Spatial Analysis Figures

Area 06 - Douglas Gardner CU Chum Salmon

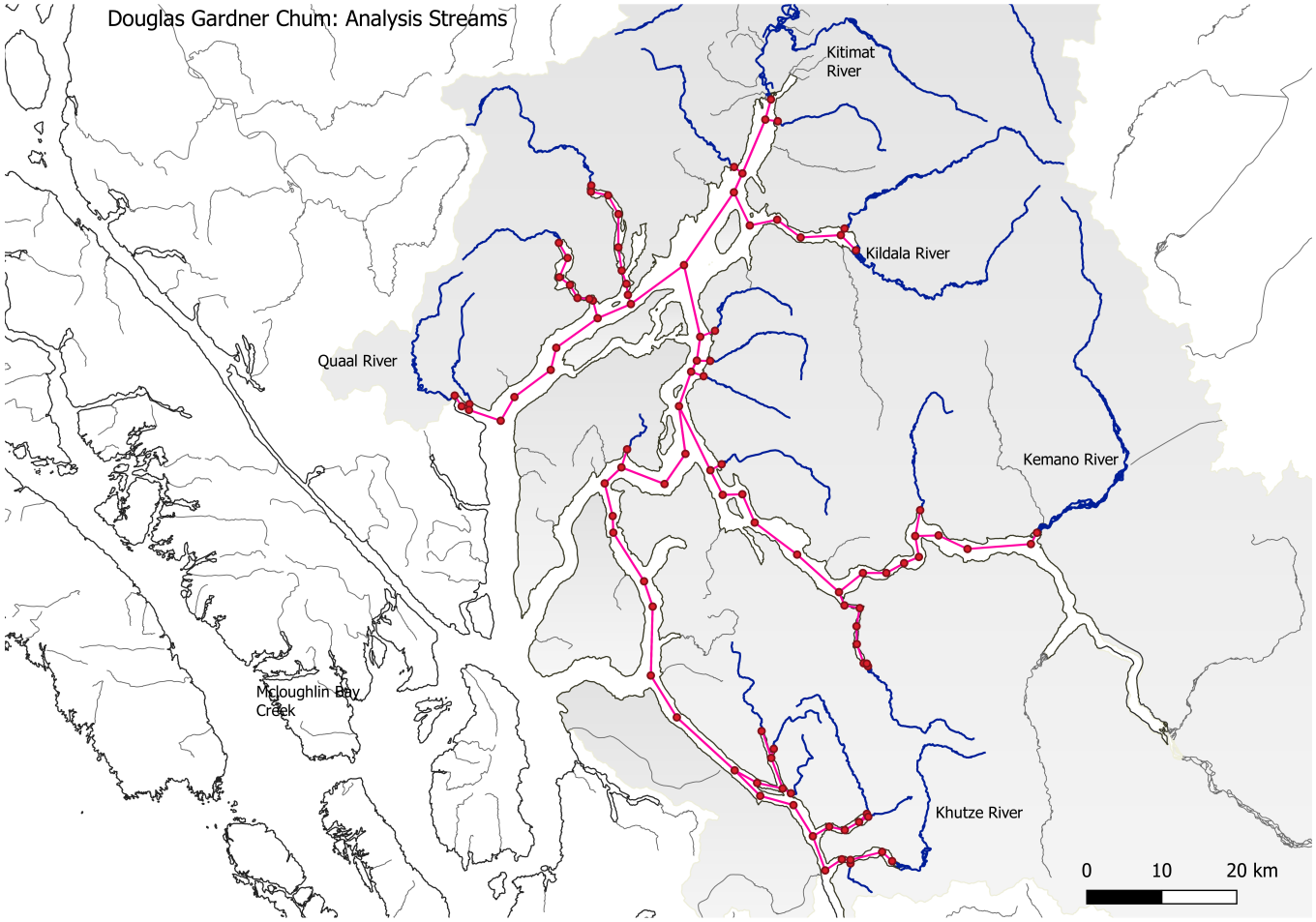
Coastland

2022-11-30

Contents

Study area

Douglas Gardner CU



Summary statistics

Bubbleplot of escapement by enhancement rank

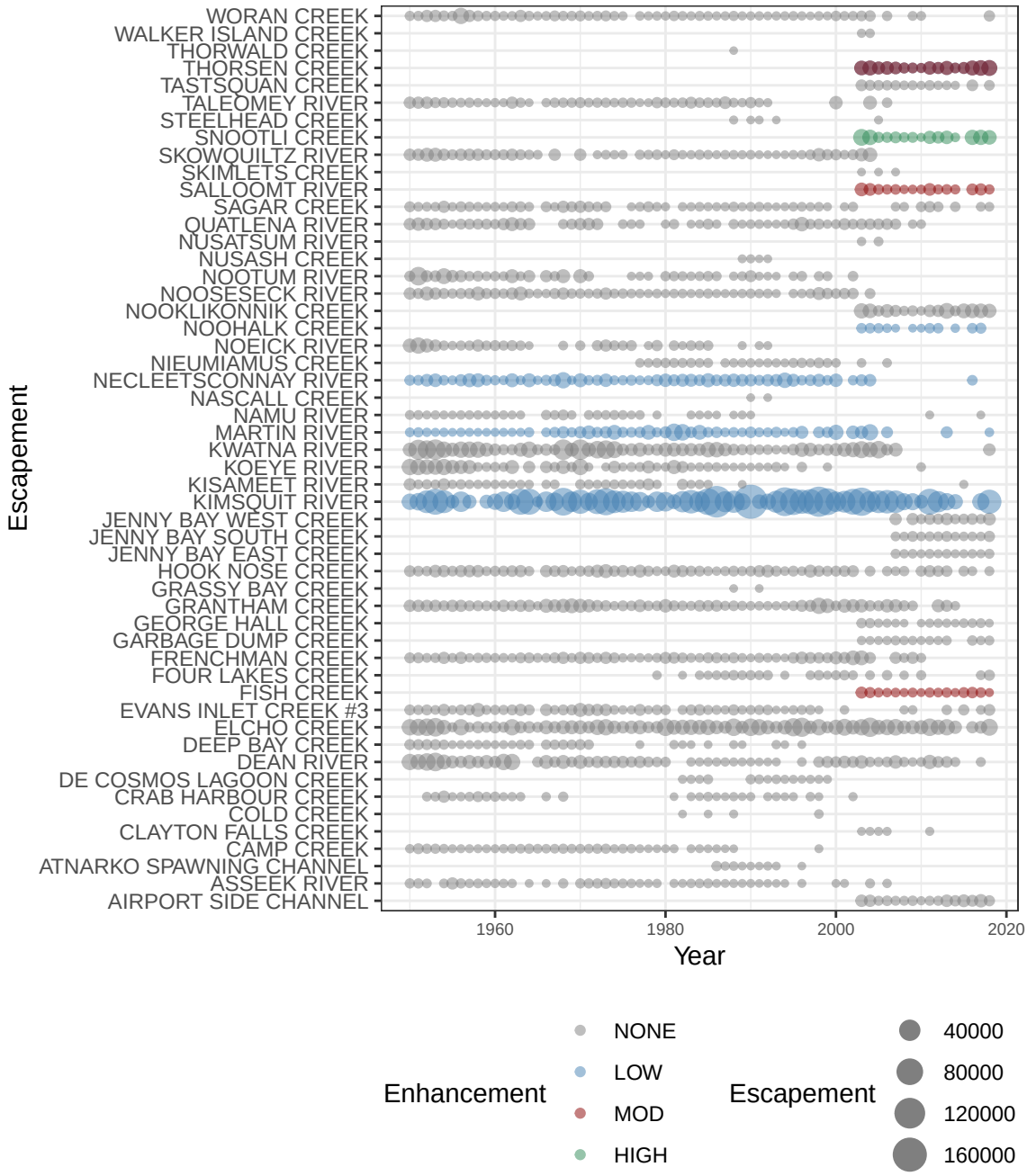


Figure 1: Escapement to area streams by enhancement rank.

