# Appendix 2

Area 08 Chum Salmon

Coastland

2022-12-04

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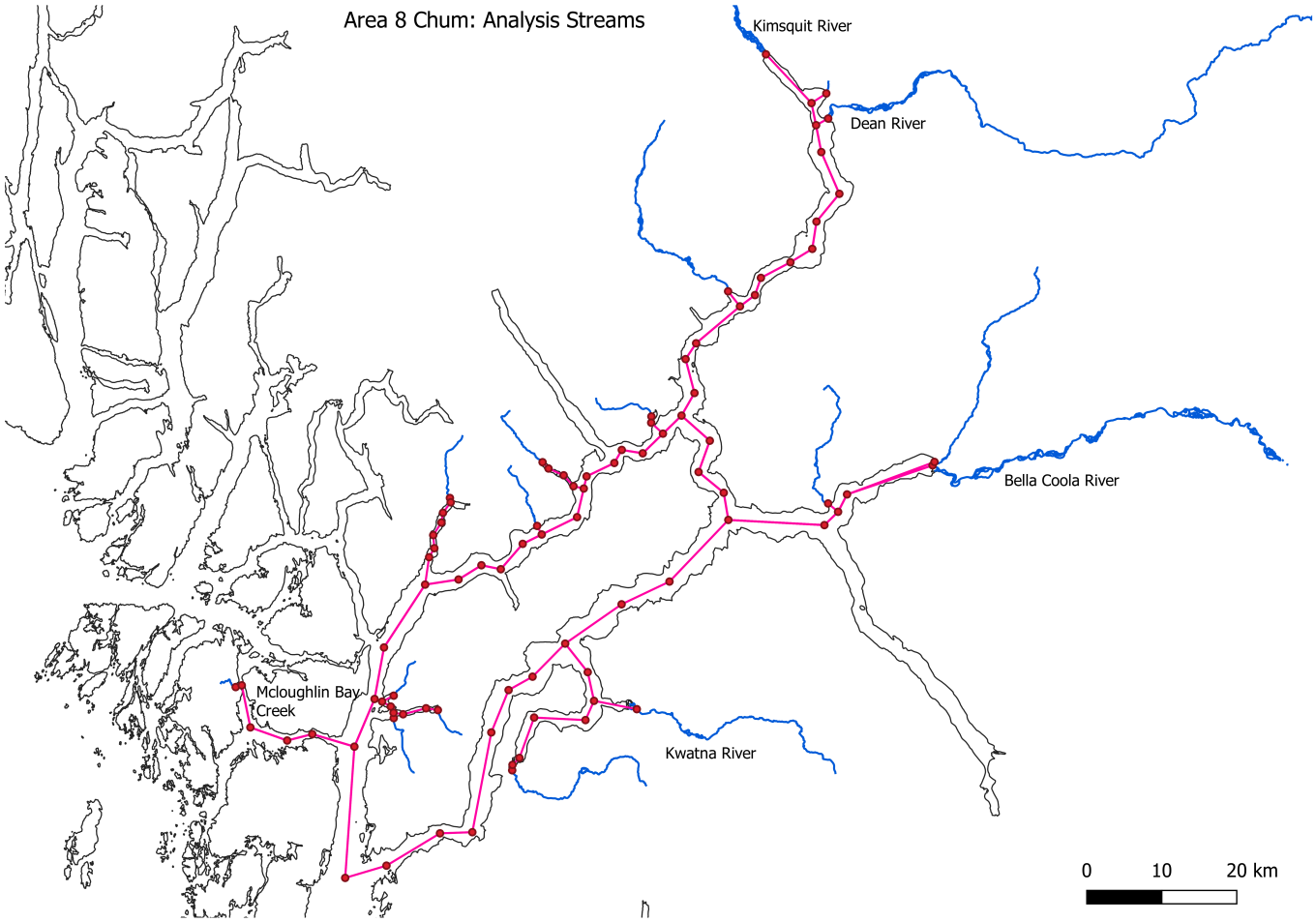
# Study area

## Area 8



# Summary statistics

## Bubbleplot of escapement by enhancement rank

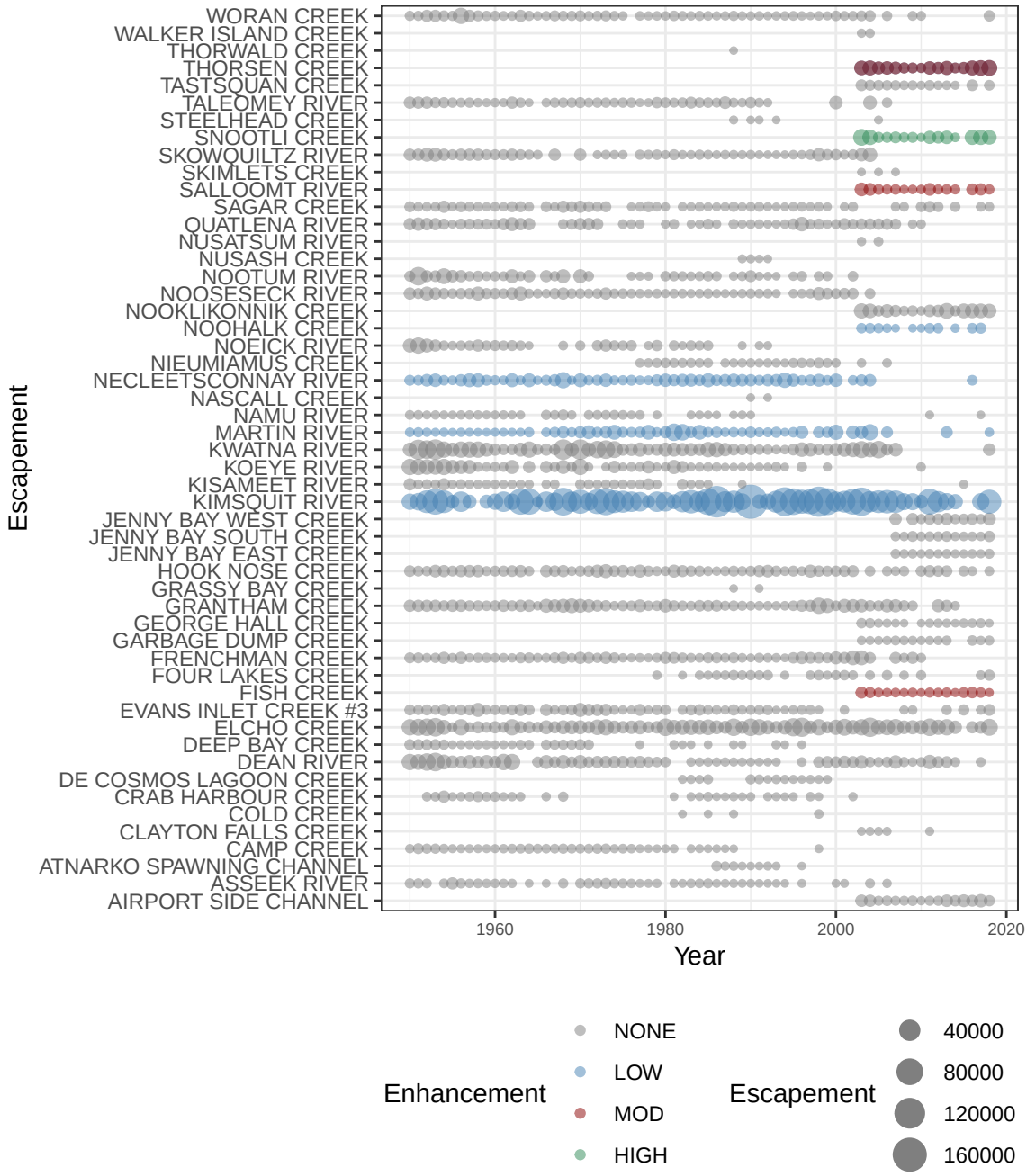



Figure 1: Escapement to area streams by enhancement rank.

### Plot of total releases to area

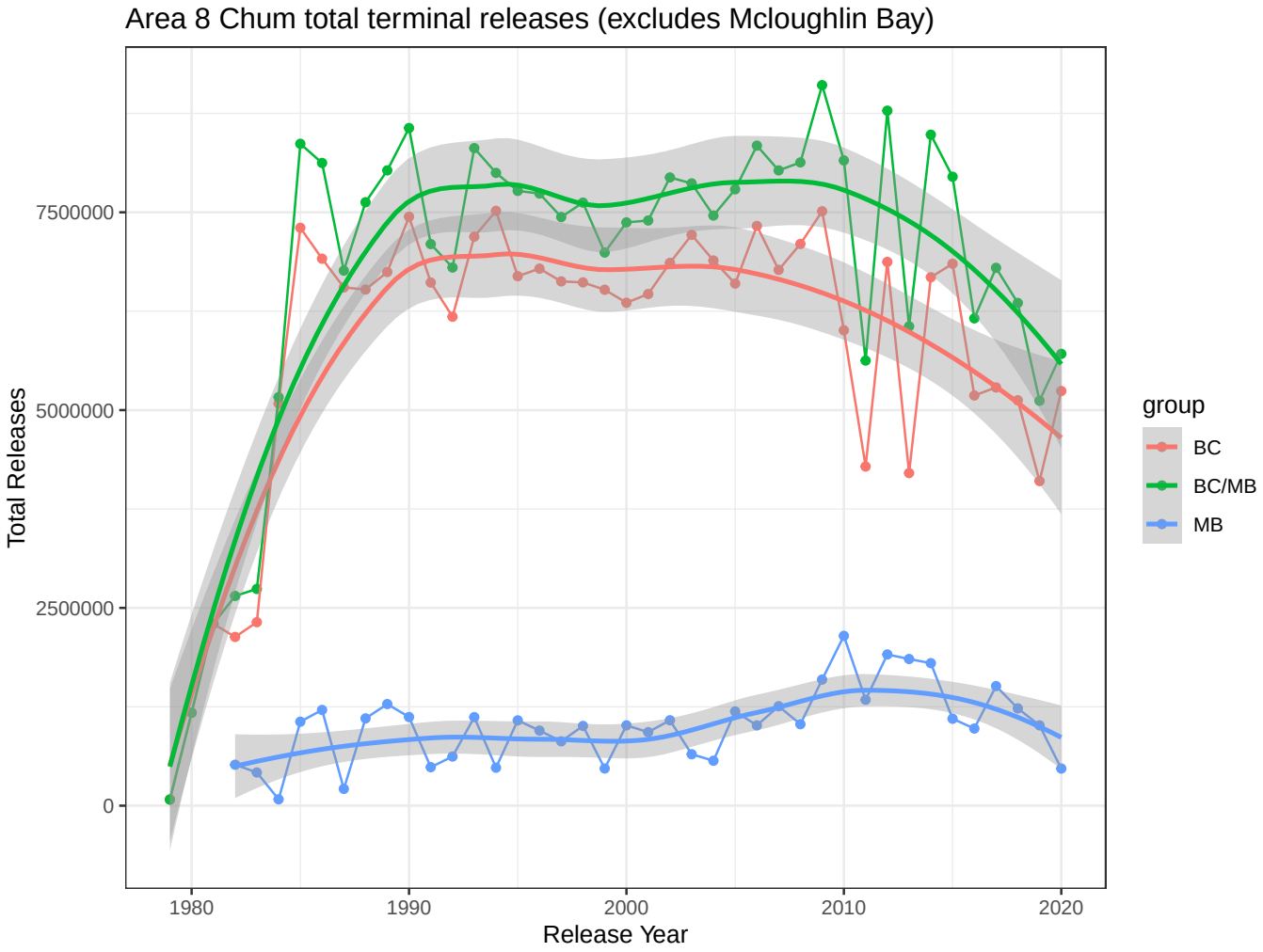



Figure 2: Total releases for Area 8 (not including McLoughlin Bay)

