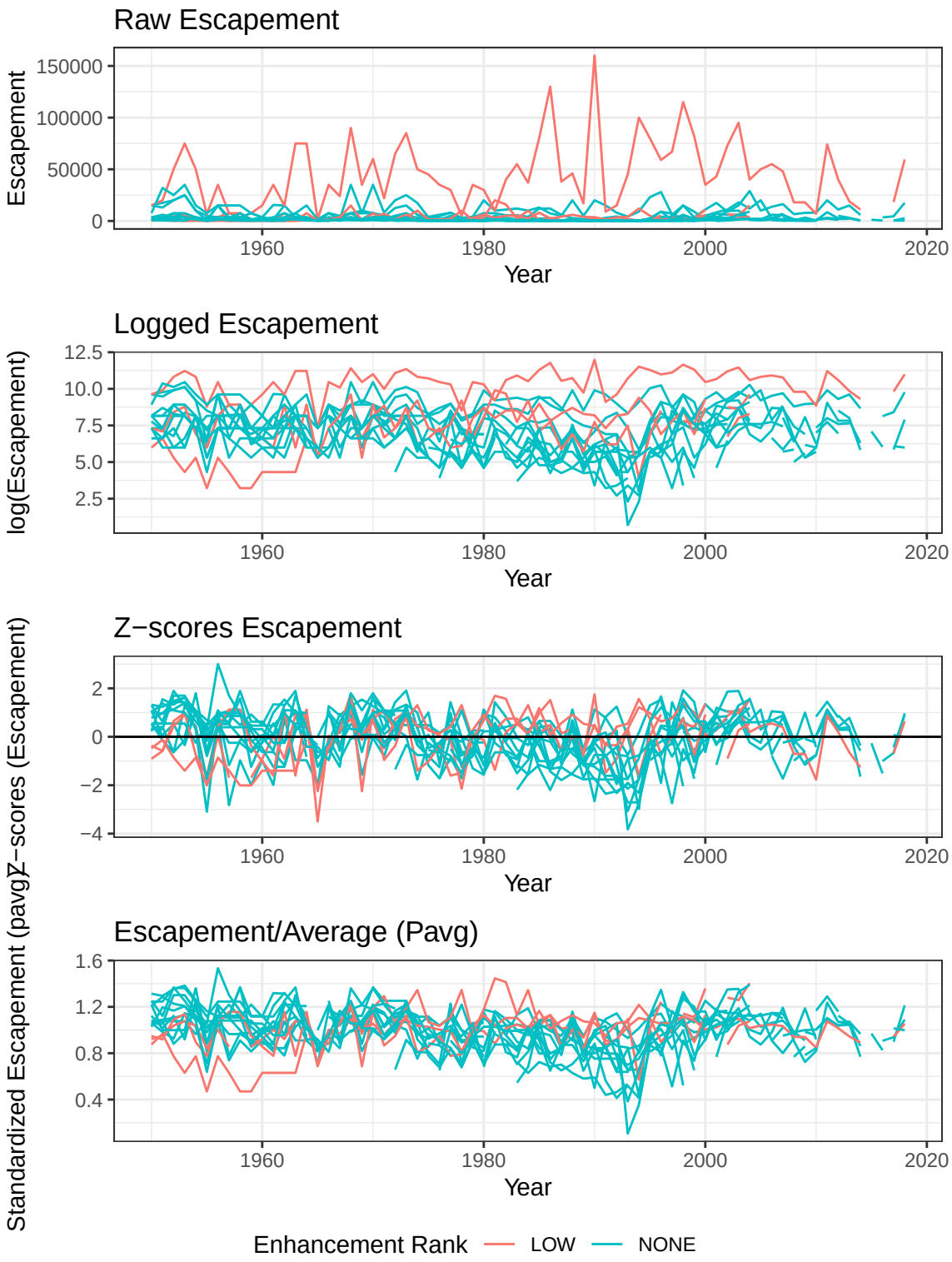


Figure 3: Various plots for escapement and transformations.

Moving average and LOESSS fit on enhancement ranking of log escapements

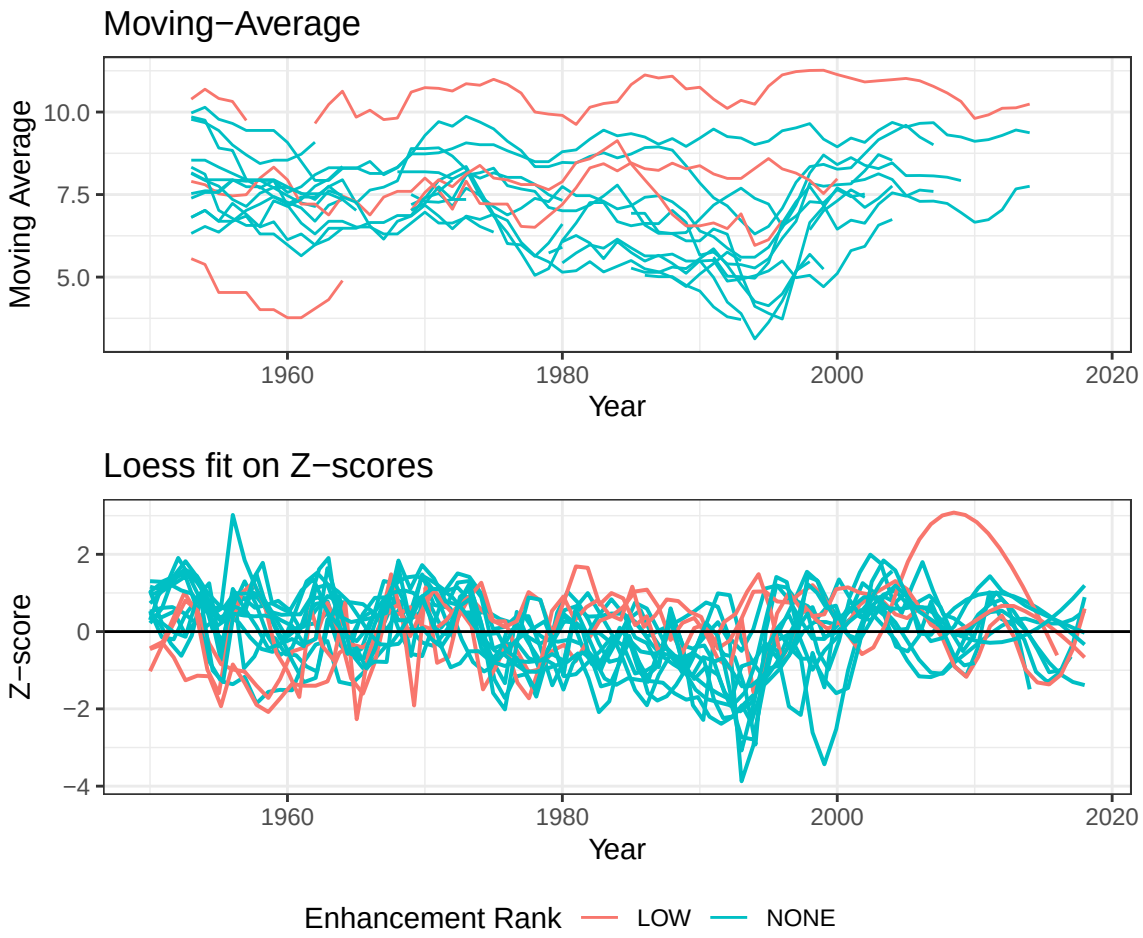


Figure 4: Moving average and LOESS fits on logged escapement by enhancement ranking.