Plot of total releases to area

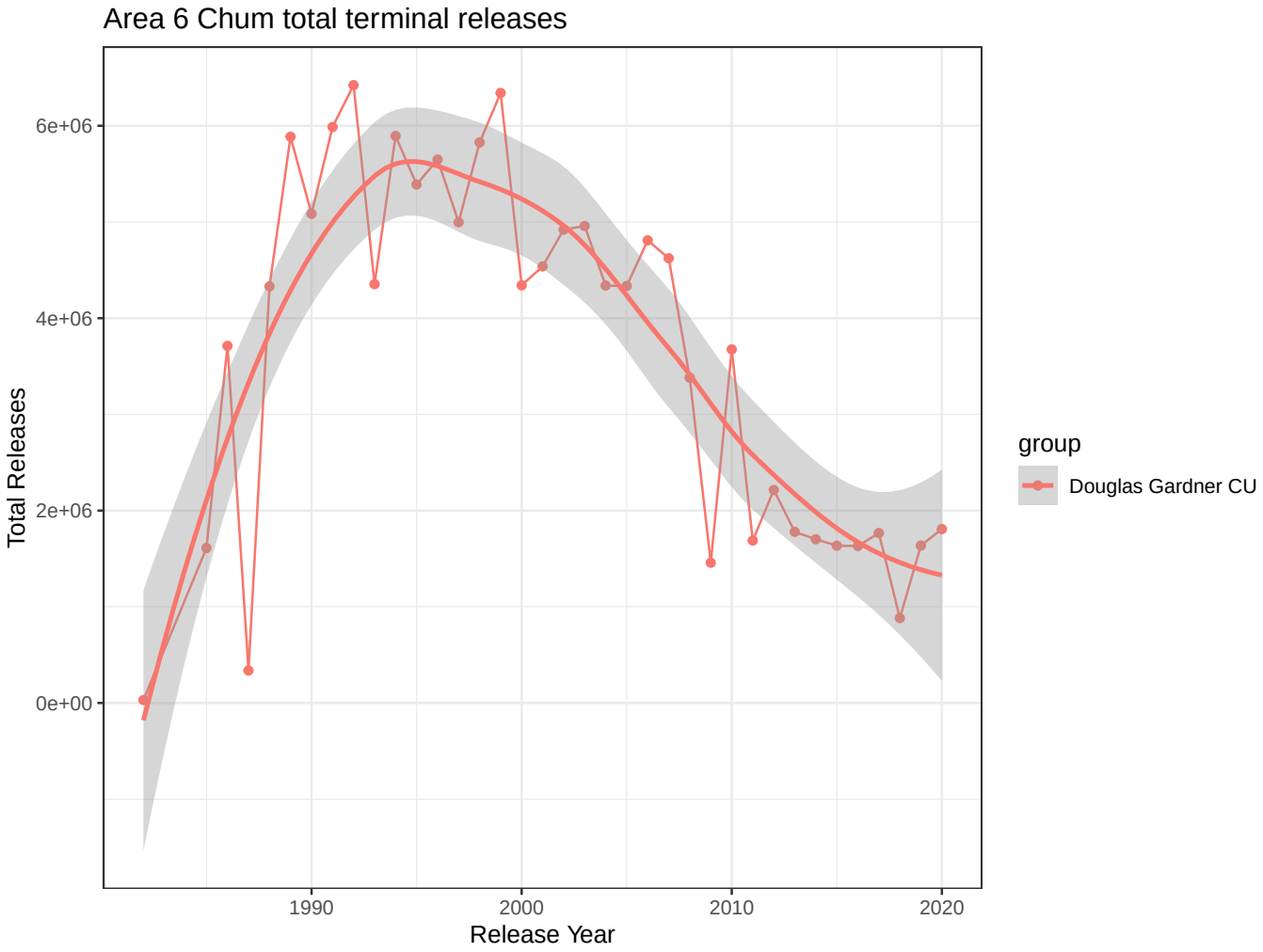


Figure 2: Total releases for area 6 (not including McLoughlin Bay)

Escapement by enhancement rank per system

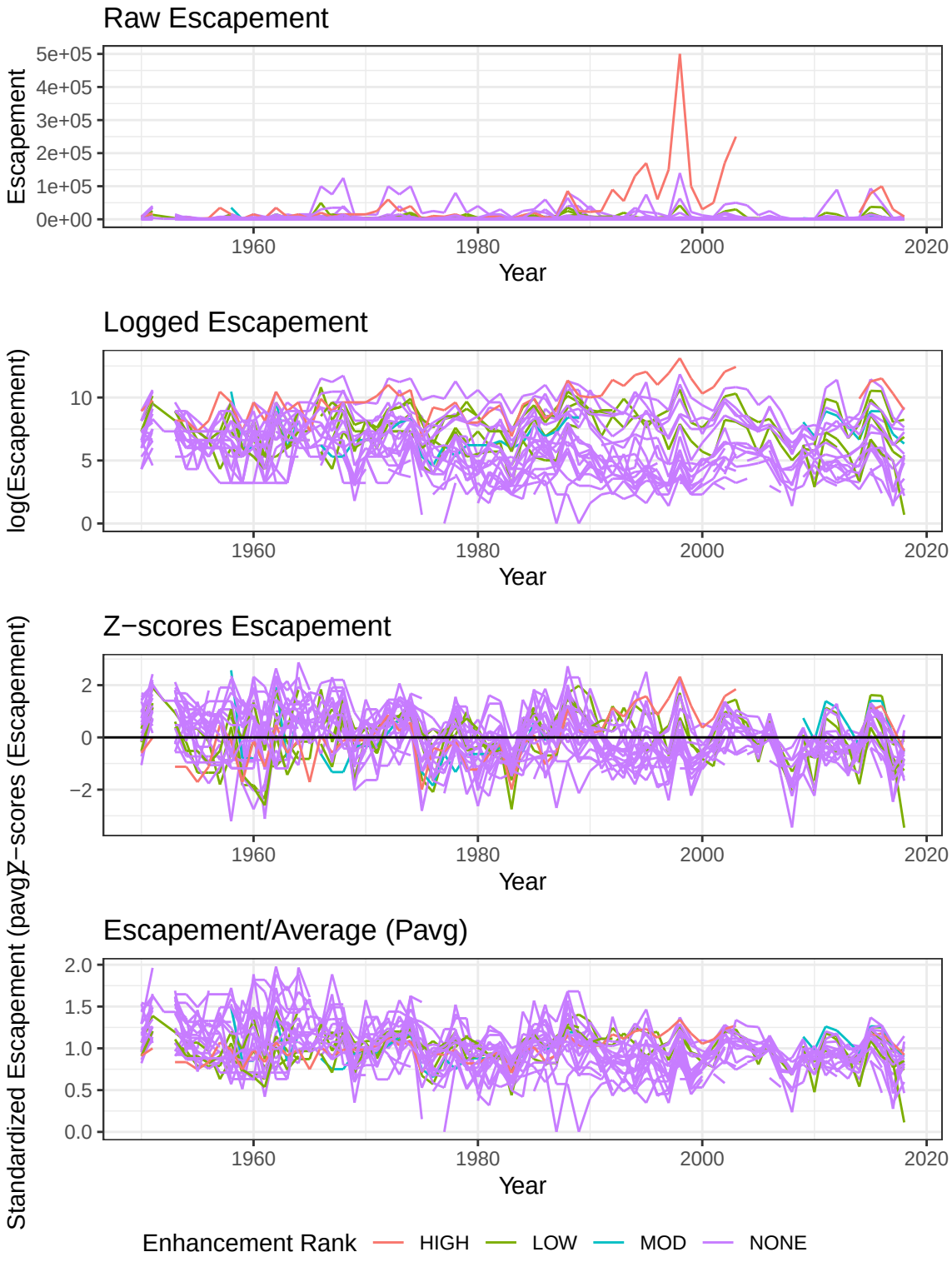


Figure 3: Various plots for escapement and transformations.

Moving average and LOESSS fit on enhancement ranking of log escapements

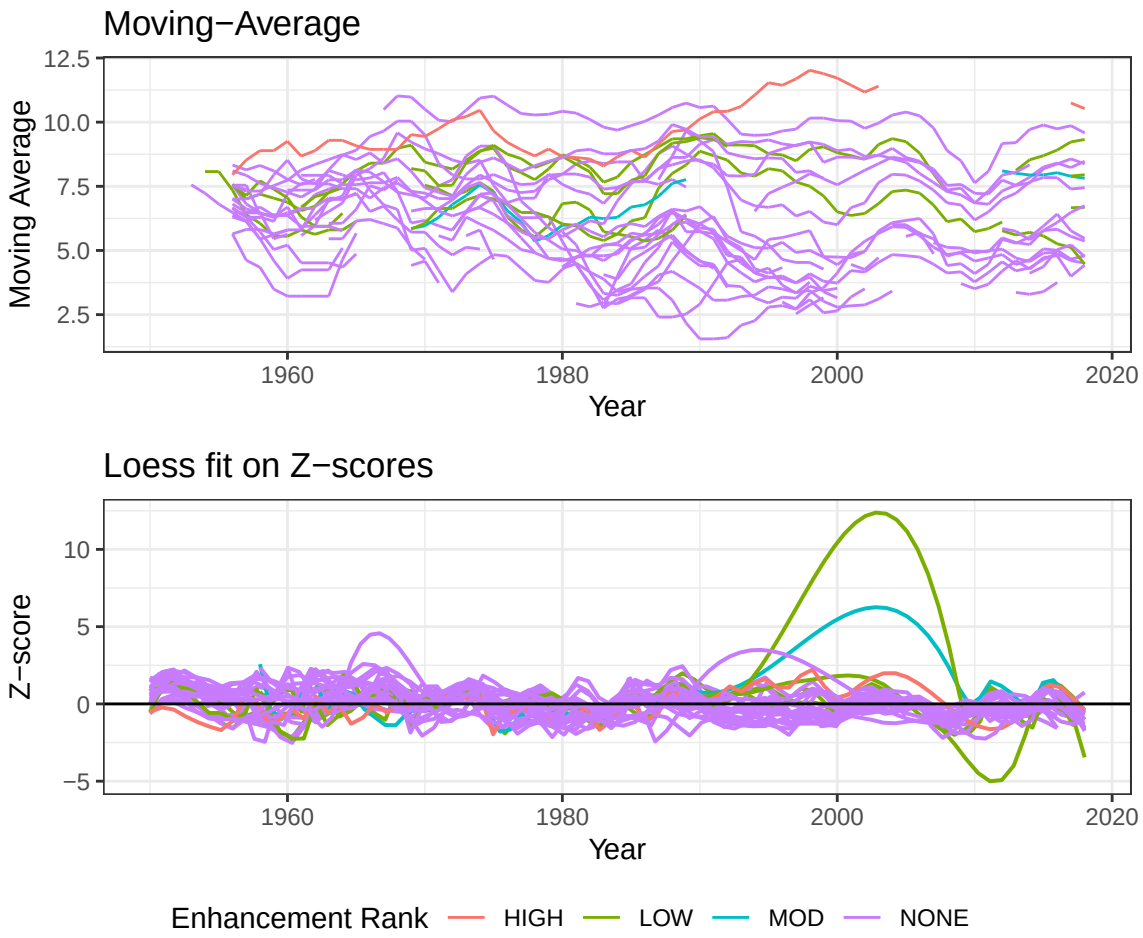


Figure 4: Moving average and LOESS fits on logged escapement by enhancement ranking.