**Escapement by enhancement rank per system**

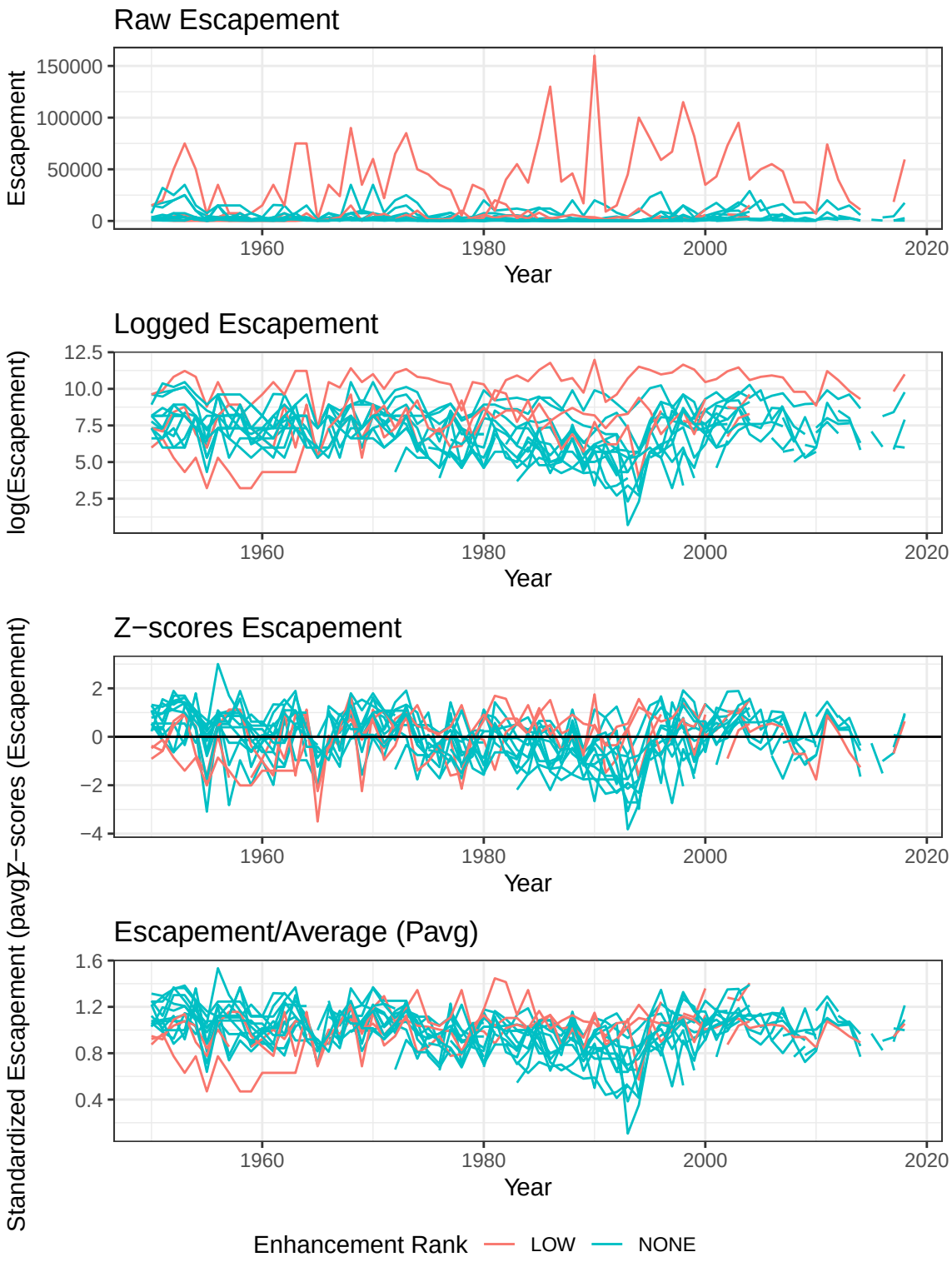



Figure 3: Various plots for escapement and transformations.

**Moving average and LOESSS fit on enhancement ranking of log escapements**

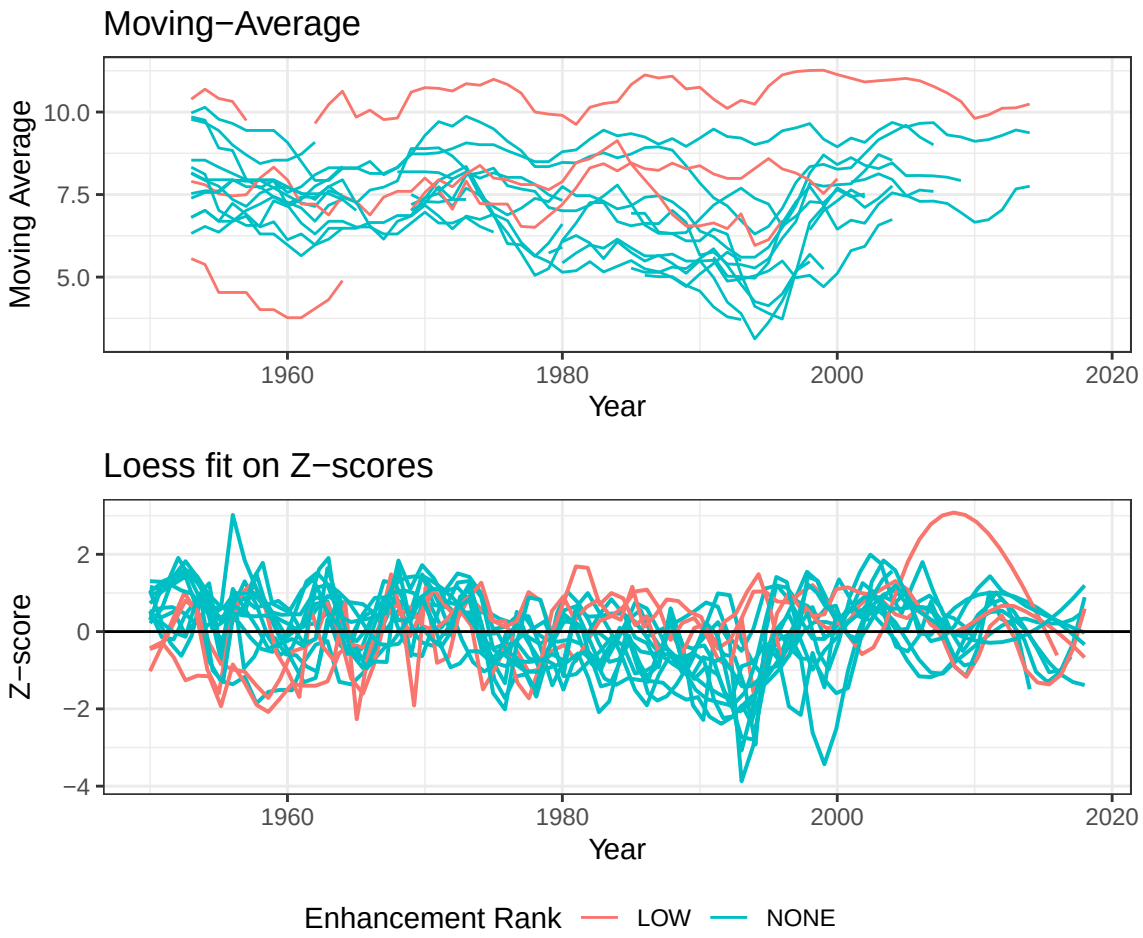



Figure 4: Moving average and LOESS fits on logged escapement by enhancement ranking.