Escapement to streams by enhancement rank

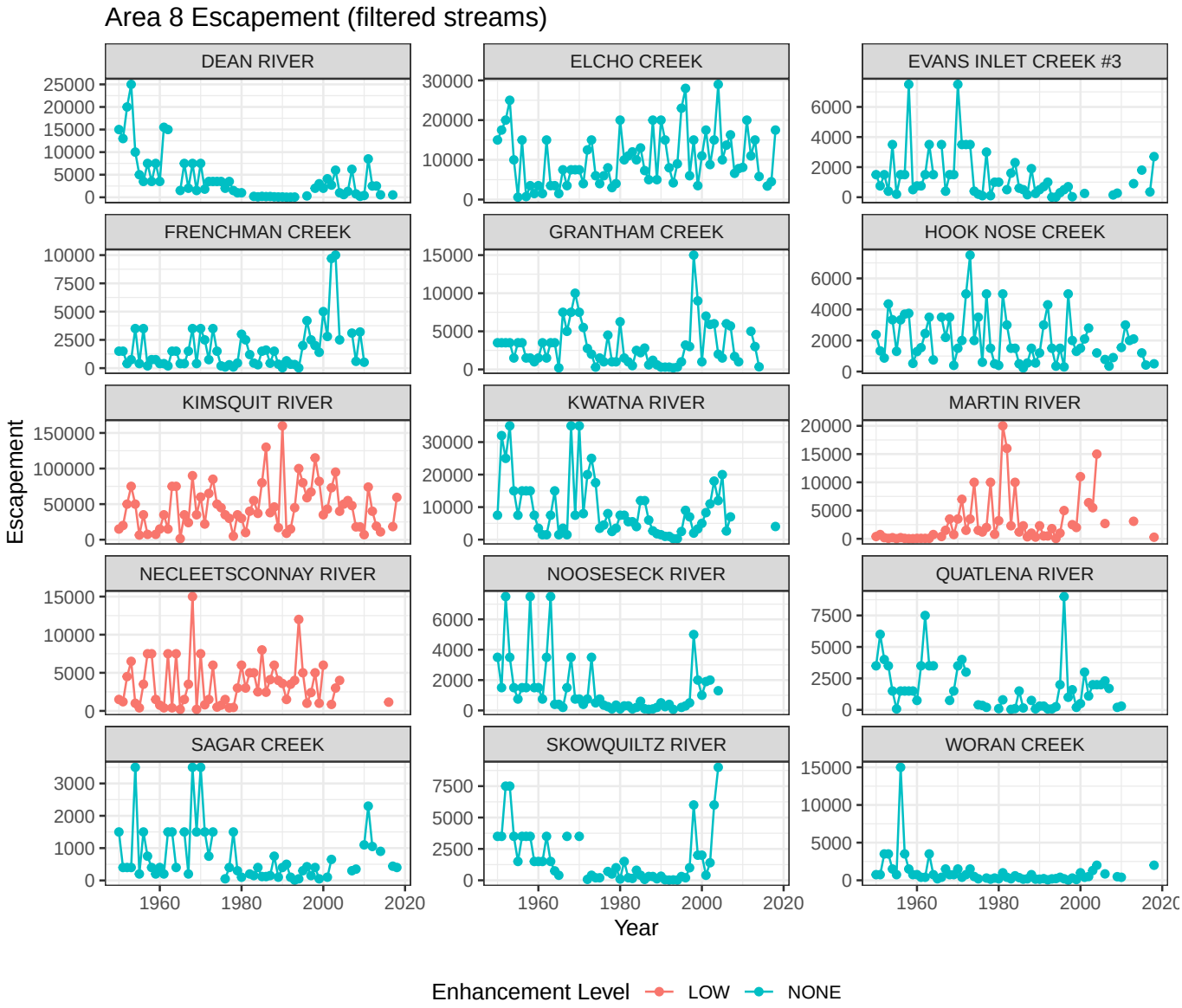


Figure 5: Facet plot of escapements by enhancement level

Facet plot of all releases in Area 8

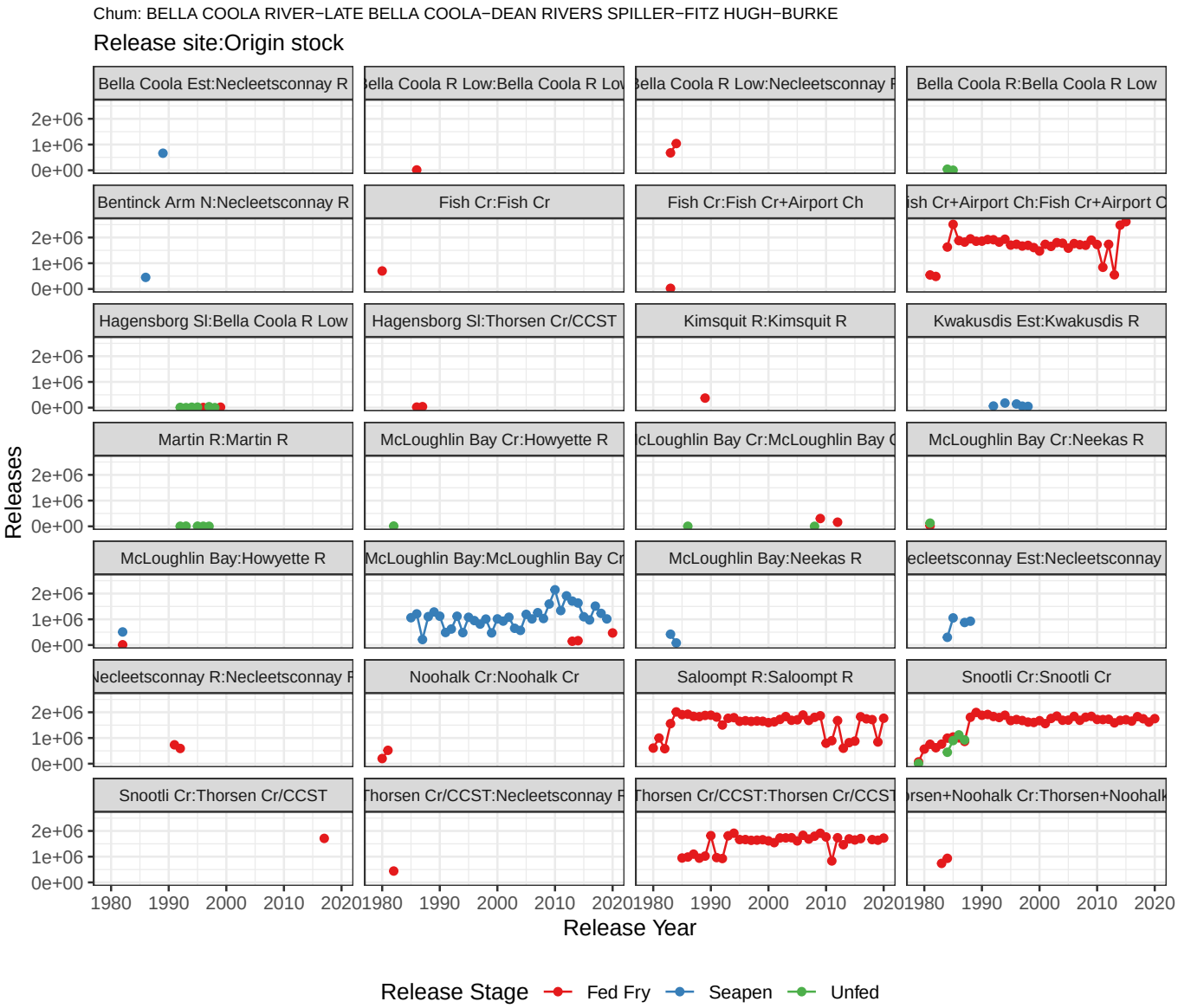


Figure 6: Facet plot of all releases in Area 8