Escapement to streams by enhancement rank

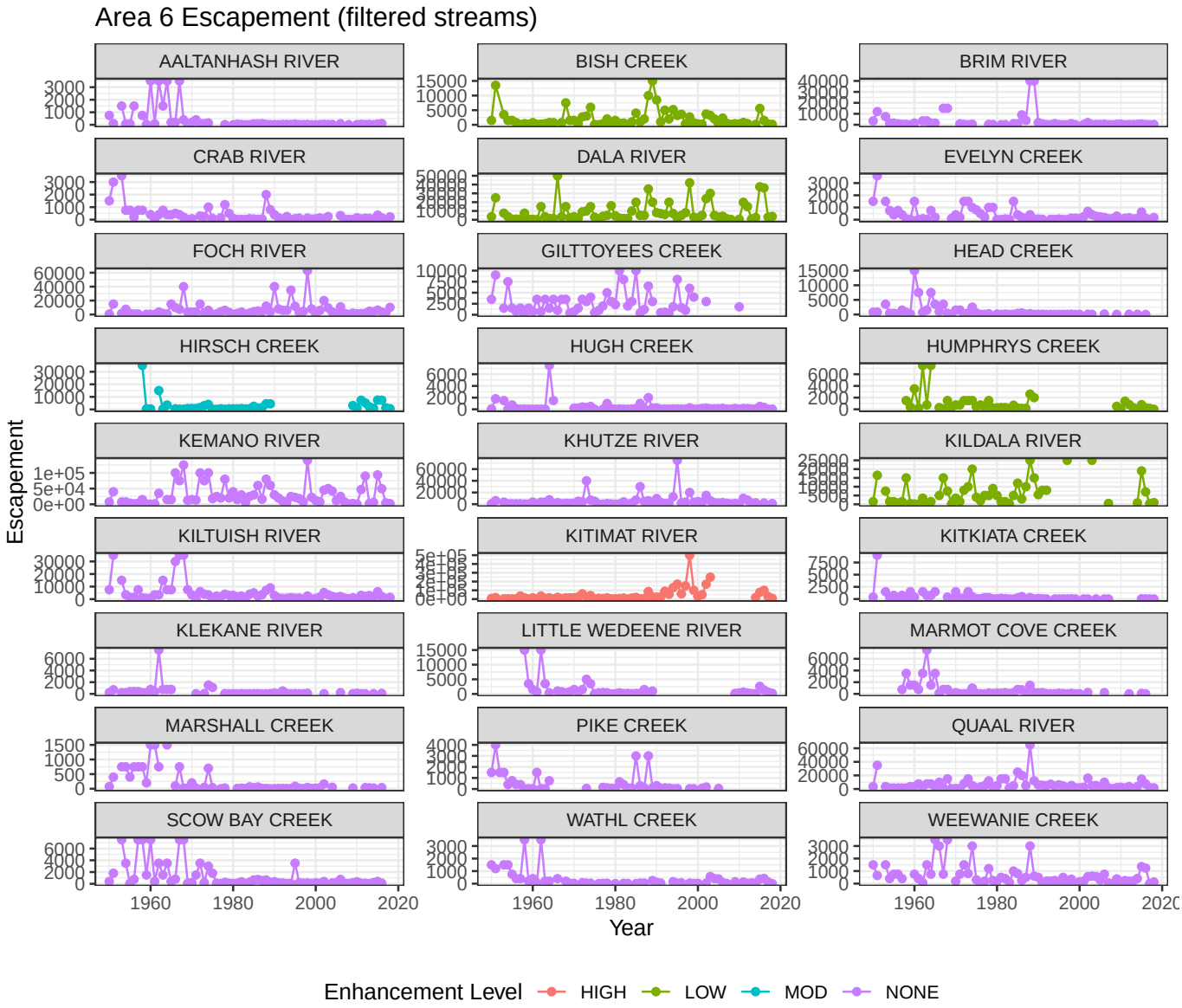


Figure 5: Facet plot of escapements by enhancement level

Facet plot of all releases in Area 6

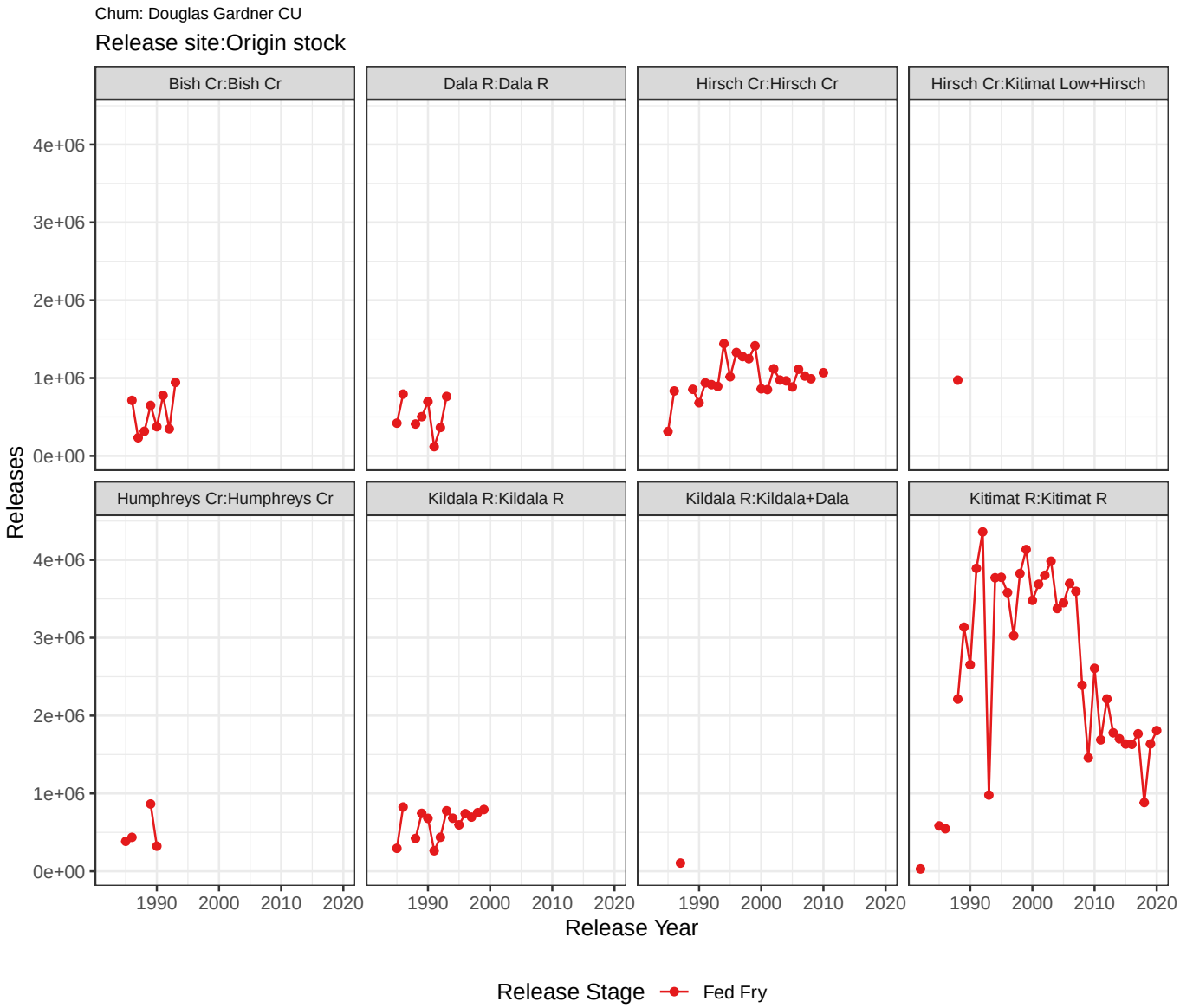


Figure 6: Facet plot of all releases in area 6

Recruits per spawner by system

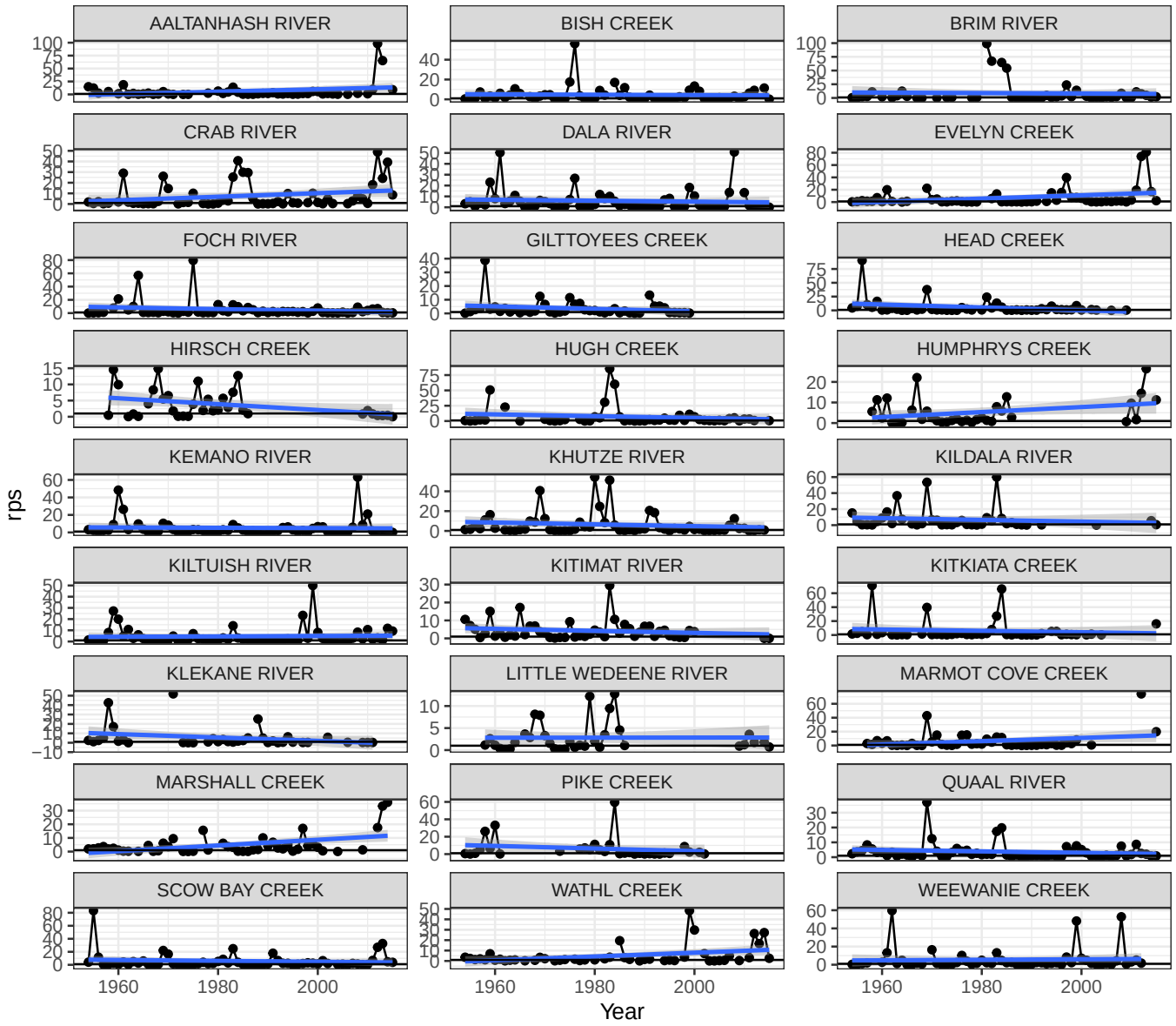


Figure 7: Recruits per spawner by system

Log recruits per spawner by system

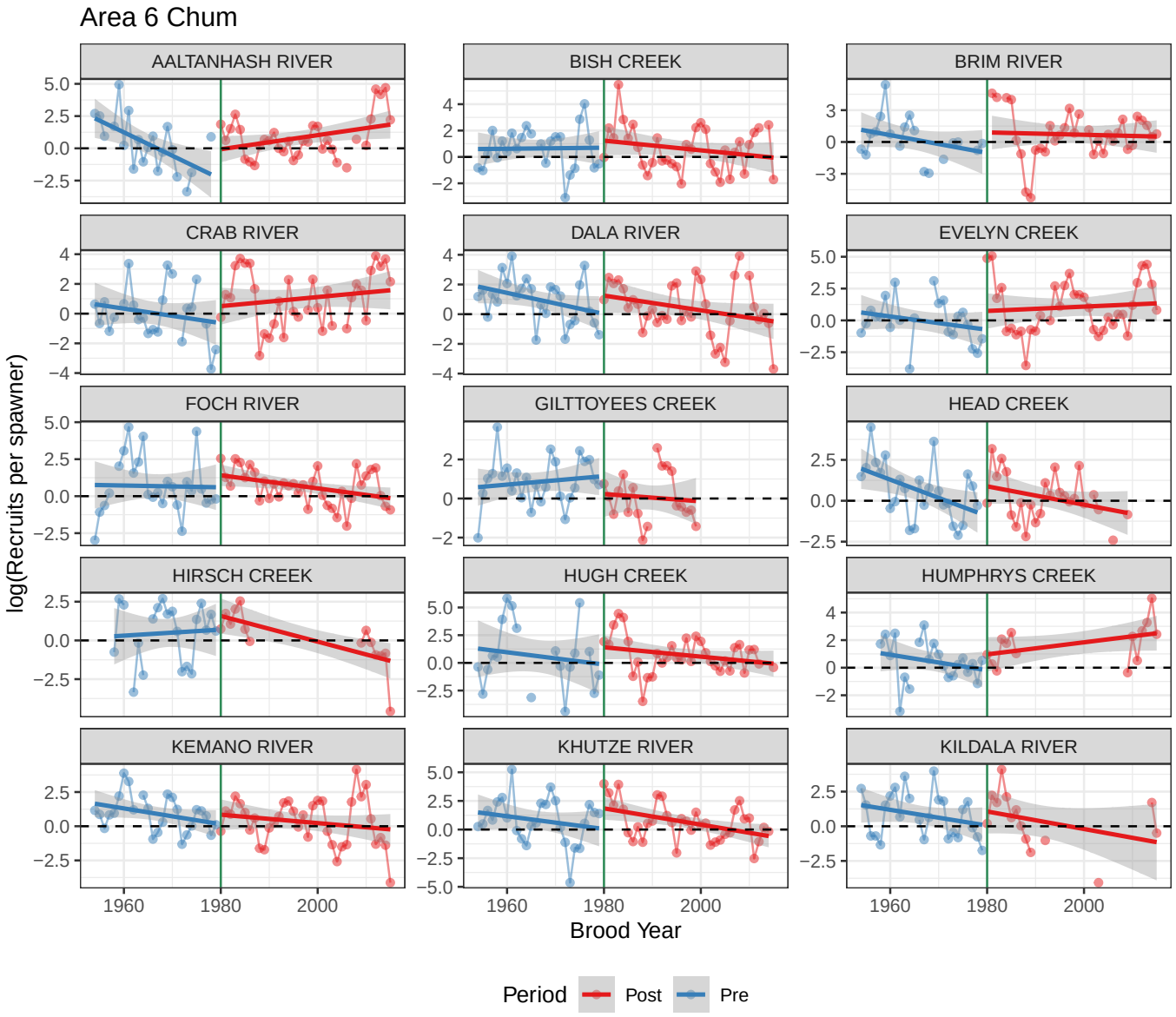


Figure 8: Log recruits per spawner by system

Boxplot of log RPS by system