## Escapement to streams by enhancement rank

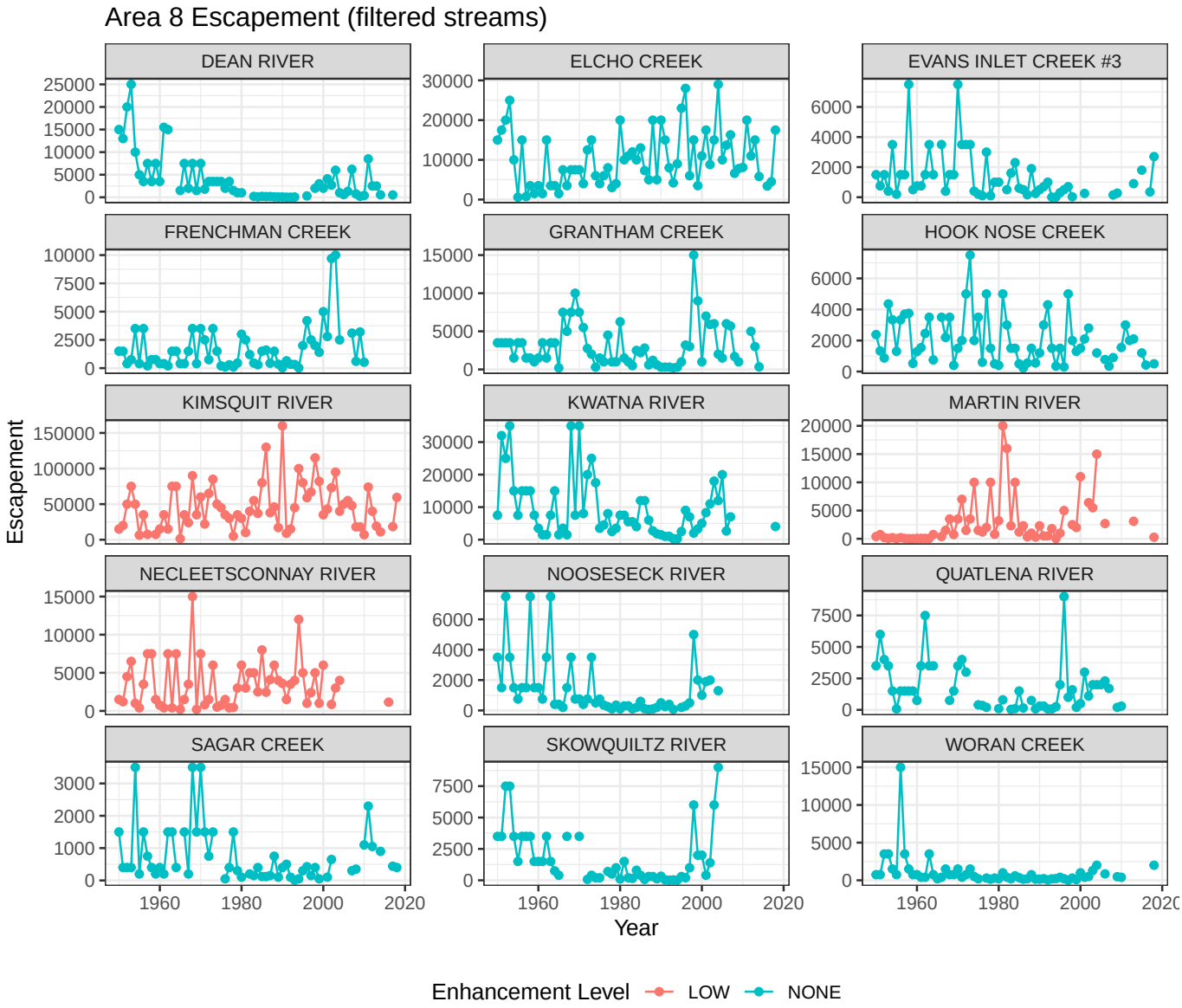



Figure 5: Facet plot of escapements by enhancement level

## Facet plot of all releases in Area 8

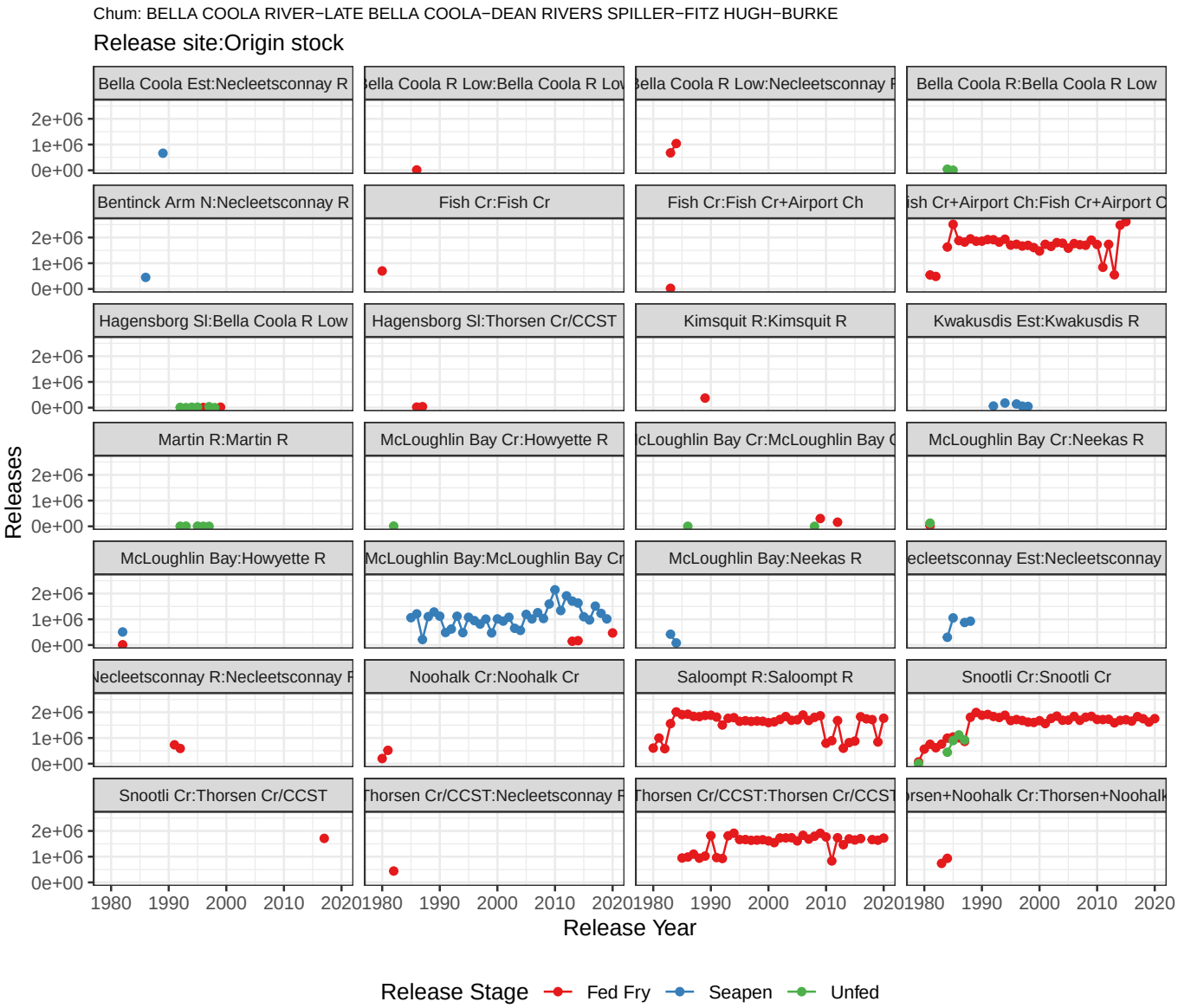



Figure 6: Facet plot of all releases in Area 8

## Recruits per spawner by system

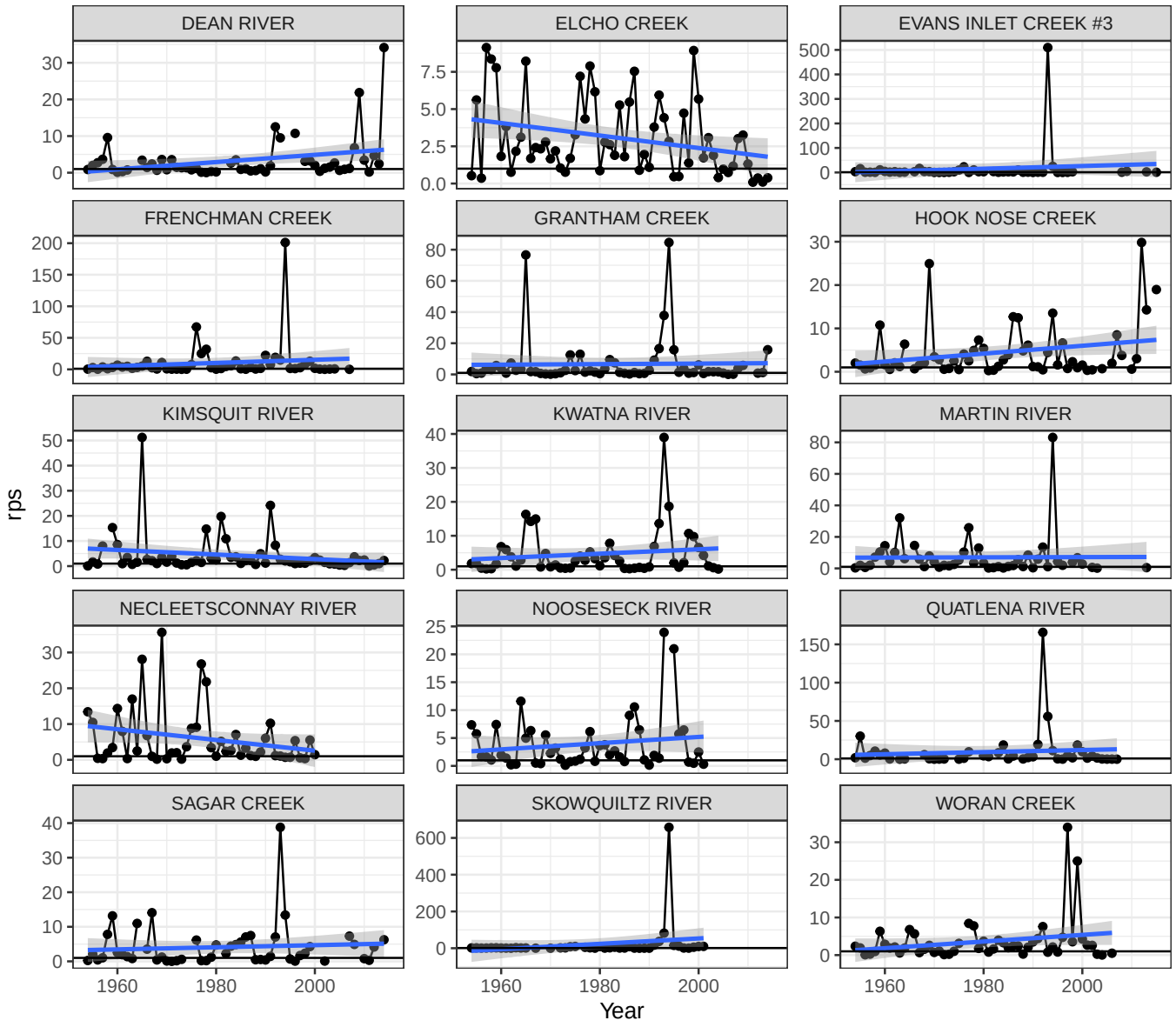



Figure 7: Recruits per spawner by system