Recruits per spawner by system

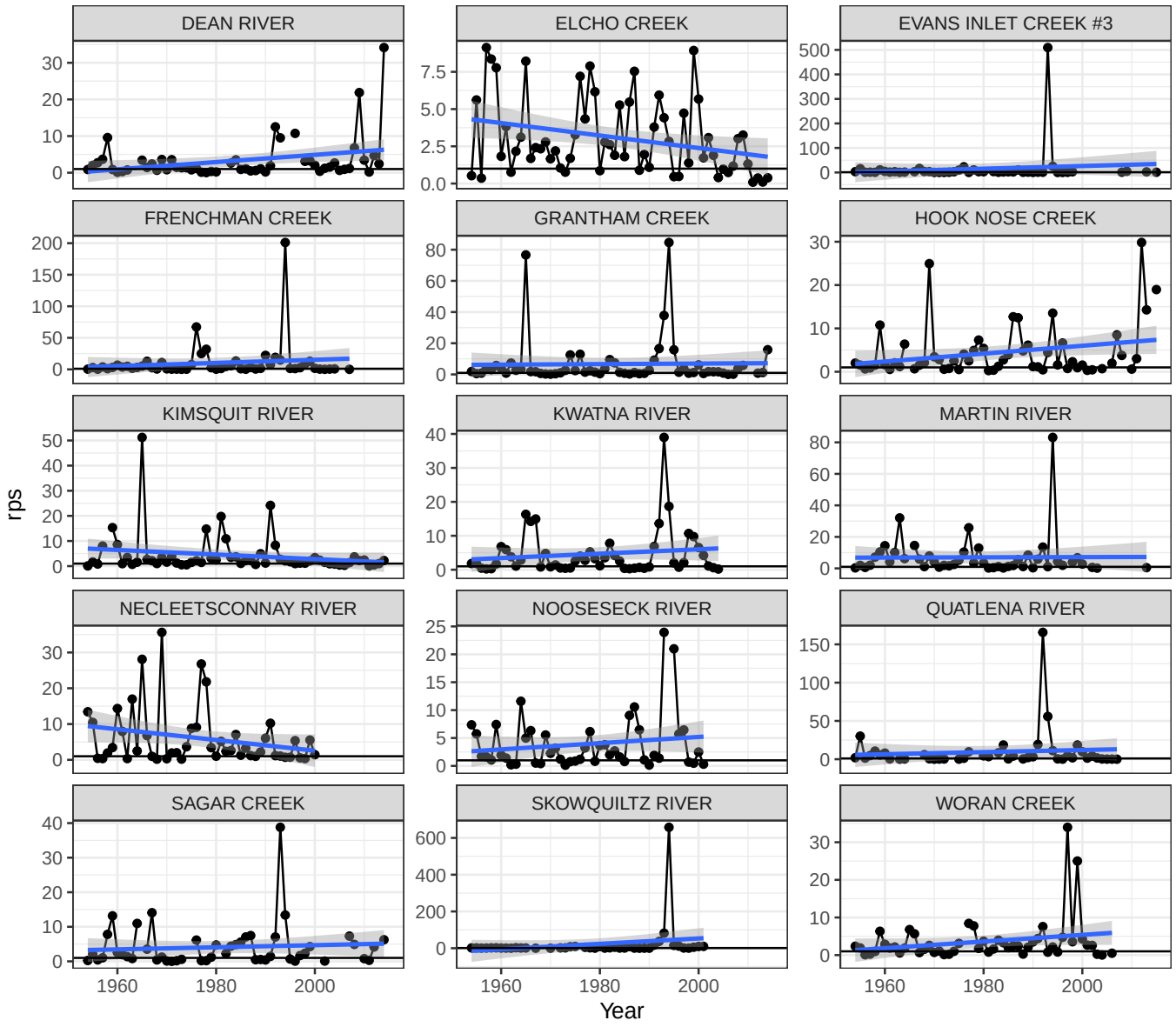


Figure 7: Recruits per spawner by system

Log recruits per spawner by system

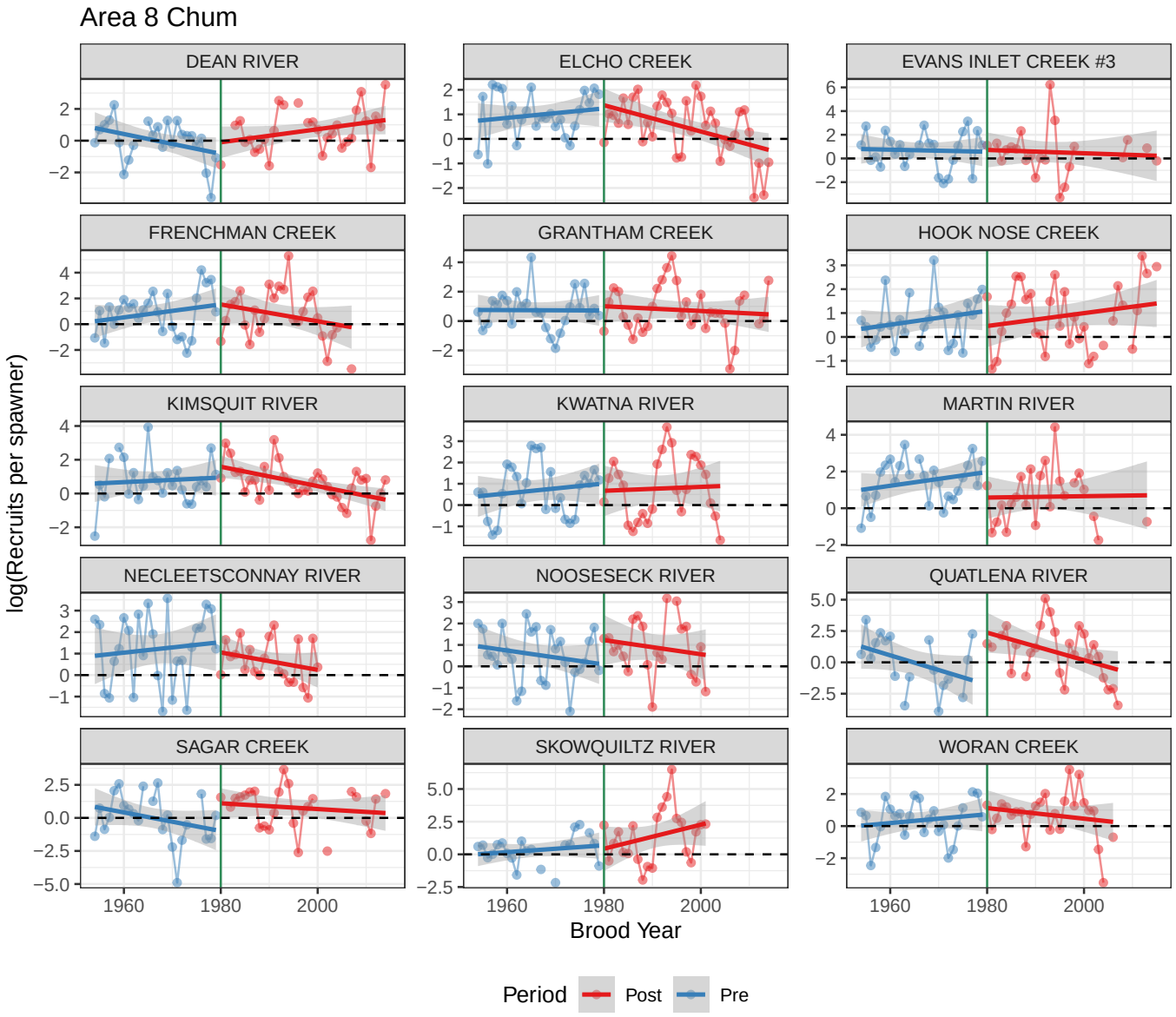


Figure 8: Log recruits per spawner by system