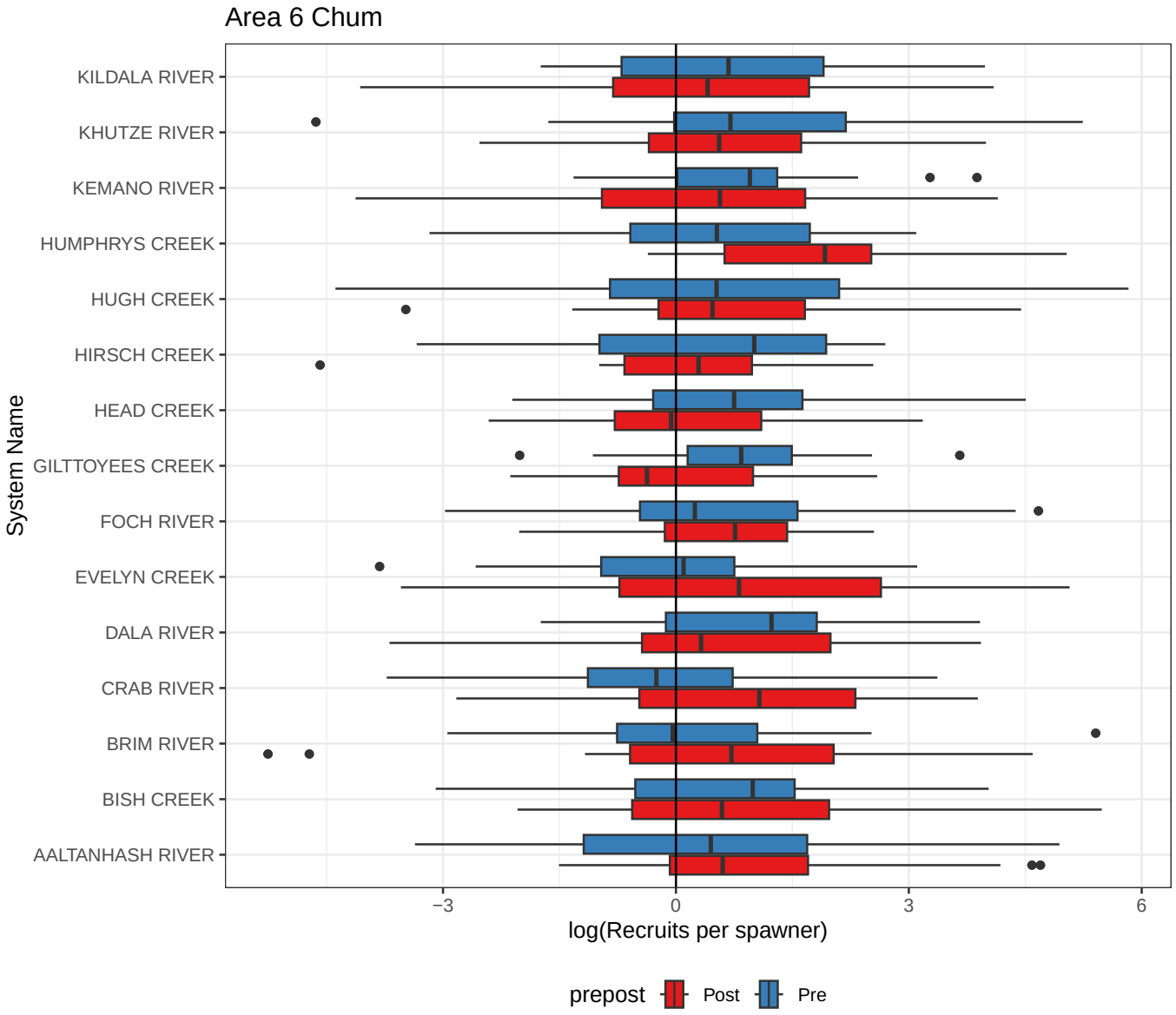


Figure 9: Boxplot of log recruits per spawner by system

Table of Douglas Gardner CU by distance from enhancement

Stream	Dist. from enhancement
BISH CREEK	11.998
WATHL CREEK	4.470
DALA RIVER	32.303
KILDALA RIVER	34.146
KEMANO RIVER	111.829
BRIM RIVER	97.710
HUGH CREEK	37.112
PIKE CREEK	41.635
WEEWANIE CREEK	39.982
GILTTOYEES CREEK	52.216
FOCH RIVER	52.191
QUAAL RIVER	65.544
KITKIATA CREEK	63.528
KILTUISH RIVER	91.658
CRAB RIVER	55.985
EVELYN CREEK	64.768
MARSHALL CREEK	133.004
KLEKANE RIVER	124.855