## Log recruits per spawner by system

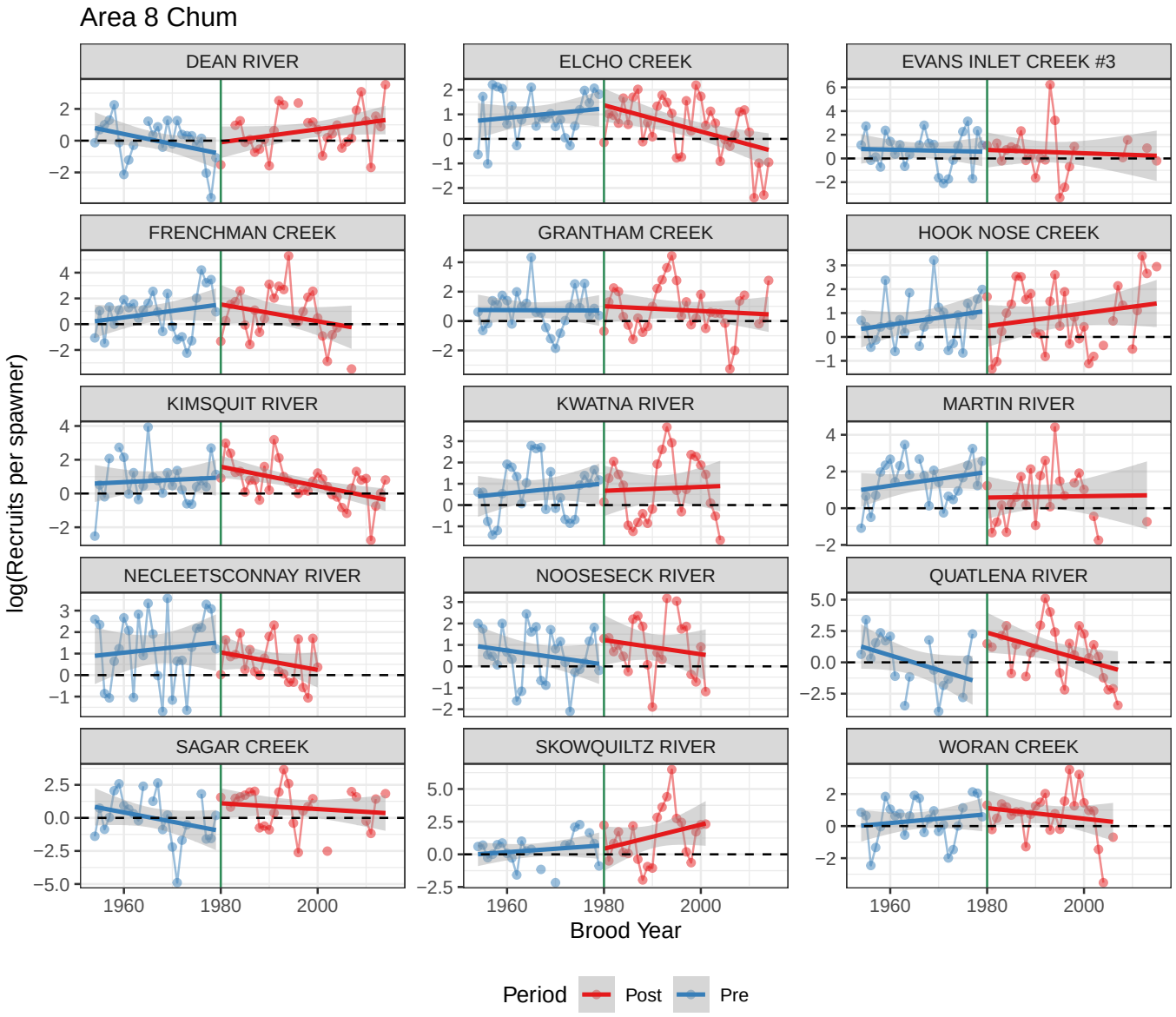



Figure 8: Log recruits per spawner by system

## Boxplot of log RPS by system

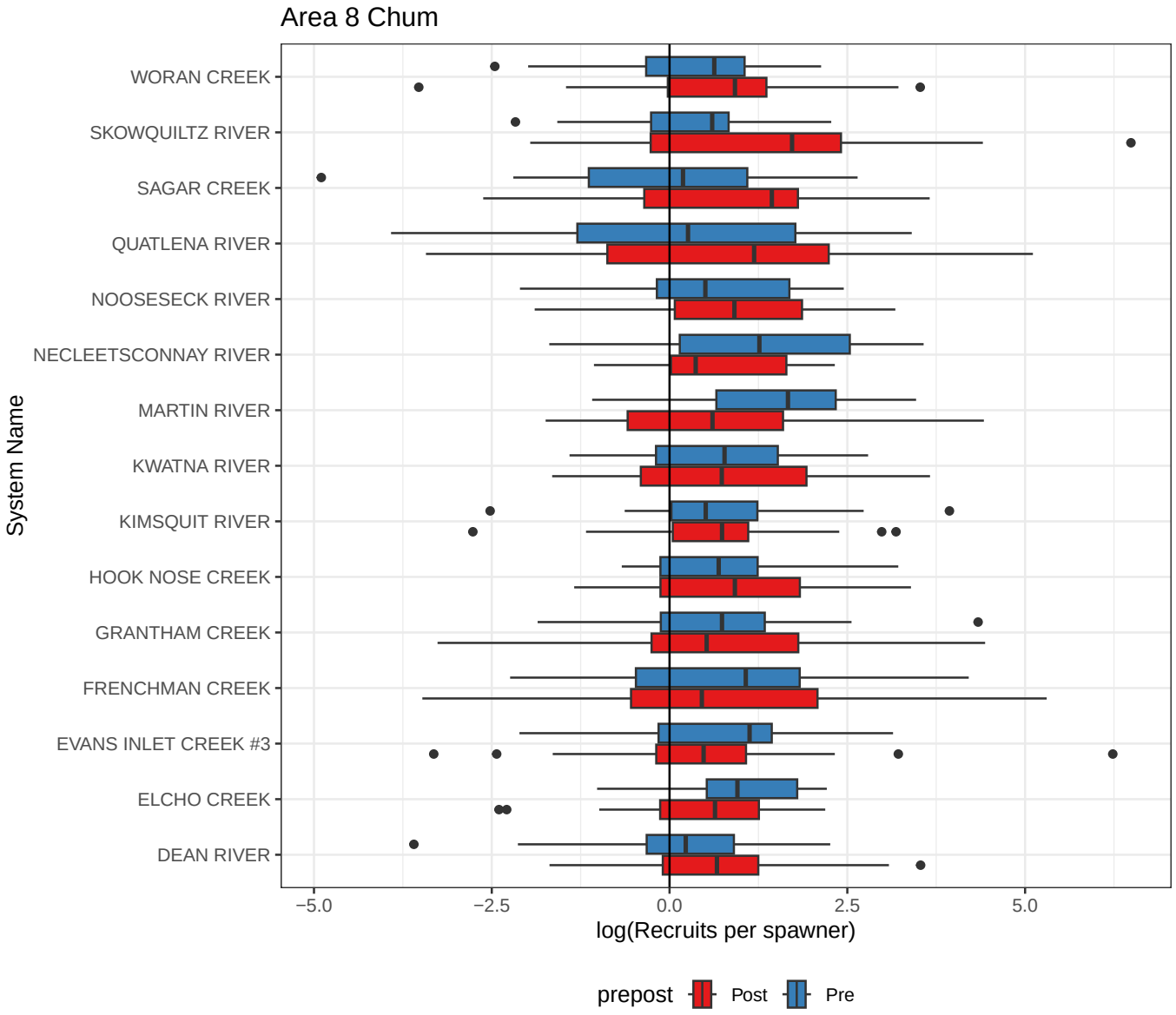



Figure 9: Boxplot of log recruits per spawner by system

# Correlation analyses

## Cross correlation plots

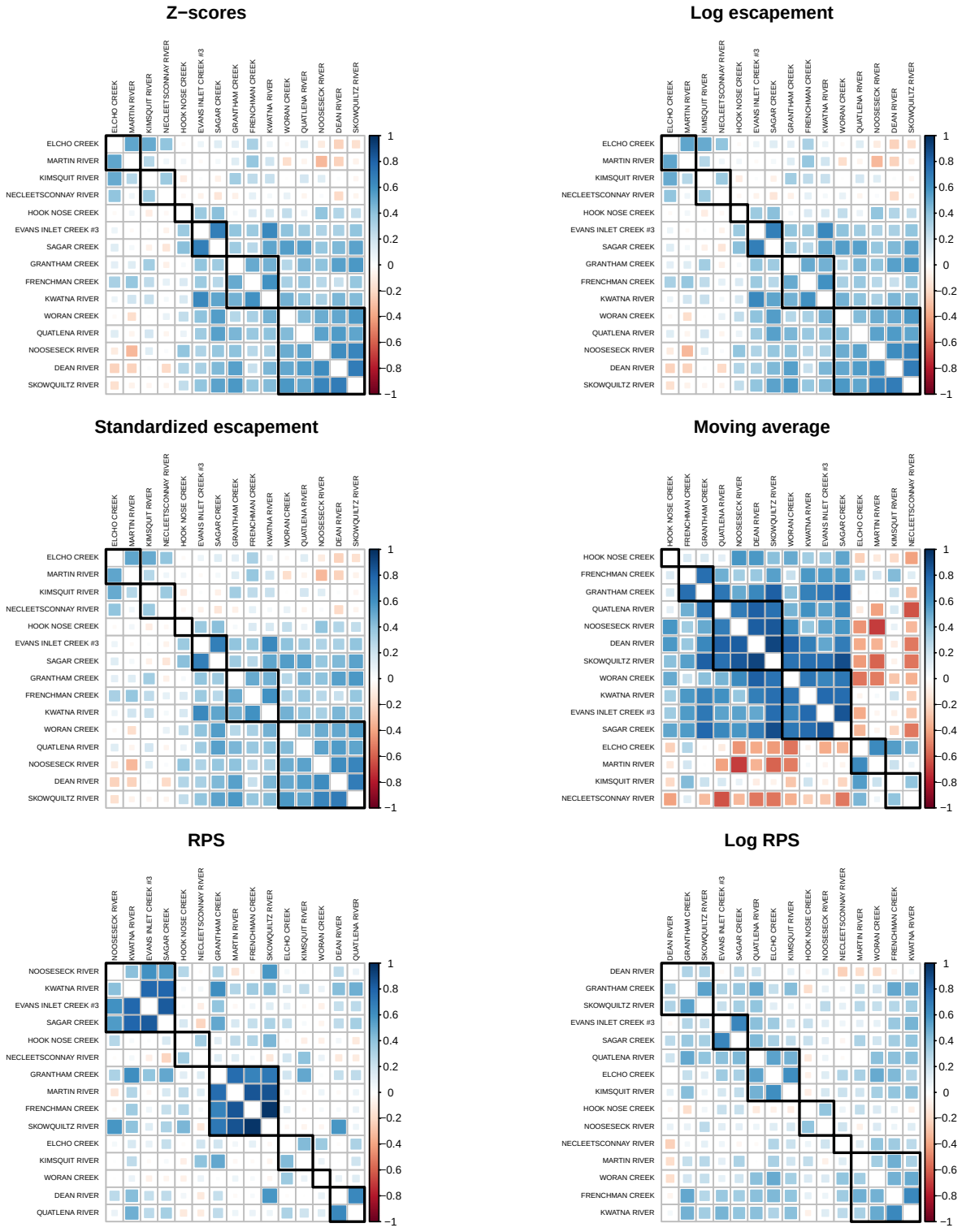



Figure 10: Cross correlation plots to compare metrics.