Boxplot of log RPS by system

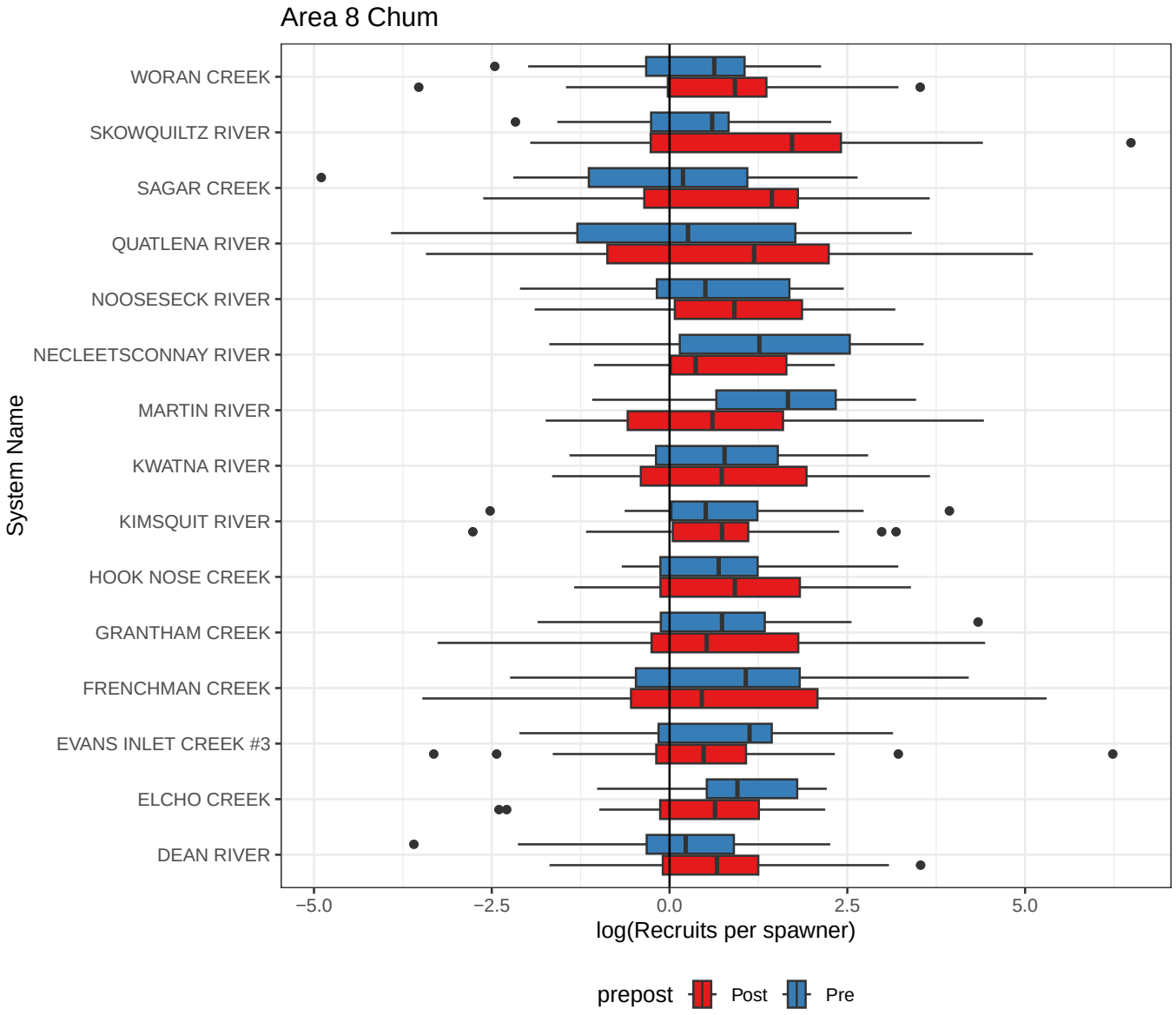


Figure 9: Boxplot of log recruits per spawner by system

Correlation analyses

Cross correlation plots

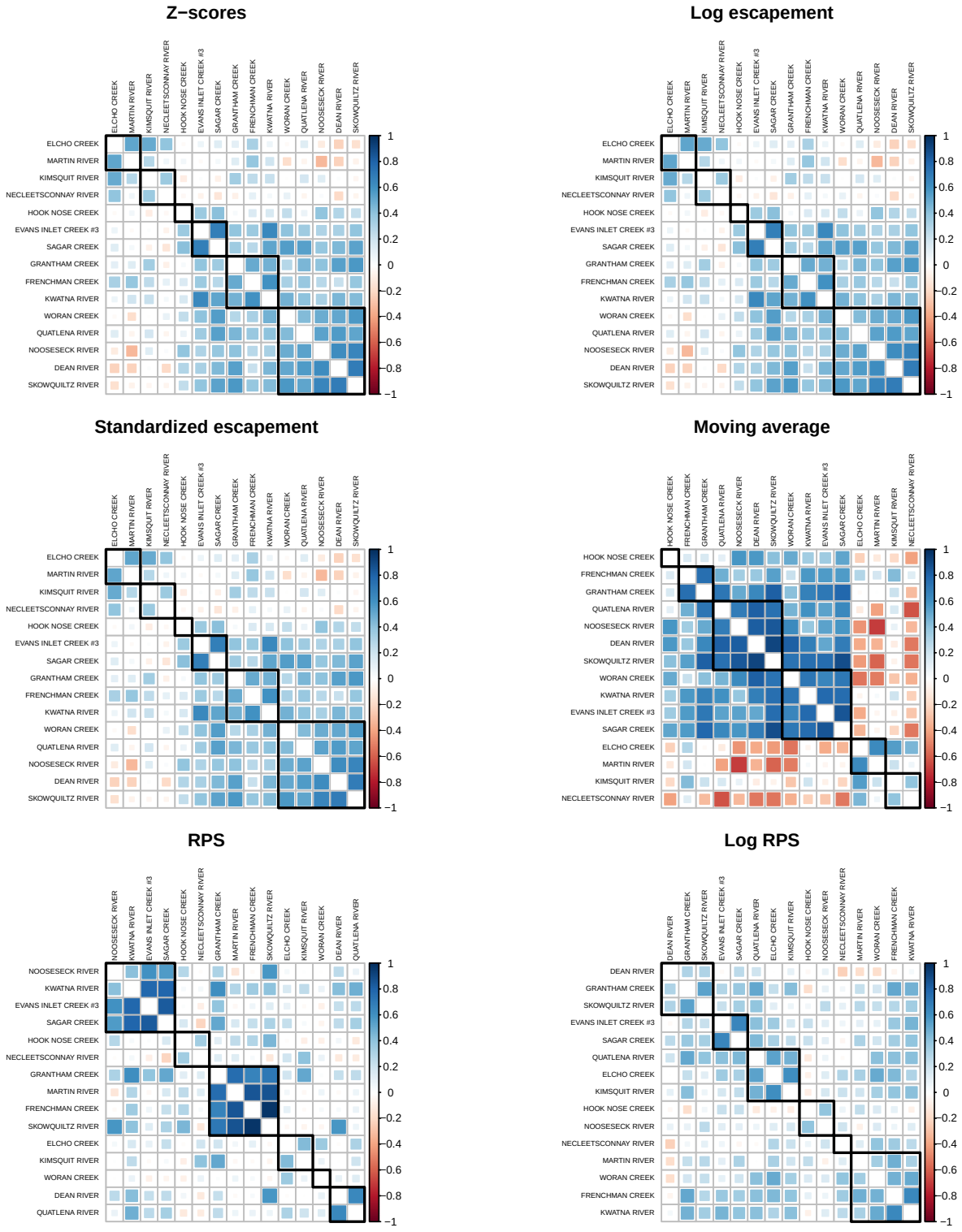


Figure 10: Cross correlation plots to compare metrics.