SCOW BAY CREEK	122.091
MARMOT COVE CREEK	117.746
AALTANHASH RIVER	132.200
KHUTZE RIVER	138.697
HEAD CREEK	132.104

Correlation analyses

Cross correlation plots

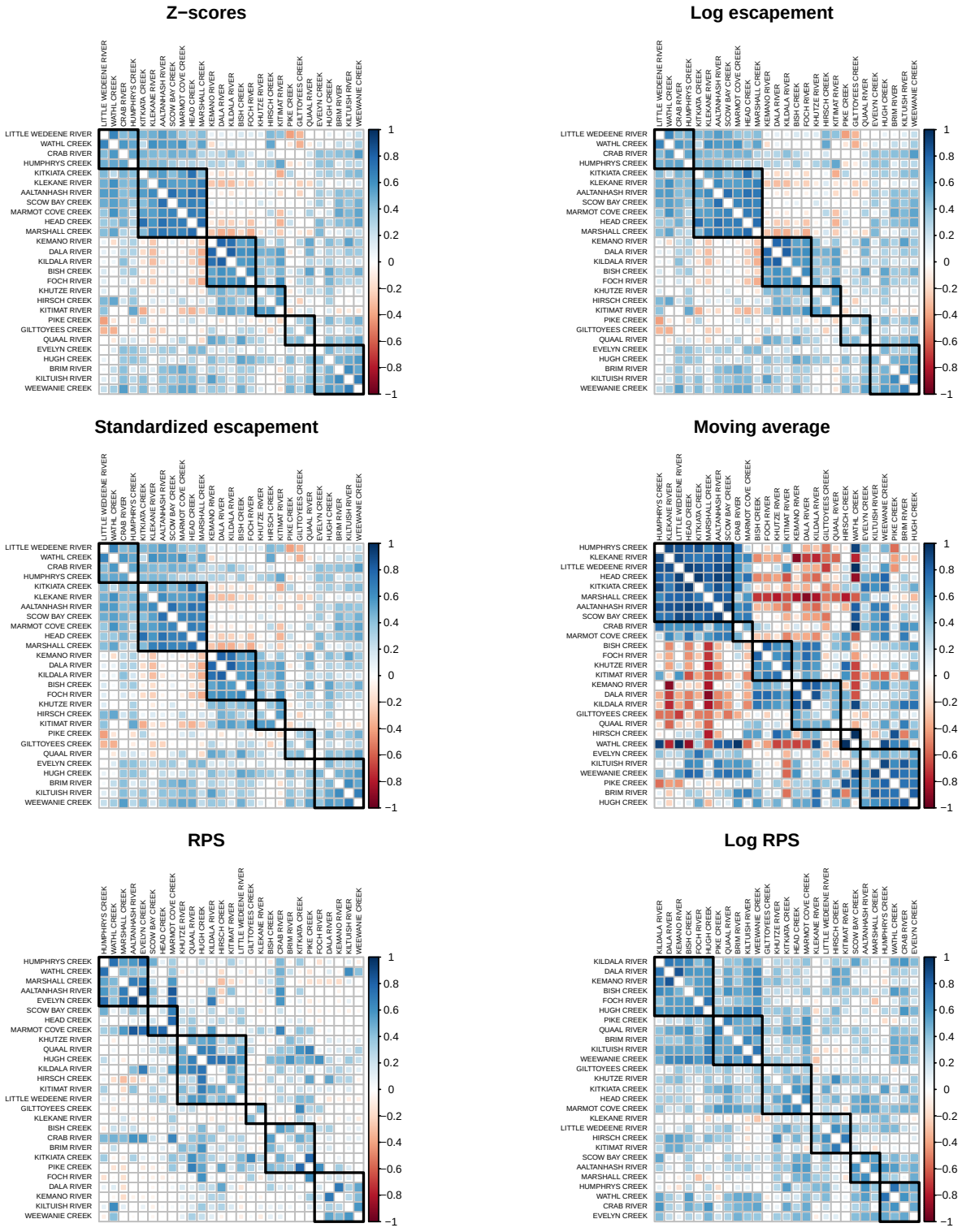


Figure 10: Cross correlation plots to compare metrics.

Dendrogram clusters analysis

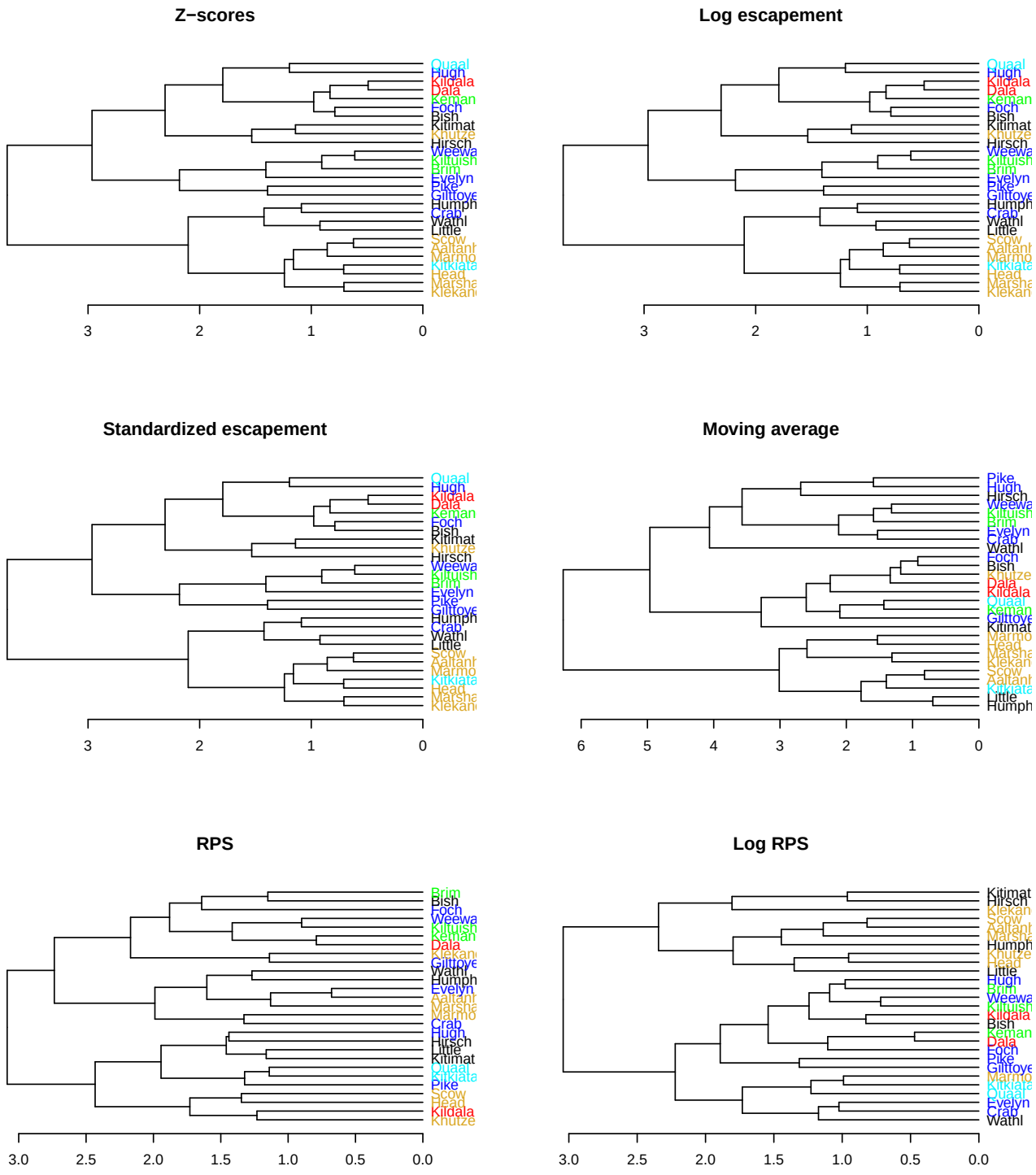


Figure 11: Dendrogram cluster analysis to compare uses of different metrics. Colours plotted by subinlet; Dala = red; Douglas = blue; Kemano = green; Khutze = yellow; Kitimat arm = black; Quaal = turquoise