## Dendrogram clusters analysis

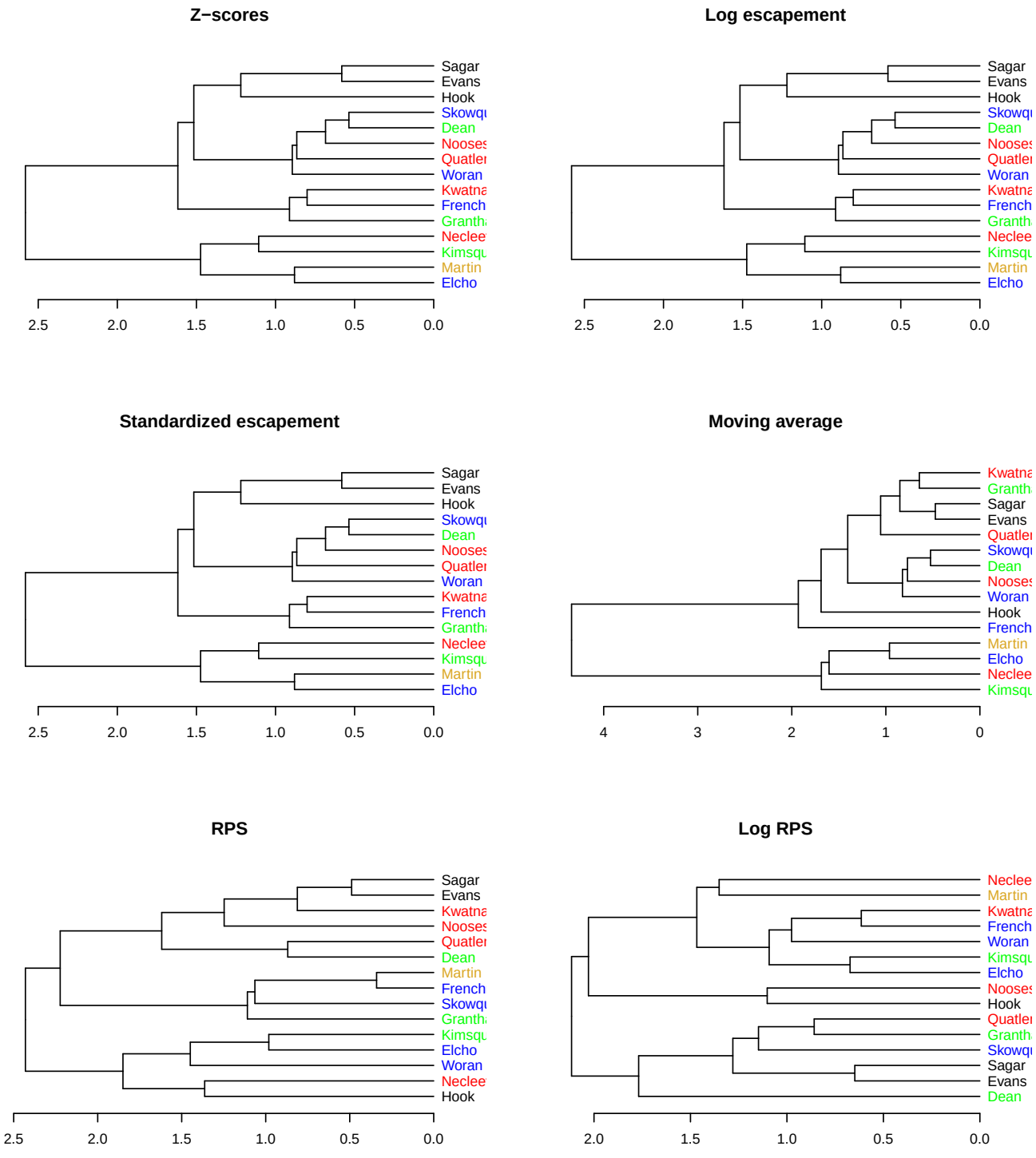



Figure 11: Dendrogram cluster analysis to compare uses of different metrics. Colours represent different subinlets; Bella Coola = red; Dean = blue; Kimsquit = green; Martin = yellow; Sagar = black