Dendrogram clusters analysis

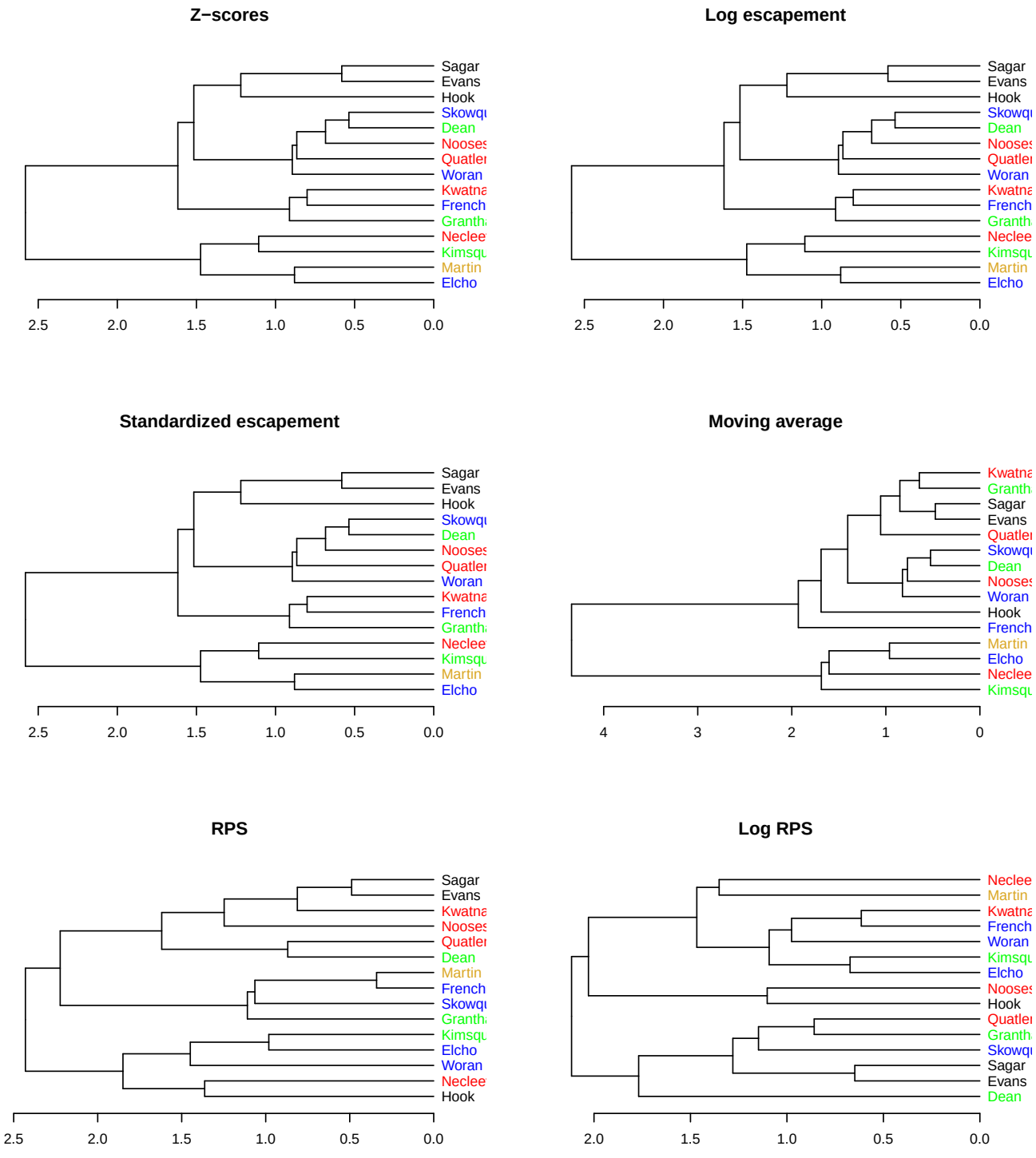


Figure 11: Dendrogram cluster analysis to compare uses of different metrics. Colours represent different subinlets; Bella Coola = red; Dean = blue; Kimsquit = green; Martin = yellow; Sagar = black