Tanglegrams

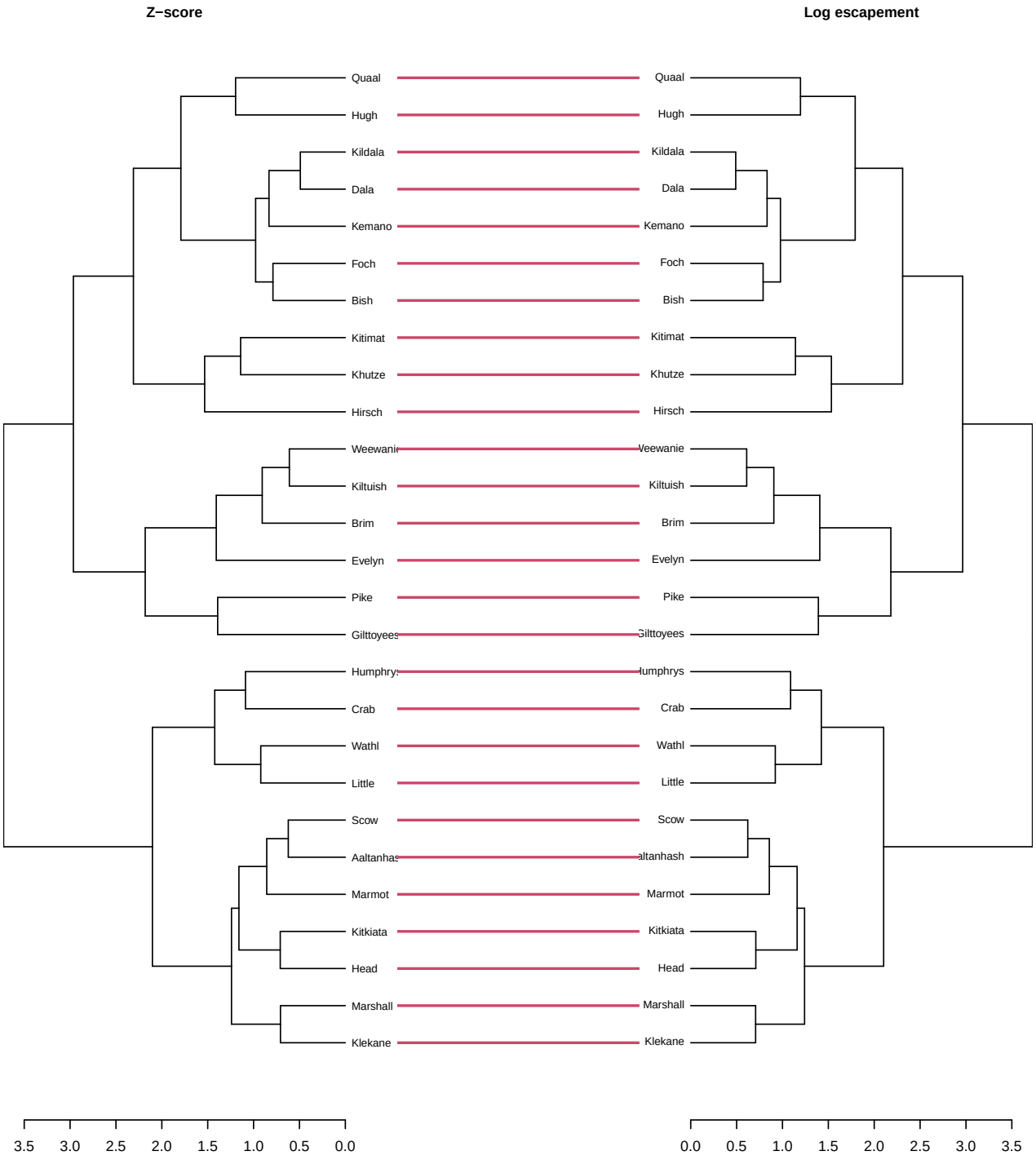


Figure 12: Tanglegram of z-score vs. logged escapements

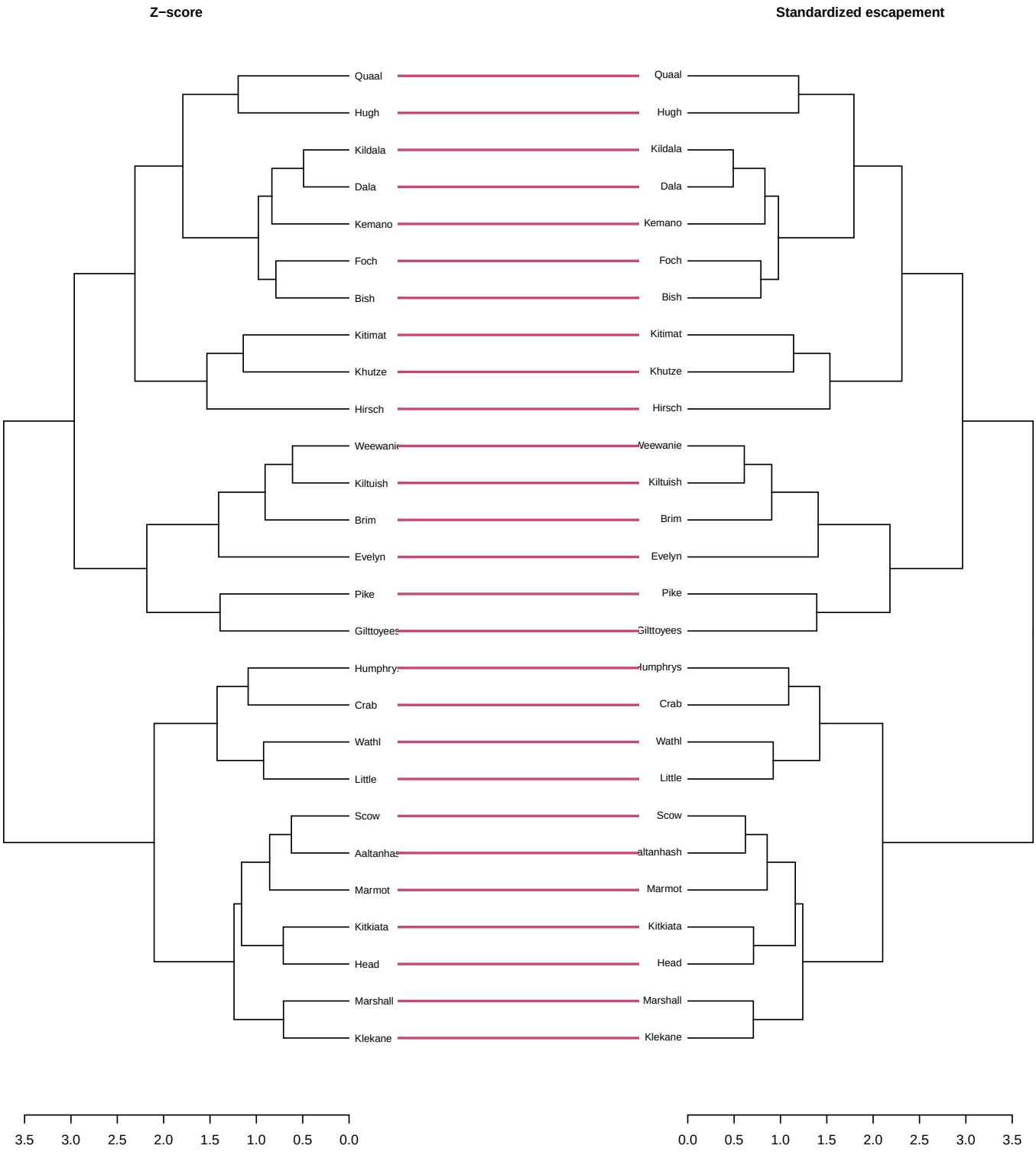


Figure 13: Tanglegram of z-score vs. standardized escapements

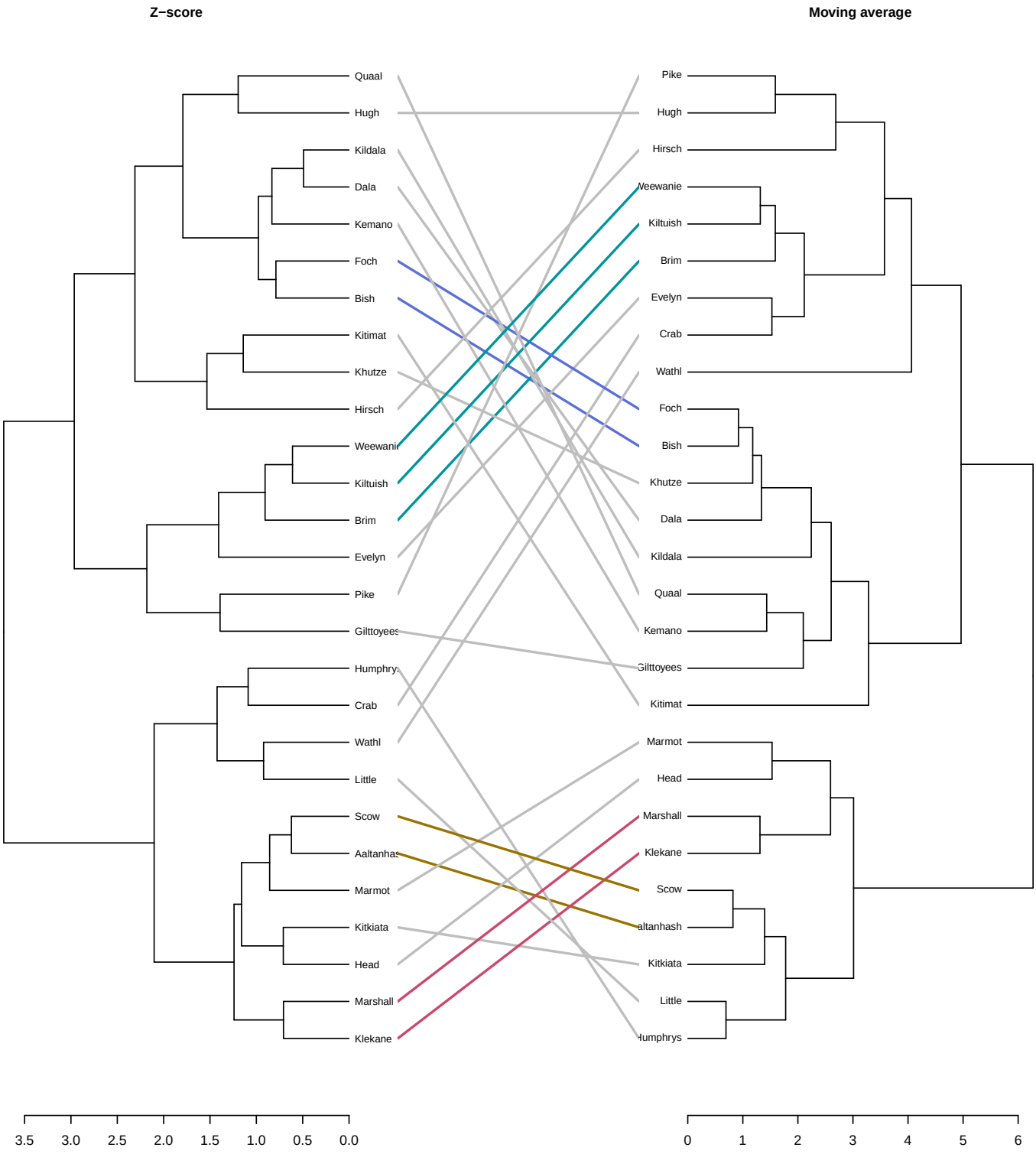