## Tanglegrams

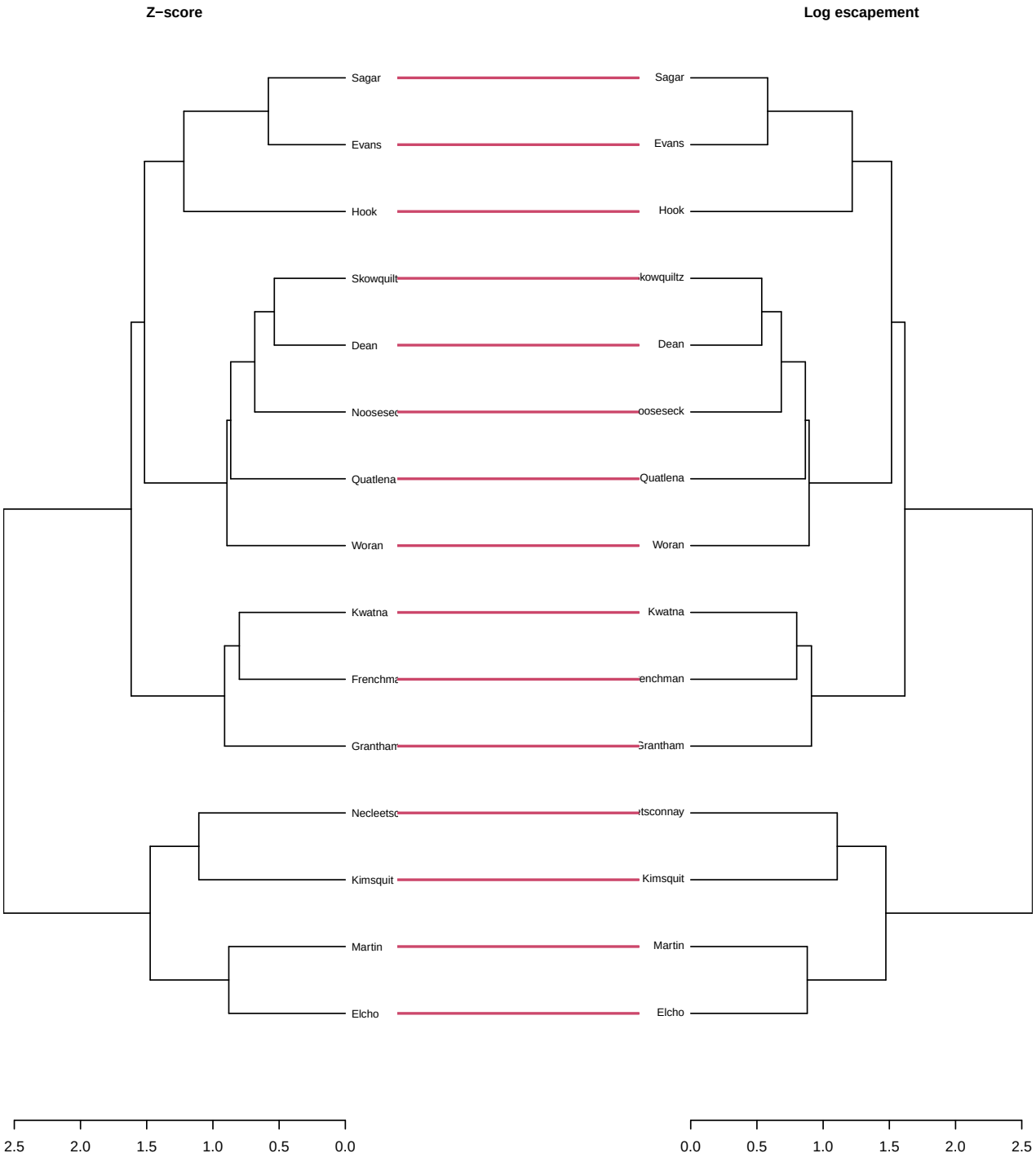



Figure 12: Tanglegram of z-score vs. logged escapements

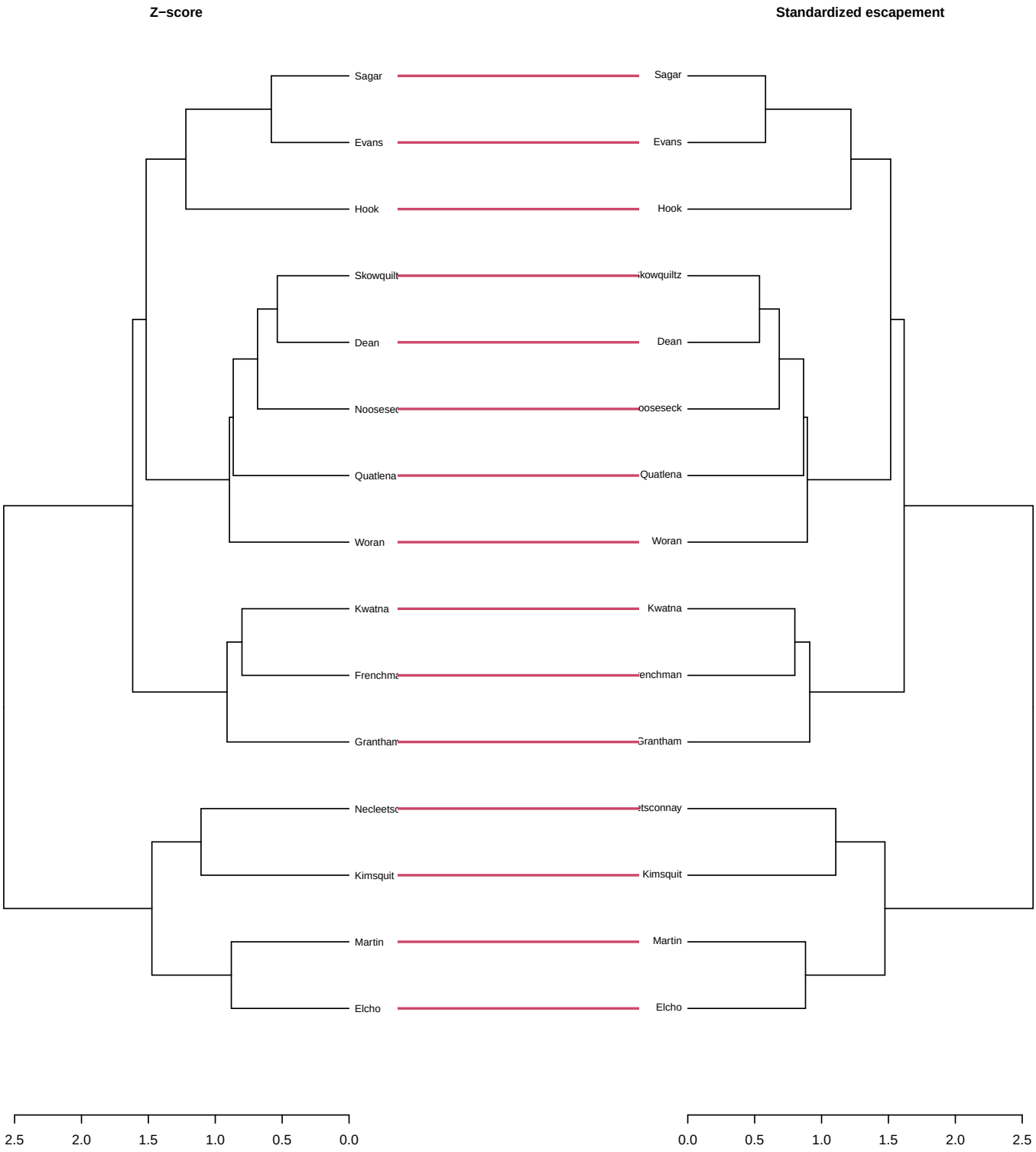



Figure 13: Tanglegram of z-score vs. standardized escapements

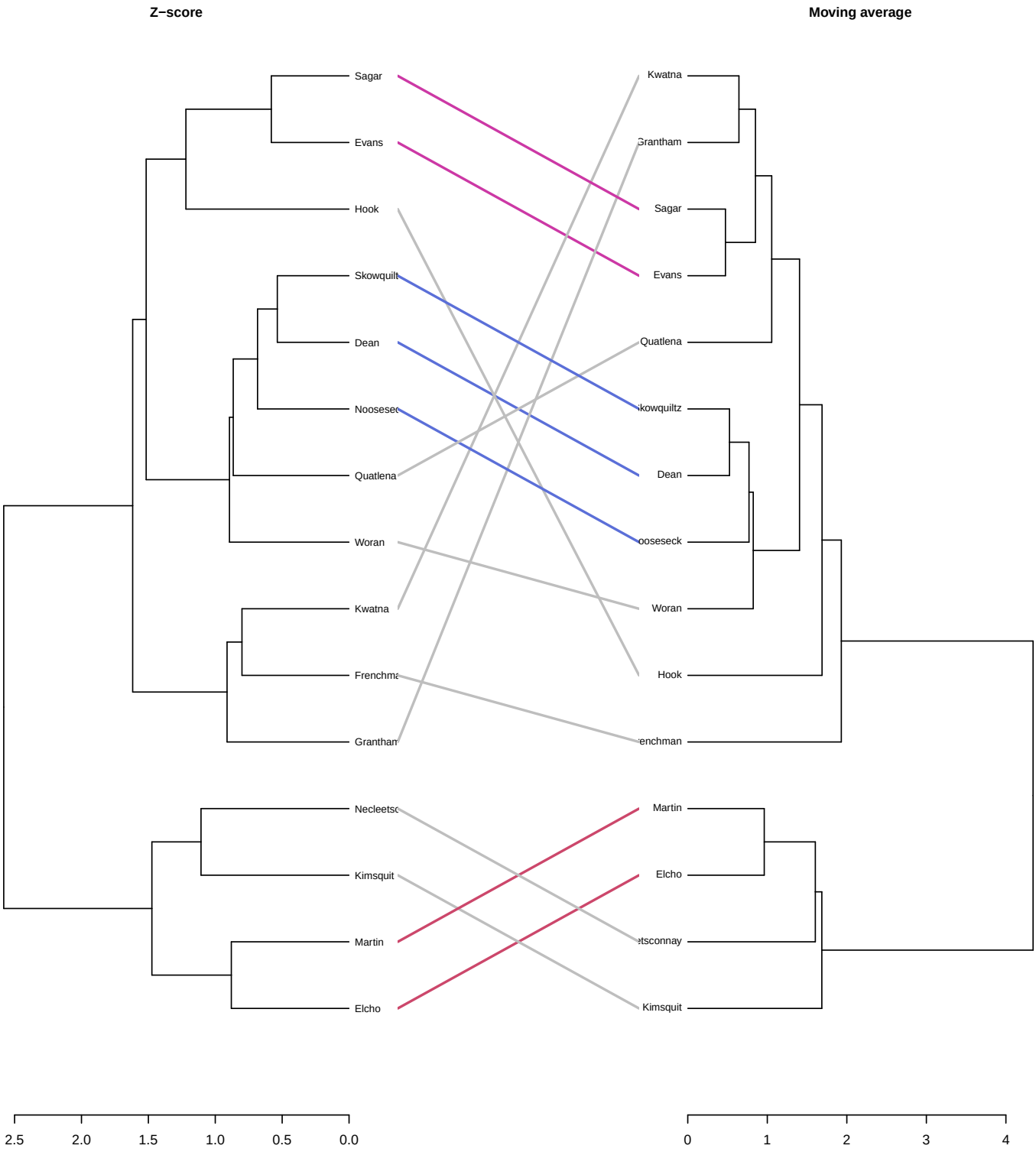



Figure 14: Tanglegram of z-score vs. moving average

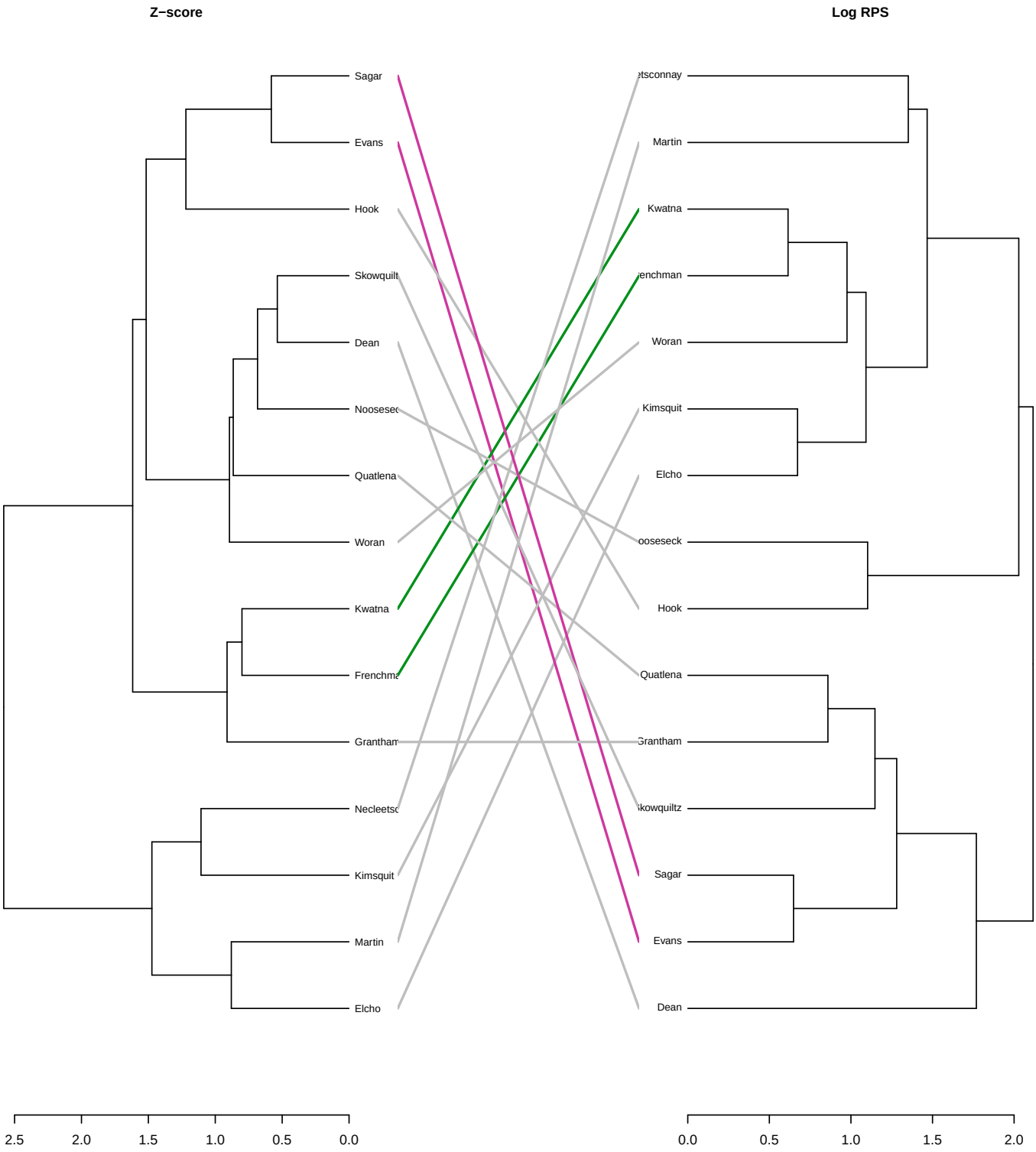



Figure 15: Tanglegram of z-score vs. log RPS

## Pre- and post-1980 correlation analyses

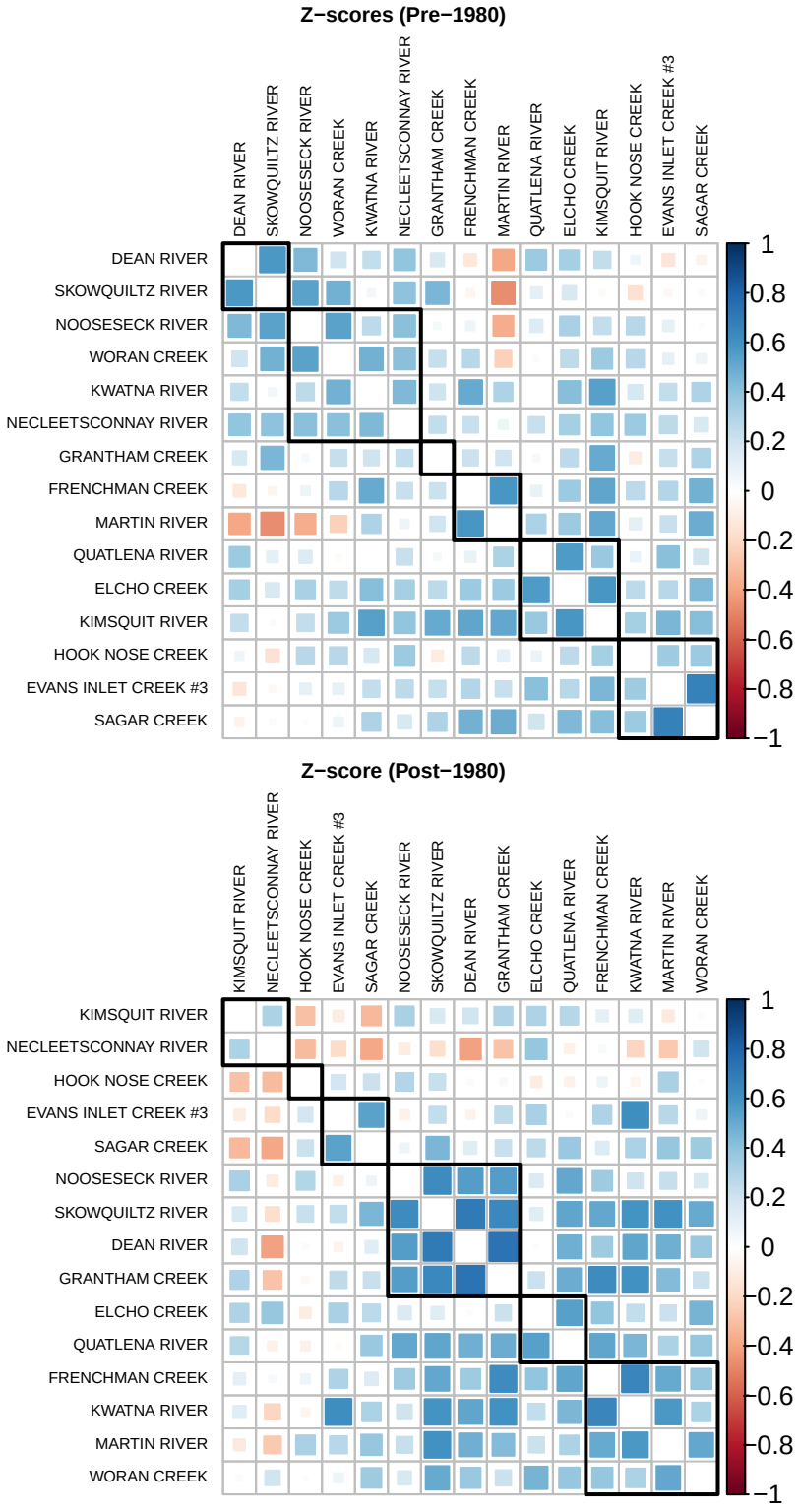



Figure 16: Cross correlation plots of z-scores to compare pre- and post-enhancement.