Tanglegrams

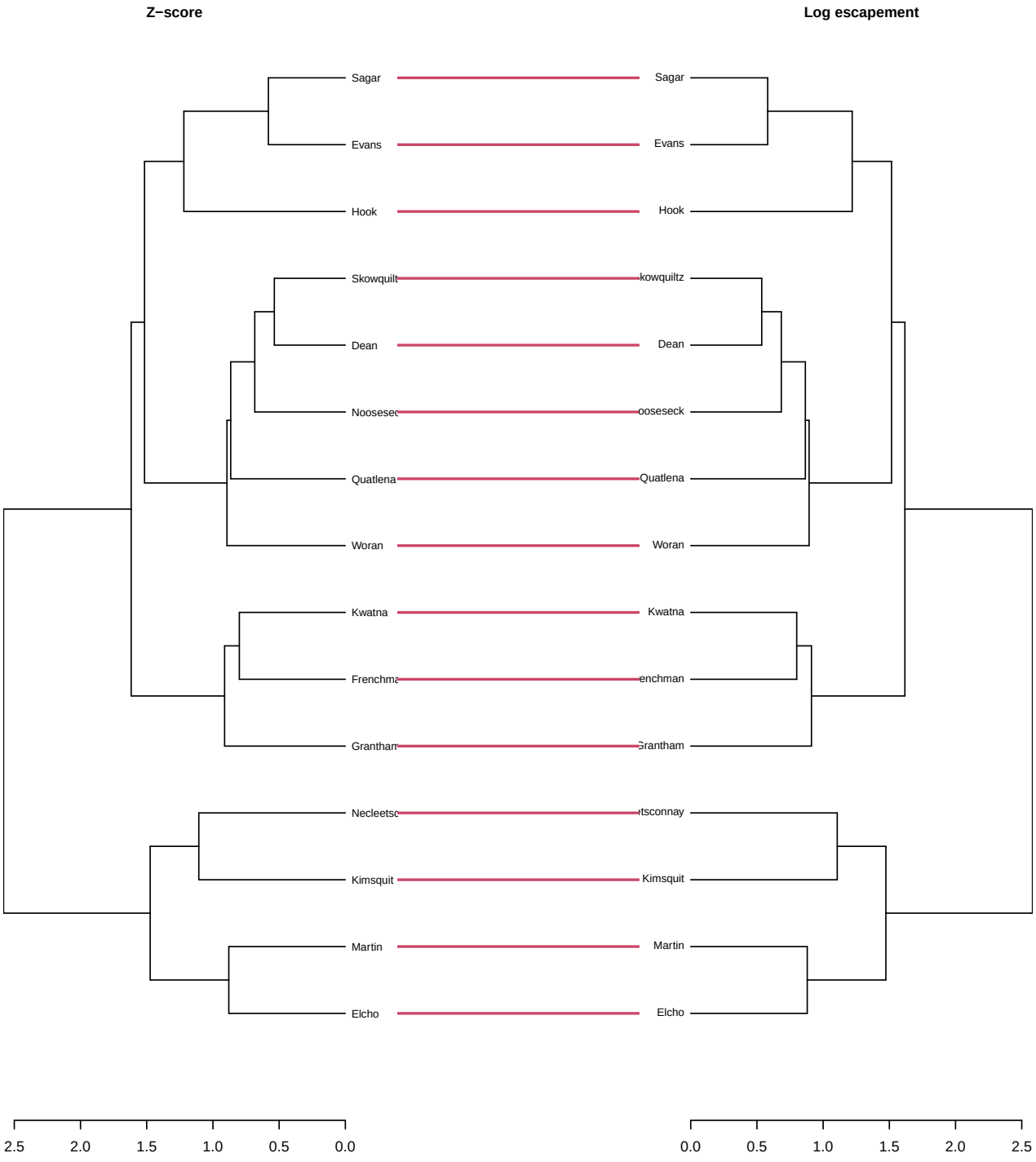


Figure 12: Tanglegram of z-score vs. logged escapements

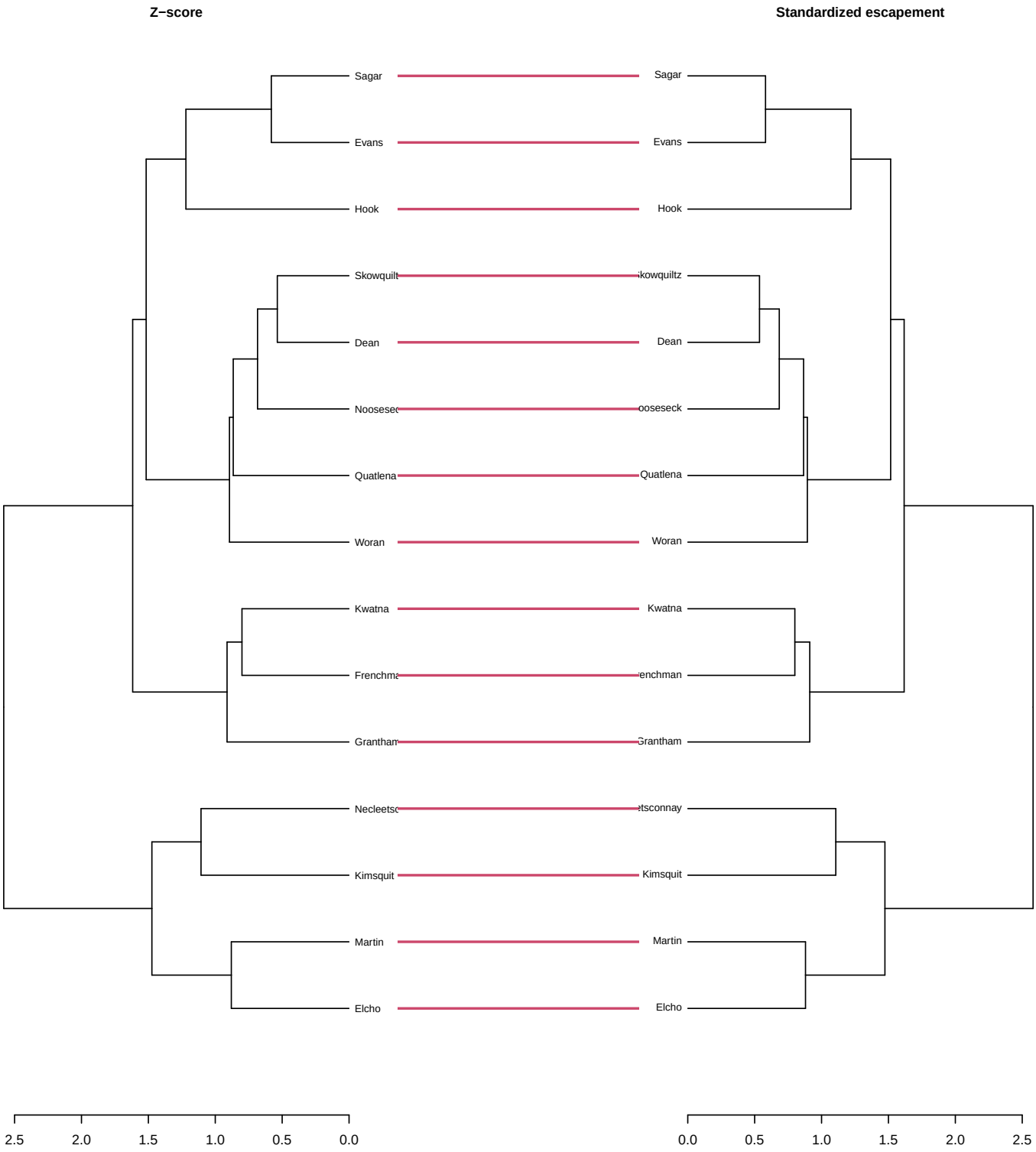


Figure 13: Tanglegram of z-score vs. standardized escapements

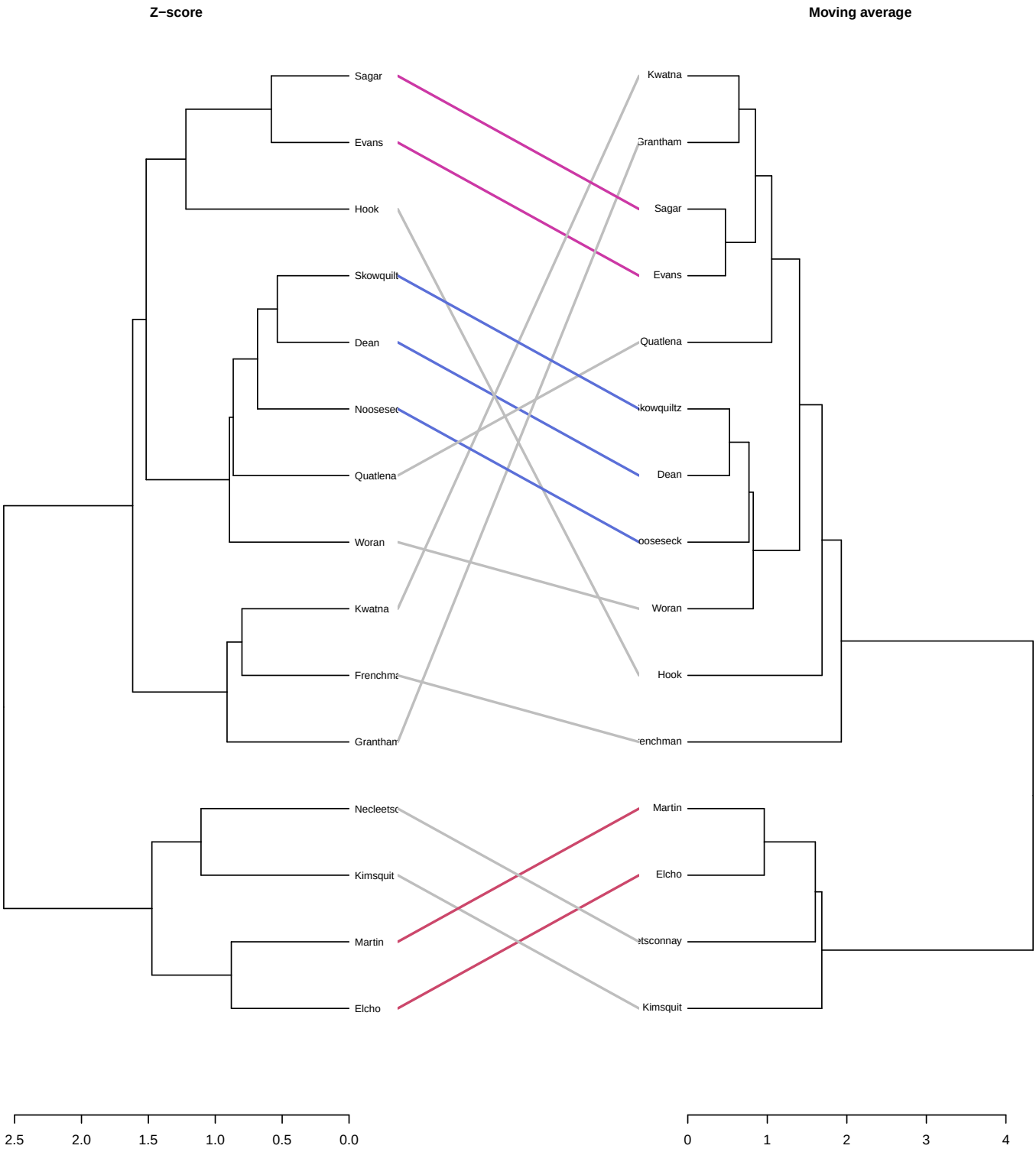


Figure 14: Tanglegram of z-score vs. moving average

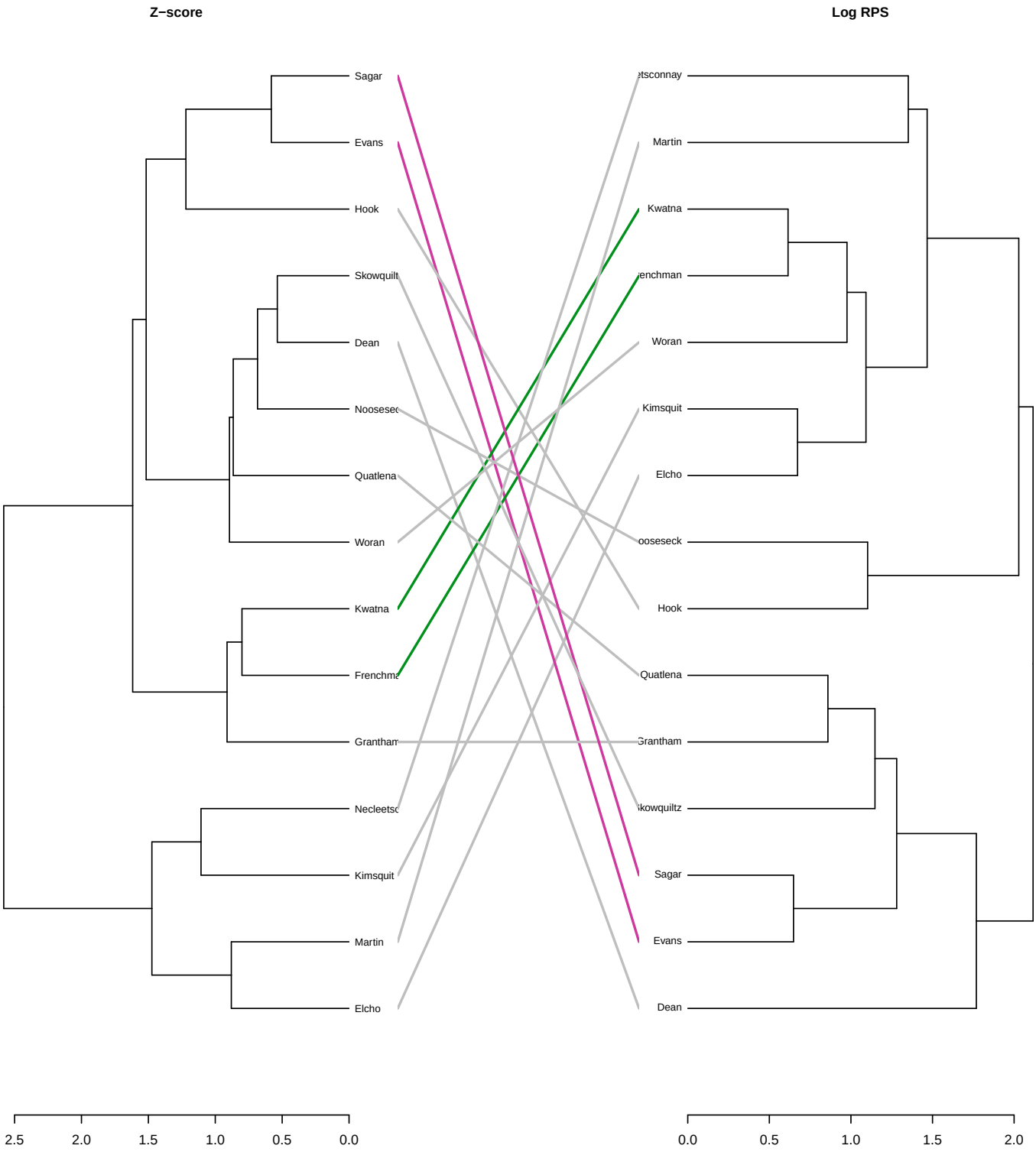


Figure 15: Tanglegram of z-score vs. log RPS

Statistical models

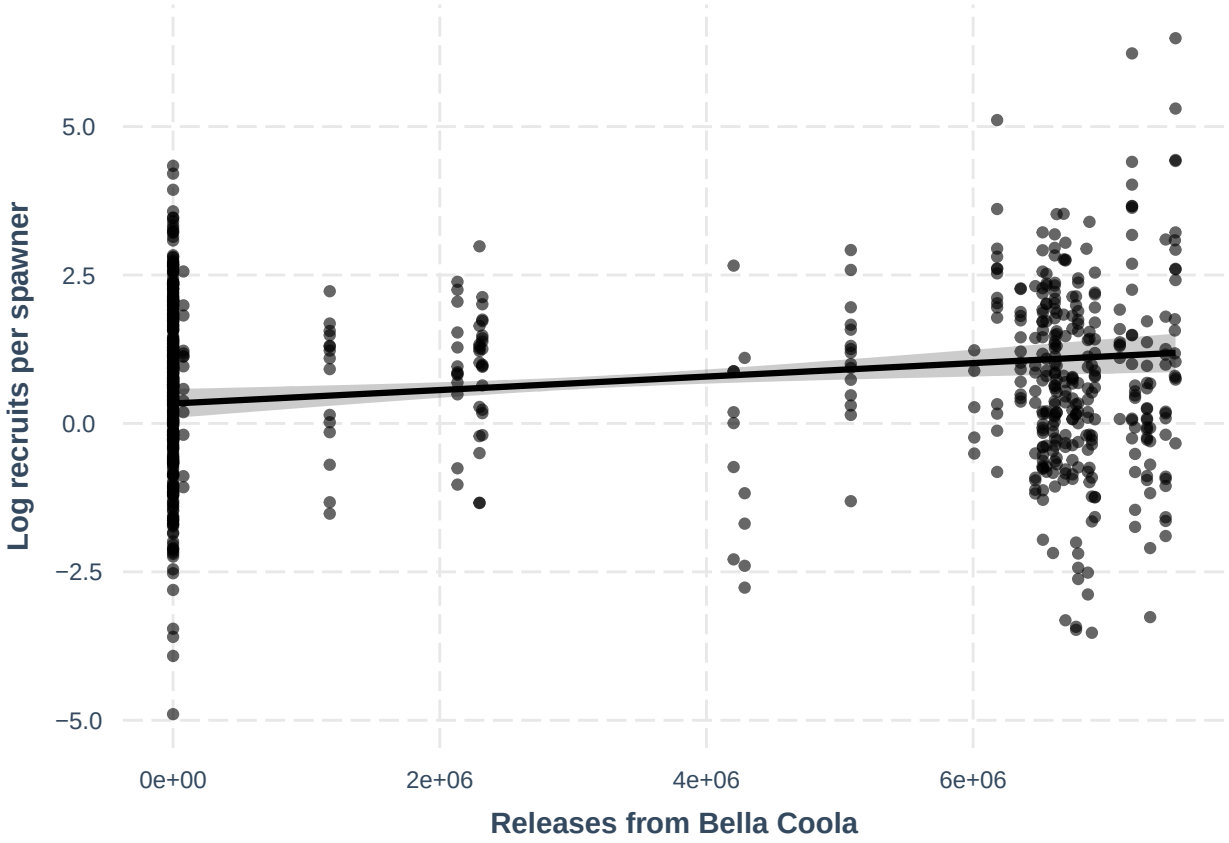
Table of log RPS candidate models and AIC selection

Candidate model	df	AIC
Log RPS ~ Wt. dist. Bella Coola + Wt. dist. McLoughlin + Rel.McLoughin + Rel.Bella Coola + Year	7	2776.004
Log RPS ~ dist from Bella Coola + dist from McLoughlin	4	2783.424
Log RPS ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin	4	2783.424
Log RPS ~ dist from Bella Coola + dist from McLoughlin + Year	5	2785.416
Log RPS ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin + Year	5	2785.416
Log RPS ~ dist from Bella Coola + dist from McLoughlin + Year + Subinlet	9	2790.437
Log RPS ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin + Year + Subinlet	9	2790.437