Figure 14: Tanglegram of z-score vs. moving average

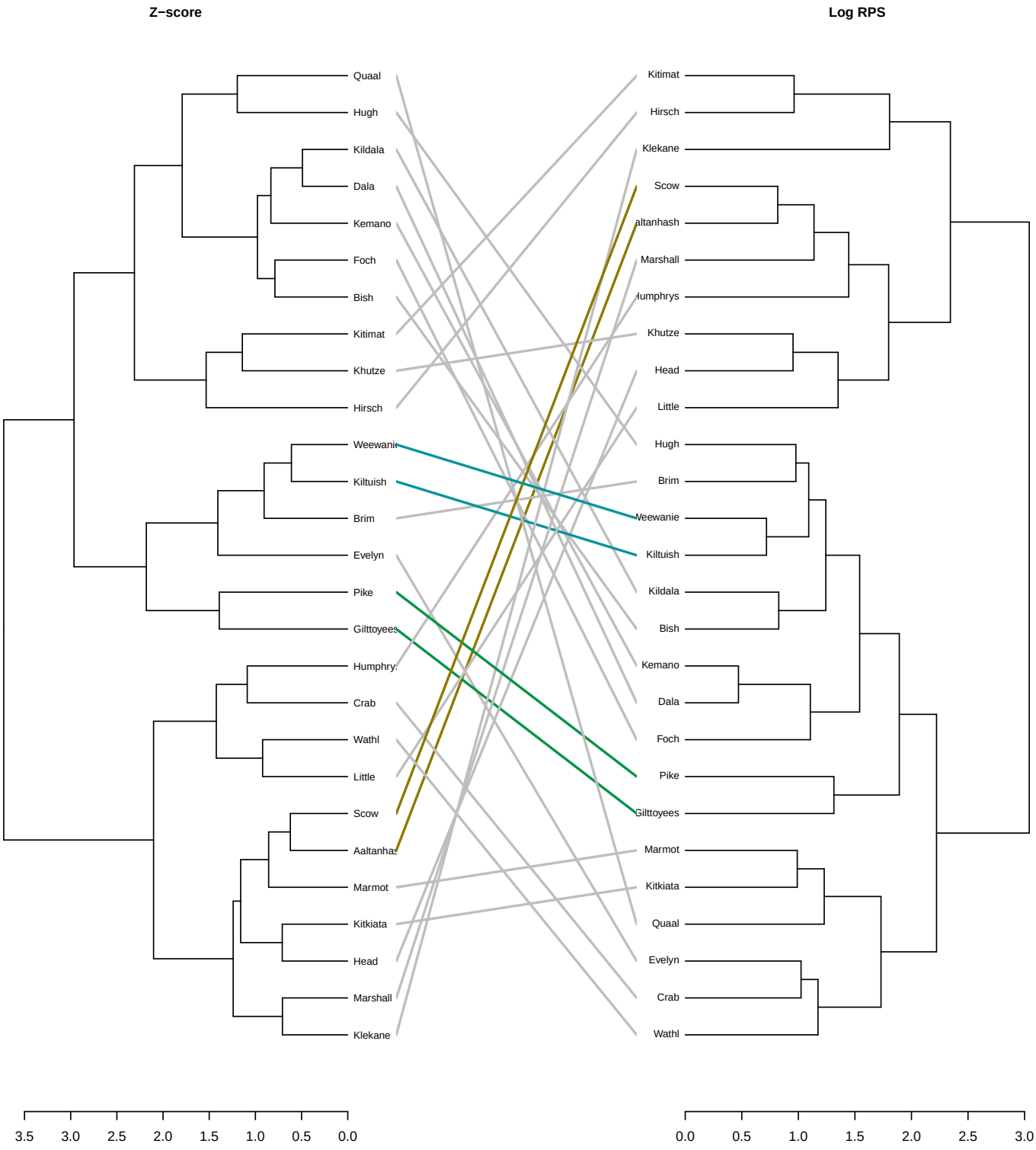


Figure 15: Tanglegram of z-score vs. Log RPS

Statistical models

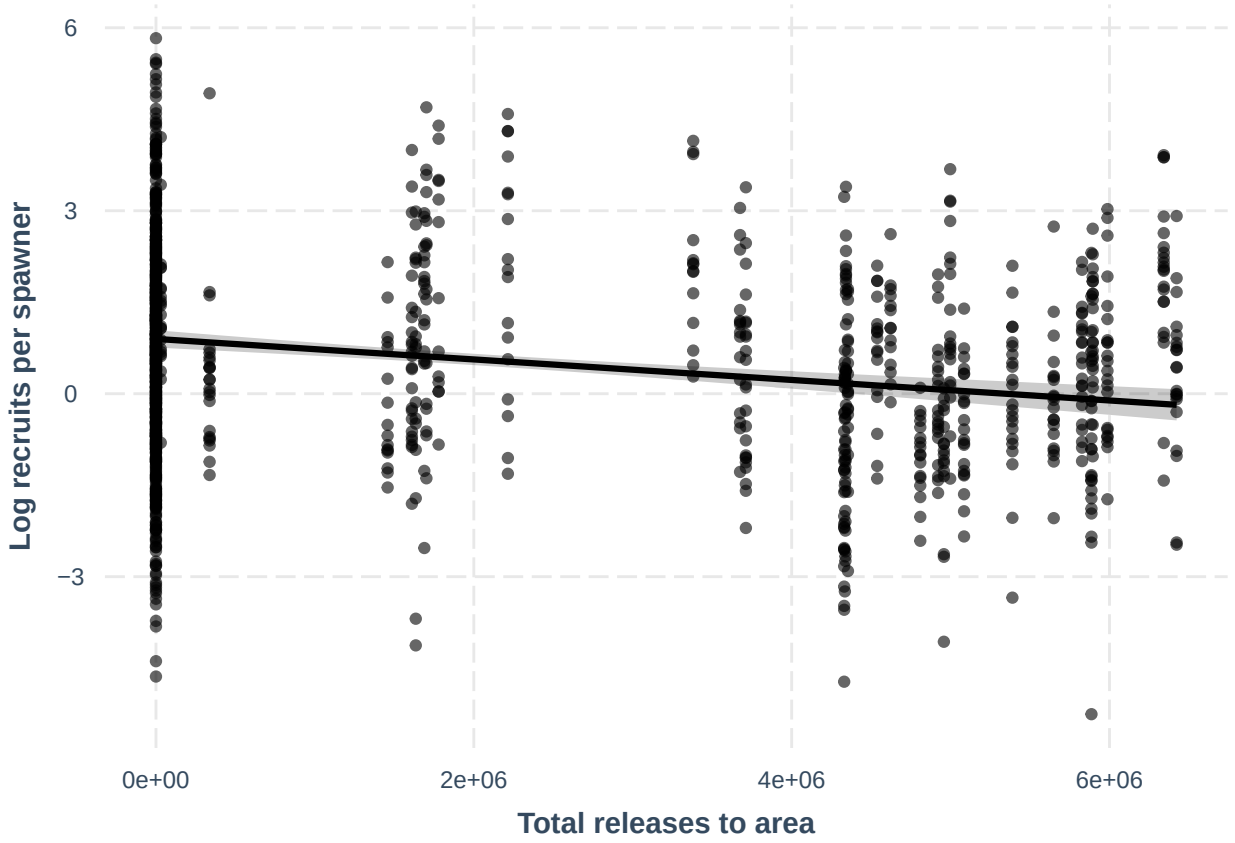
Table of log RPS candidate models and AIC selection

