

10. Energy use, CWR use, and survivorship results for Grande Ronde River summer steelhead under year 2017 temperatures for the Columbia River

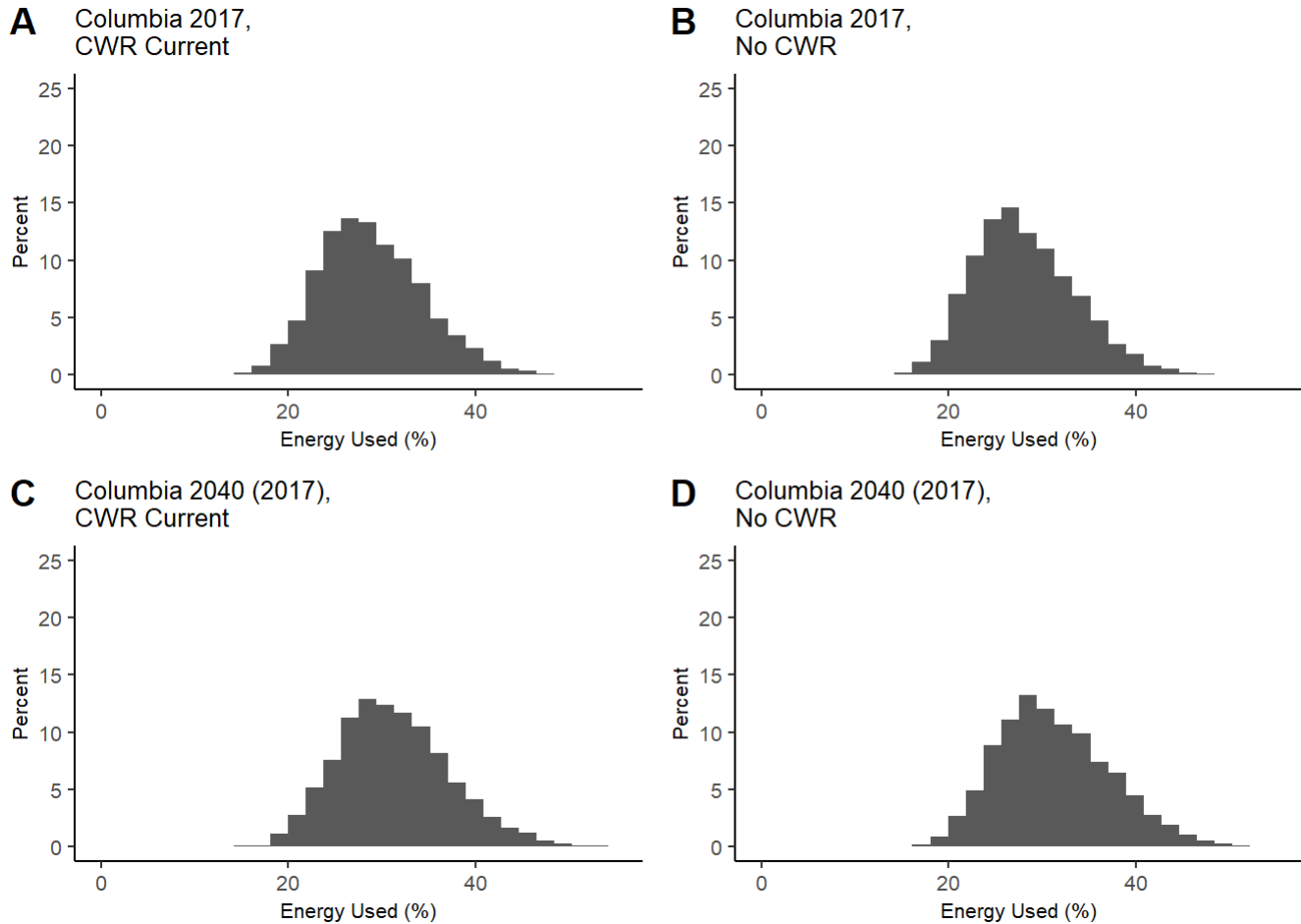


Fig. 10.1 Histogram of percent energy lost for modeled Grande Ronde summer steelhead migrating through different modeled thermalscapes.