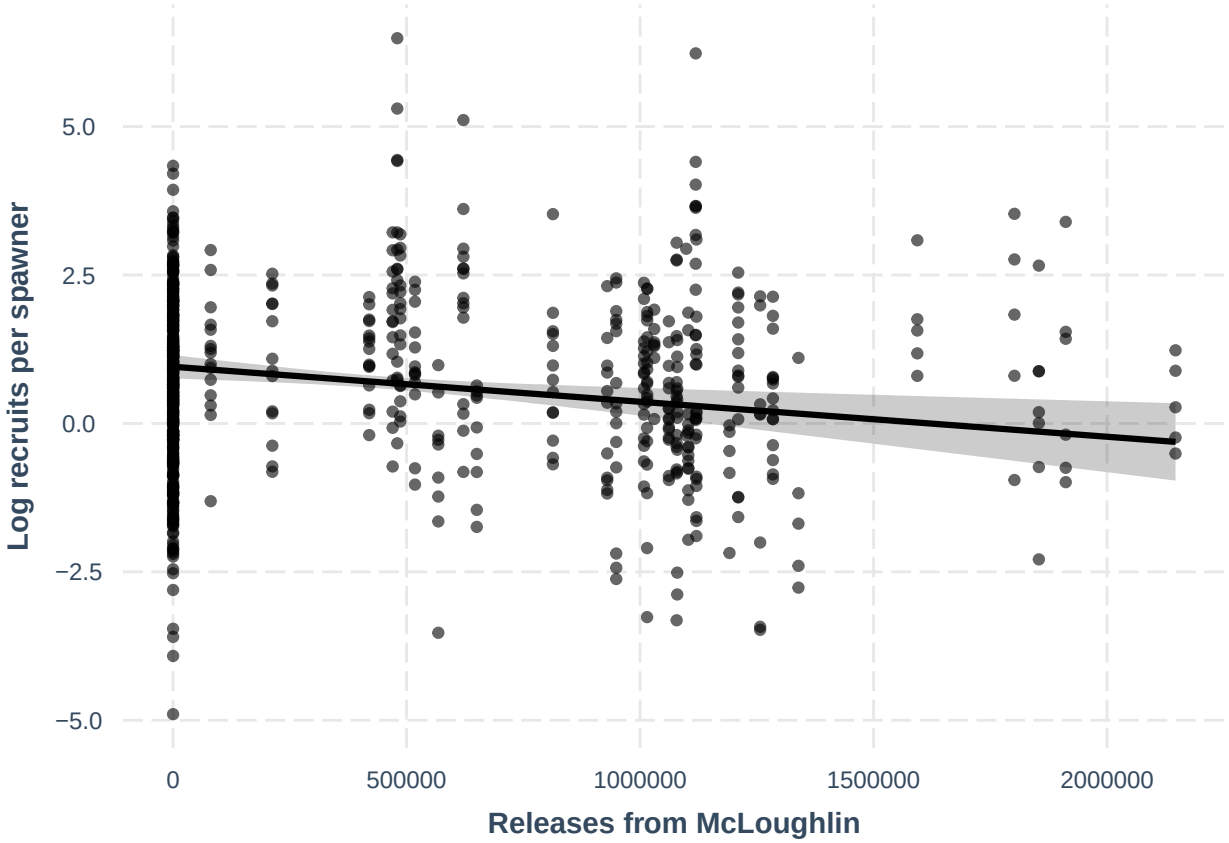
Table of log escapement candidate models and AIC selection

Candidate model	df	AIC
Log escapement ~ dist from Bella Coola + dist from McLoughlin + Year + Subinlet	9	3019.123
Log escapement ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin + Year + Subinlet	9	3019.123
Log escapement ~ Wt.dist.BellaCoola + Wt.dist.McLoughlin + Rel.Bella Coola + Rel.McLoughlin + Year	7	3045.062
Log escapement ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin	4	3059.479
Log escapement ~ dist from Bella Coola + dist from McLoughlin	4	3059.479
Log escapement ~ dist from Bella Coola + dist from McLoughlin + Year	5	3060.954
Log escapement ~ Wt. dist. from Bella Coola + Wt. dist. from McLoughlin + Year	5	3060.954

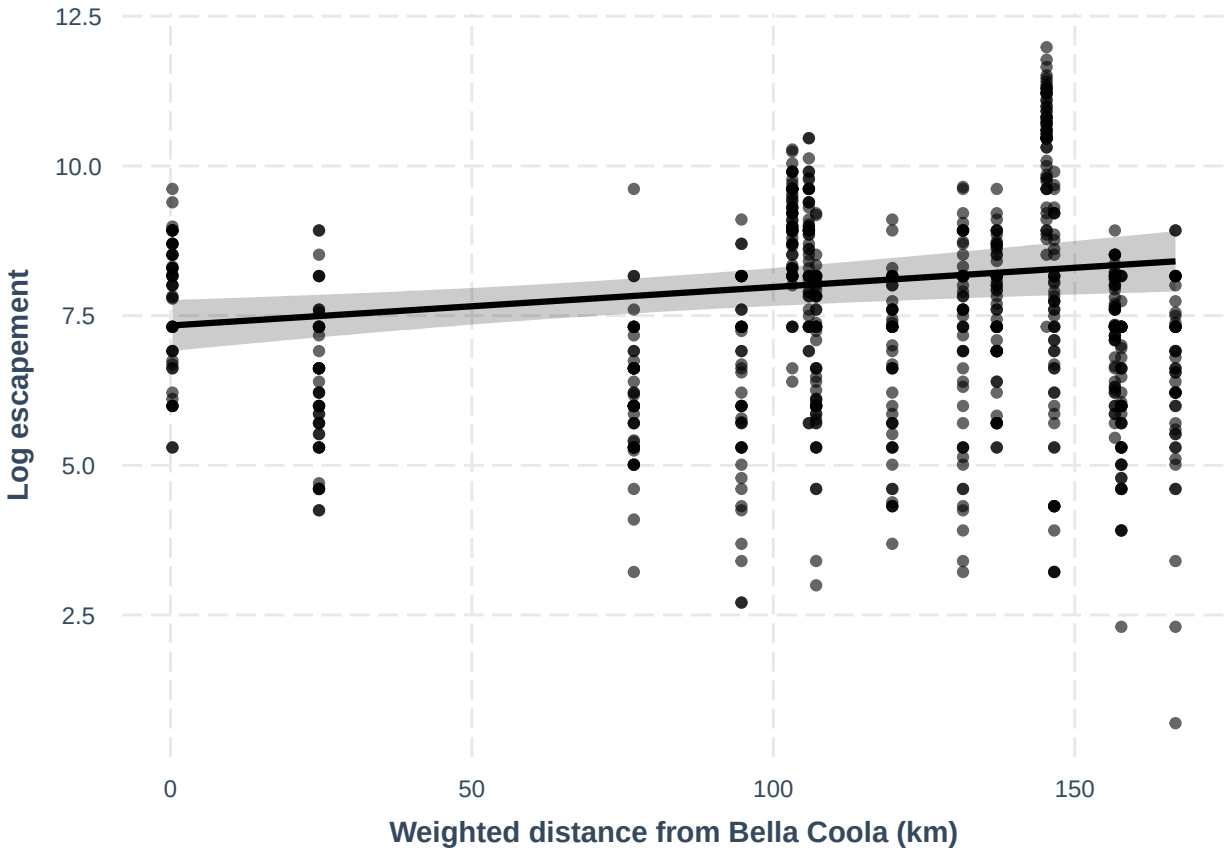
Effects plot of log RPS against releases from Bella Coola



Effects plot of log RPS against releases from McLoughlin



Effects plot of log escapements against weighted distance from Bella Coola



Effects plot of log escapements against weighted distance from McLoughlin