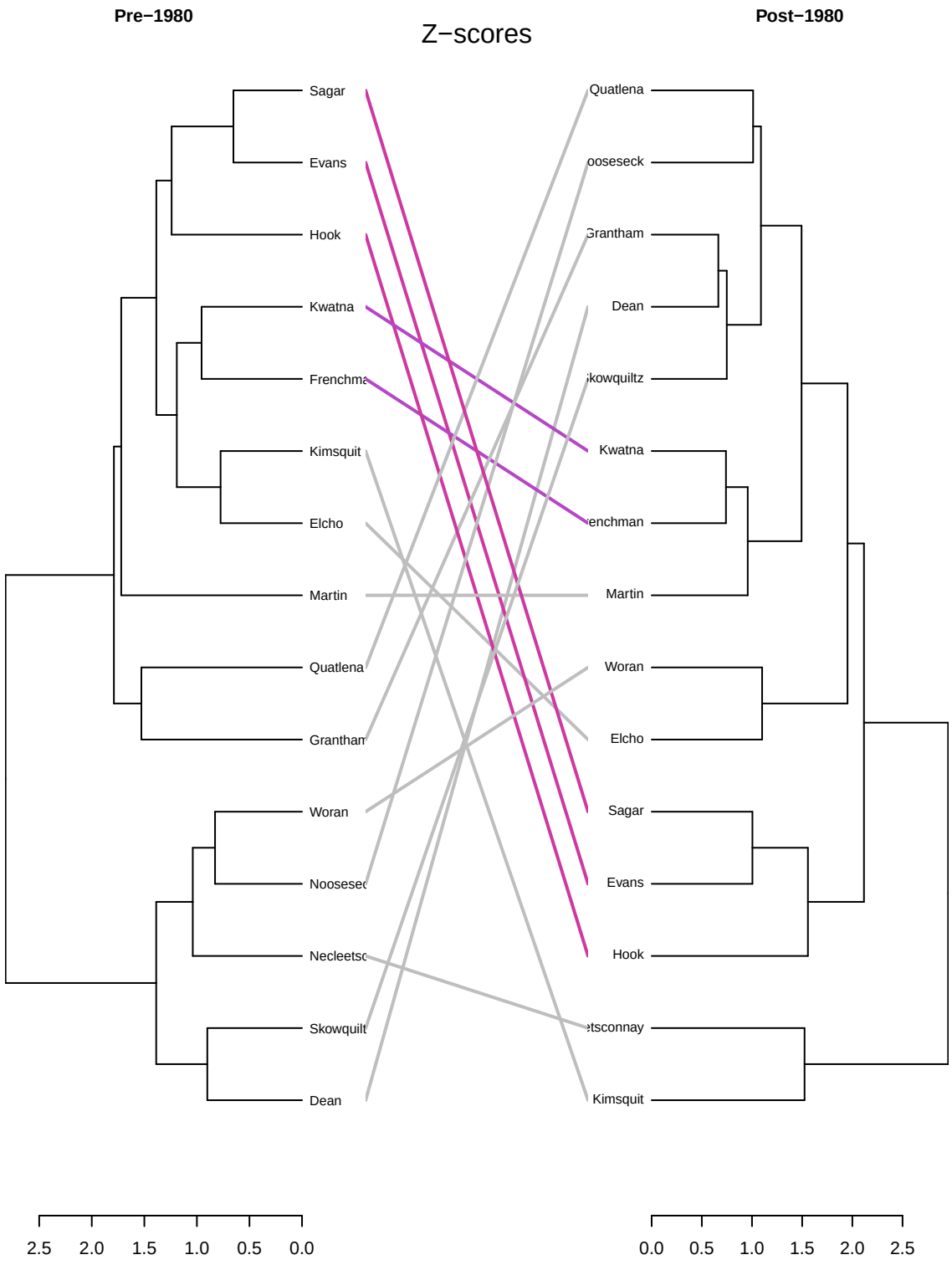



Figure 17: Tanglegram comparing z-scores pre- and post-enhancement (1980)

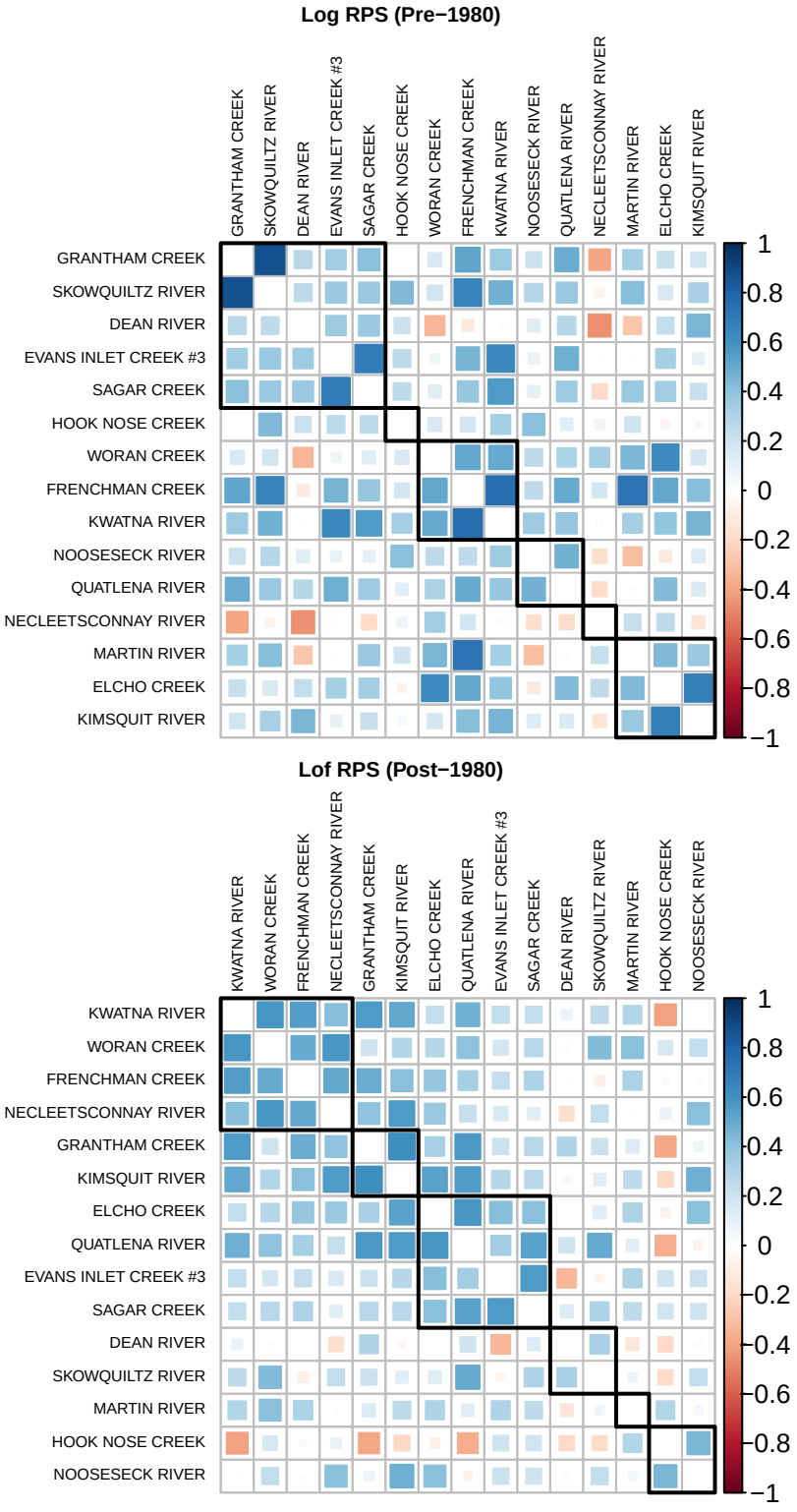



Figure 18: Cross correlation plots of Log RPS to compare pre- and post-enhancement.

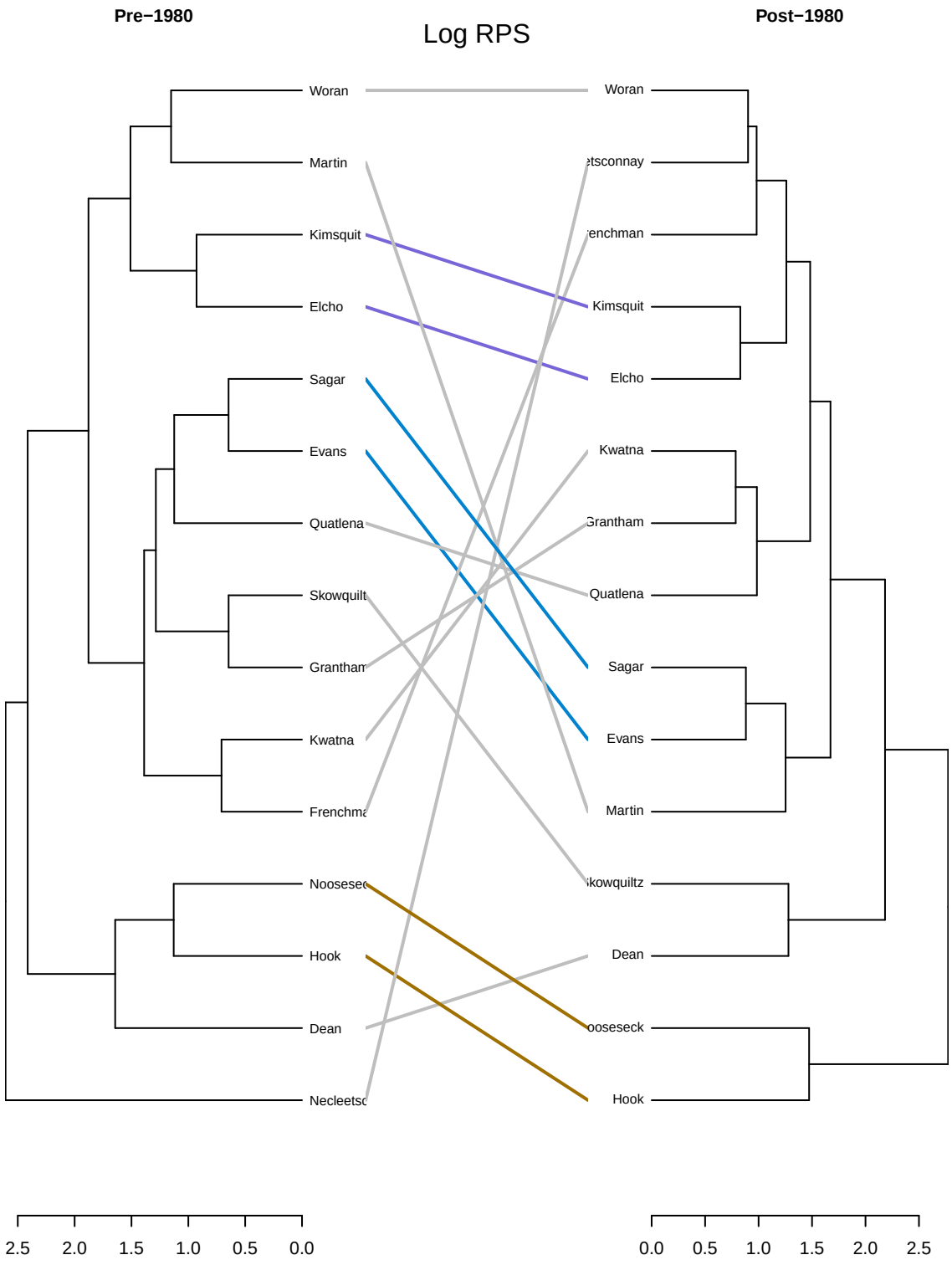



Figure 19: Tanglegram comparing Log RPS pre- and post-enhancement (1980)