Grande Ronde River Summer Steelhead

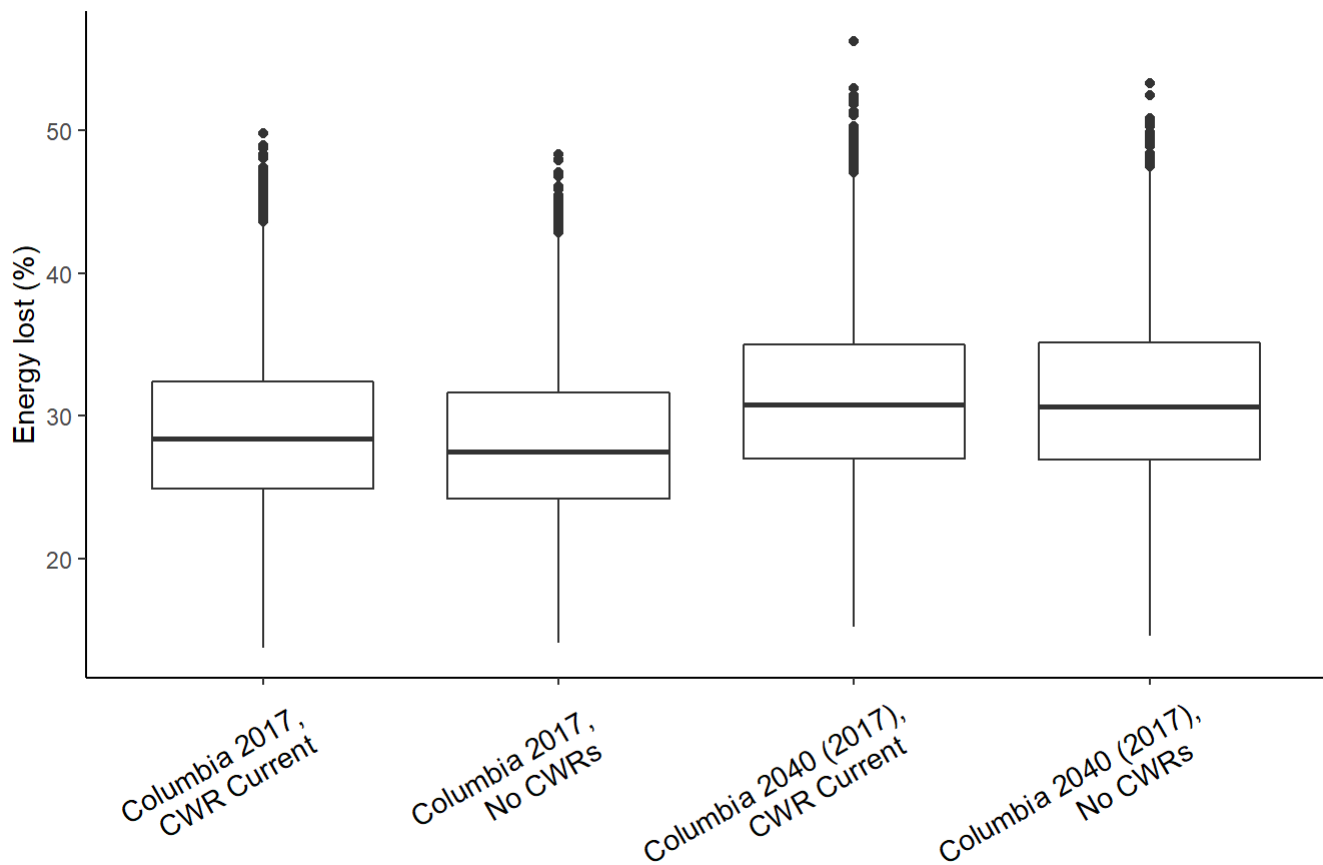


Fig. 10.2 Boxplot of percent energy lost for modeled Grande Ronde summer steelhead migrating through different modeled thermalscapes.

Table 10.1 Percent energy used across different HexSim thermalscapes summarized for Grande Ronde River Summer Steelhead.

Scenario	Minimum	25% quantile	Median	75% quantile	Maximum
Columbia 2017, CWR Current	14	25	28	32	50
Columbia 2017, No CWR	14	24	27	32	48
Columbia 2017, CWR Current	15	27	31	35	56
Columbia 2017, No CWR	15	27	31	35	53

Table 10.2 Model output for hours residing in cold water refuges summarized for Grande Ronde River Summer Steelhead.

Scenario	CWR Residence (h/individual)
Columbia 2017,CWR Current	474
Columbia 2017, No CWRs	4
Columbia 2040 (2017), Current	500
Columbia 2040 (2017), No CWRs	0

Table 10.3 Model output for percent of individuals dying from acute temperature stress summarized for Grande Ronde River Summer Steelhead.

Scenario	Total mortality
Columbia 2017,CWR Current	0.23
Columbia 2017, No CWRs	0.53
Columbia 2040 (2017), Current	1.07
Columbia 2040 (2017), No CWRs	1.90