Candidate model	df	AIC
Log RPS ~ dist + totrel + year	5	4640.250
Log RPS ~ dist + totrel	4	4649.087
Log RPS ~ dist	3	4674.840
Log RPS ~ dist + year	4	4675.224
Log RPS ~ releases	3	5213.524
Log RPS ~ year	3	5237.491

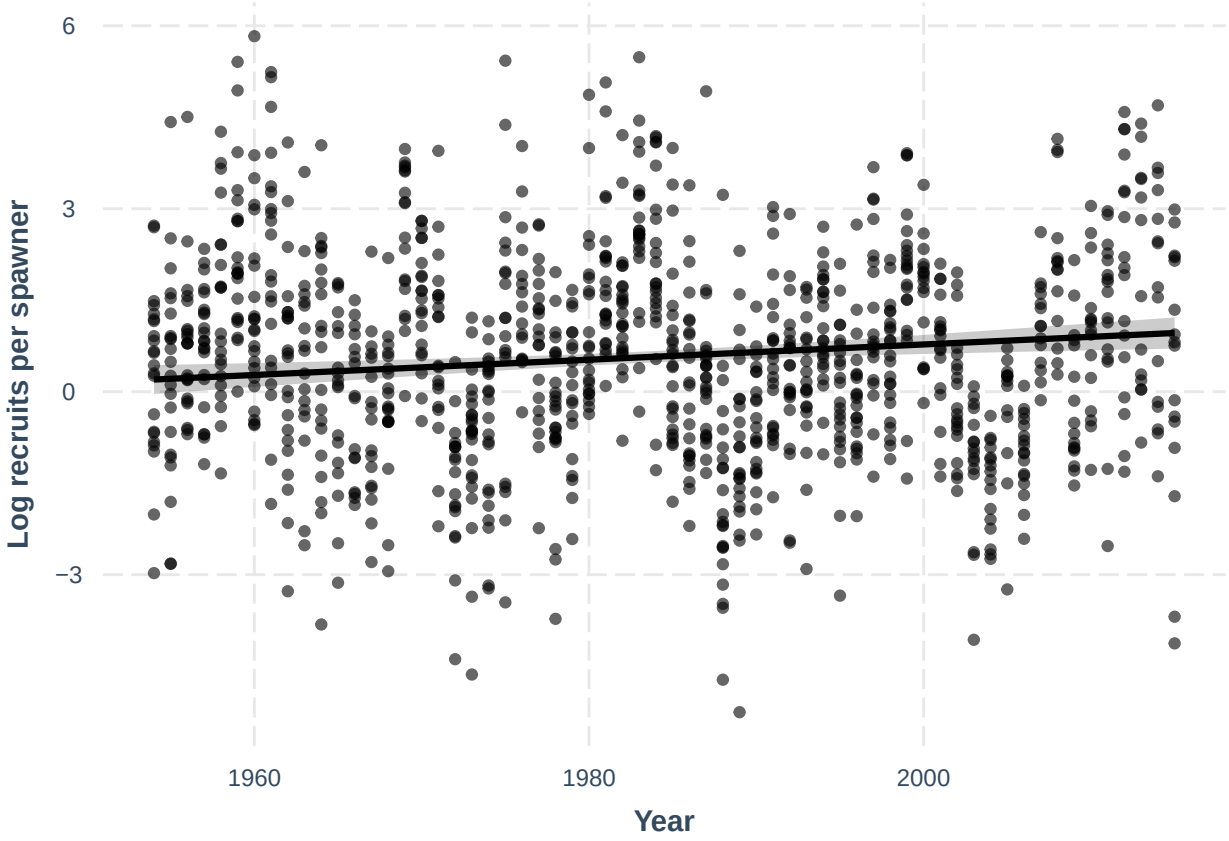
Table of log escapement candidate models and AIC selection

Candidate model	df	AIC
Log esc ~ dist + year	4	5455.093
Log esc ~ dist + totrel + year	5	5457.085
Log esc ~ dist + totrel	4	5468.276
Log esc ~ dist	3	5478.798
Log esc ~ year	3	6220.673
Log esc ~ releases	3	6236.895

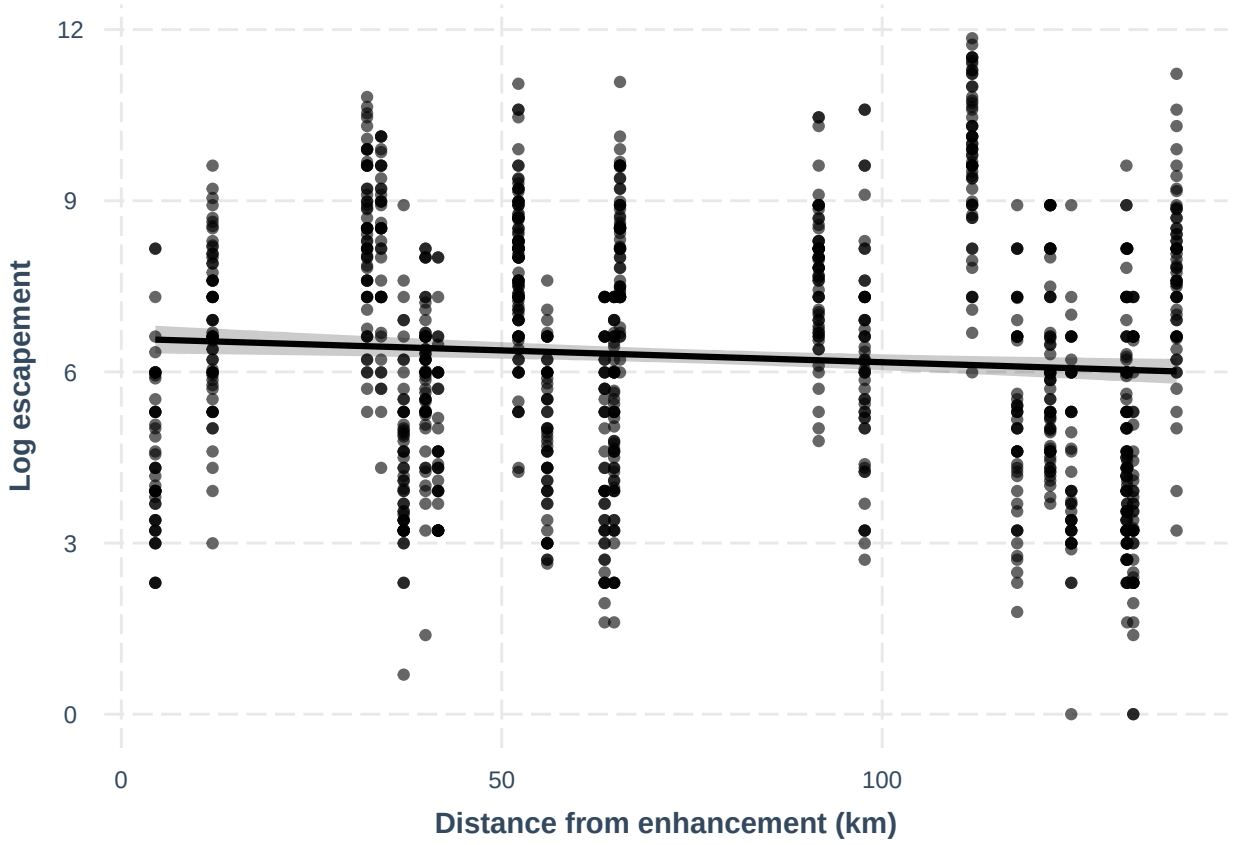
Effects plot of log RPS against releases to area



Effects plot of log RPS against year



Effects plot of log Escapement against distance from enhancement



Effects plot of log Escapement against year