# Statistical models

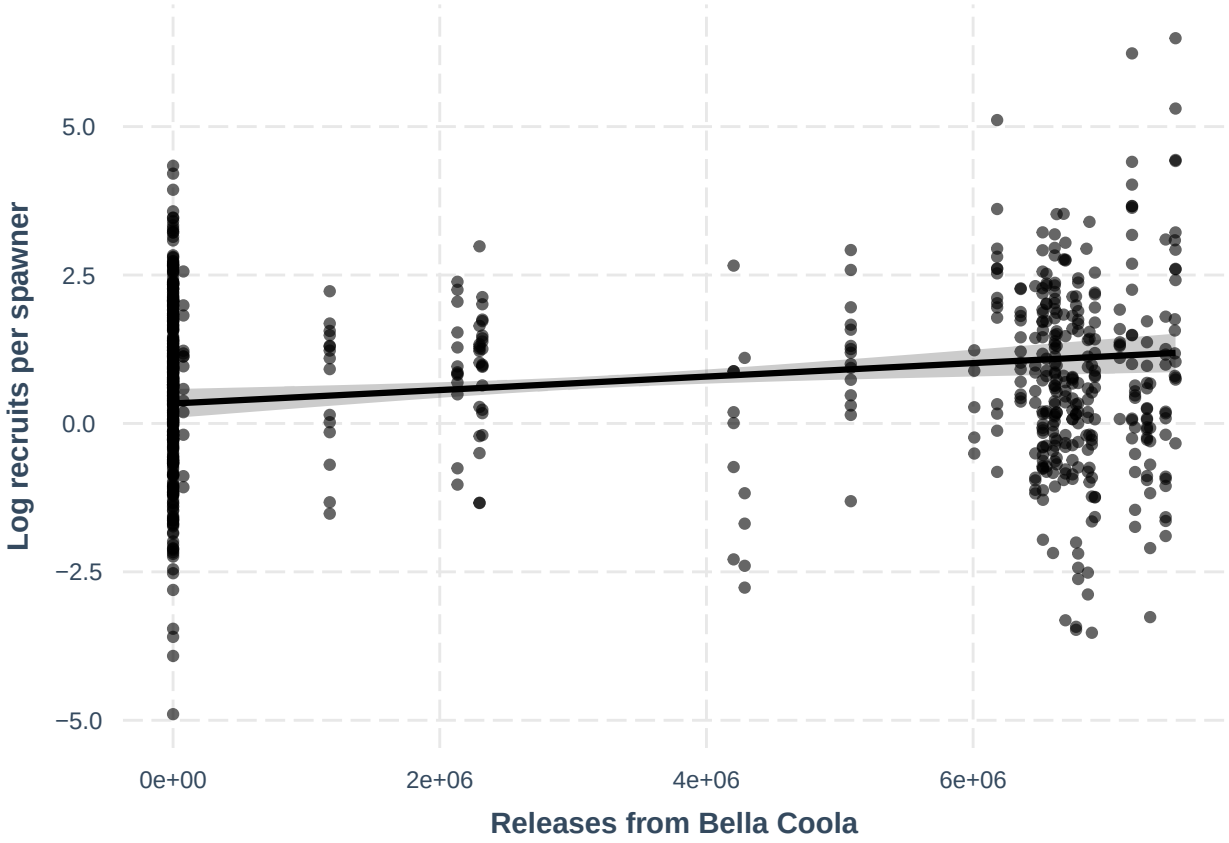
## Table of log RPS candidate models and AIC selection

| 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 |

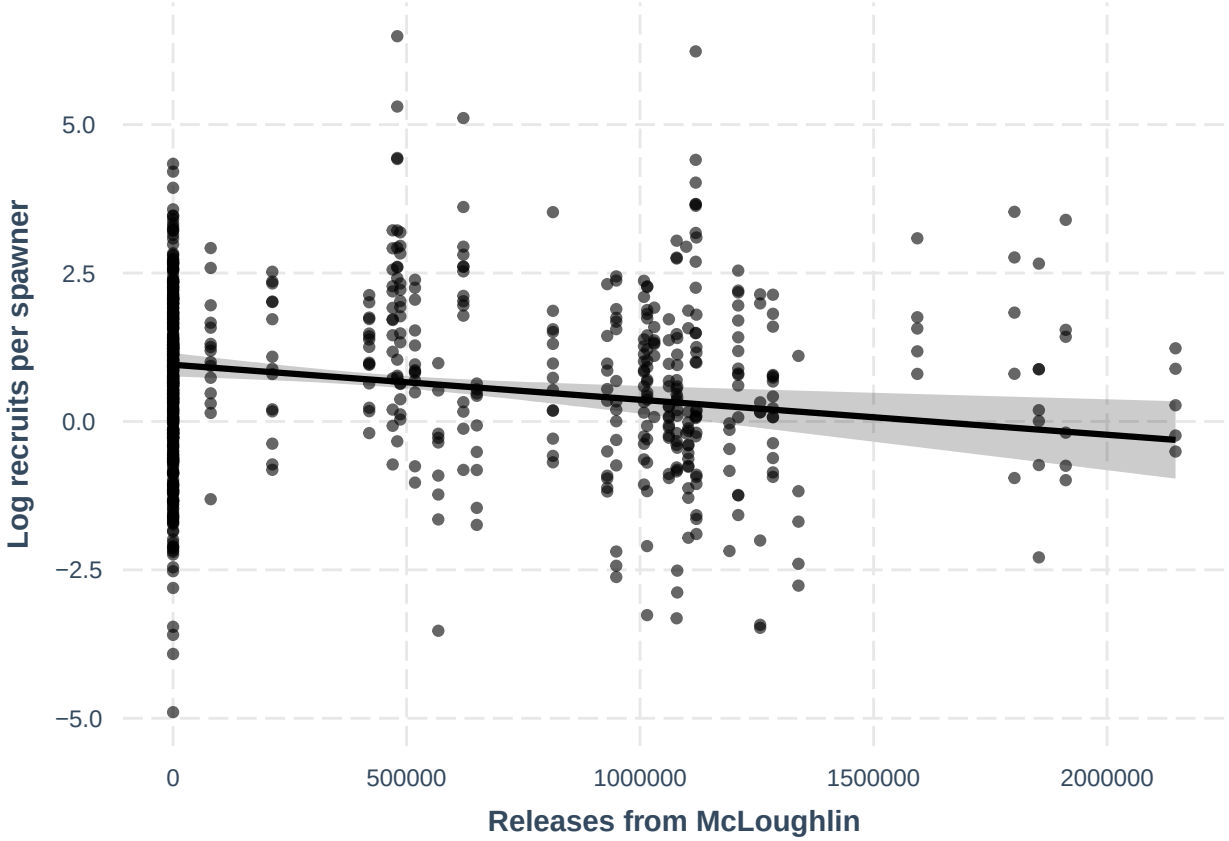
## Table of log escapement candidate models and AIC selection

| 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 |

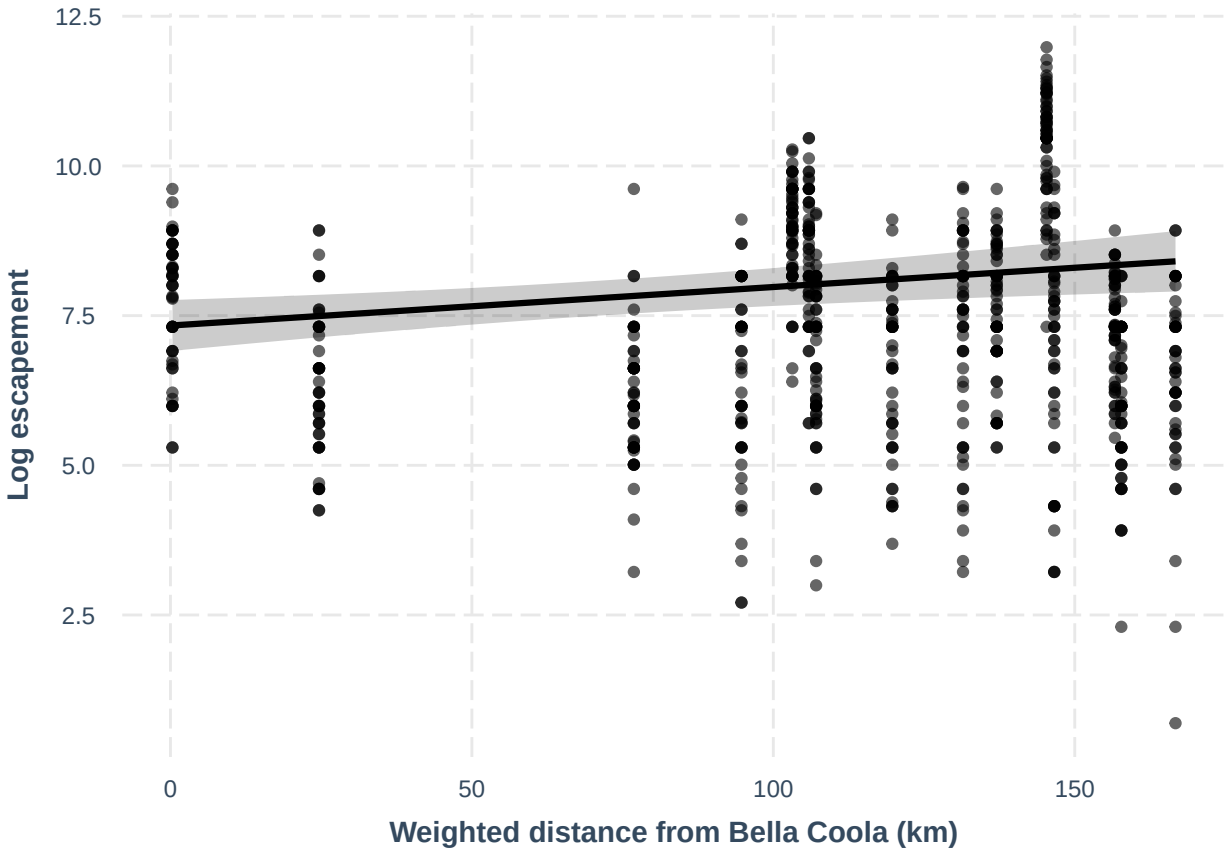
**Effects plot of log RPS against releases from Bella Coola**



**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**