4. Energy use, CWR use, and survivorship results for Grande Ronde River summer steelhead under long-term average temperatures for the Columbia River

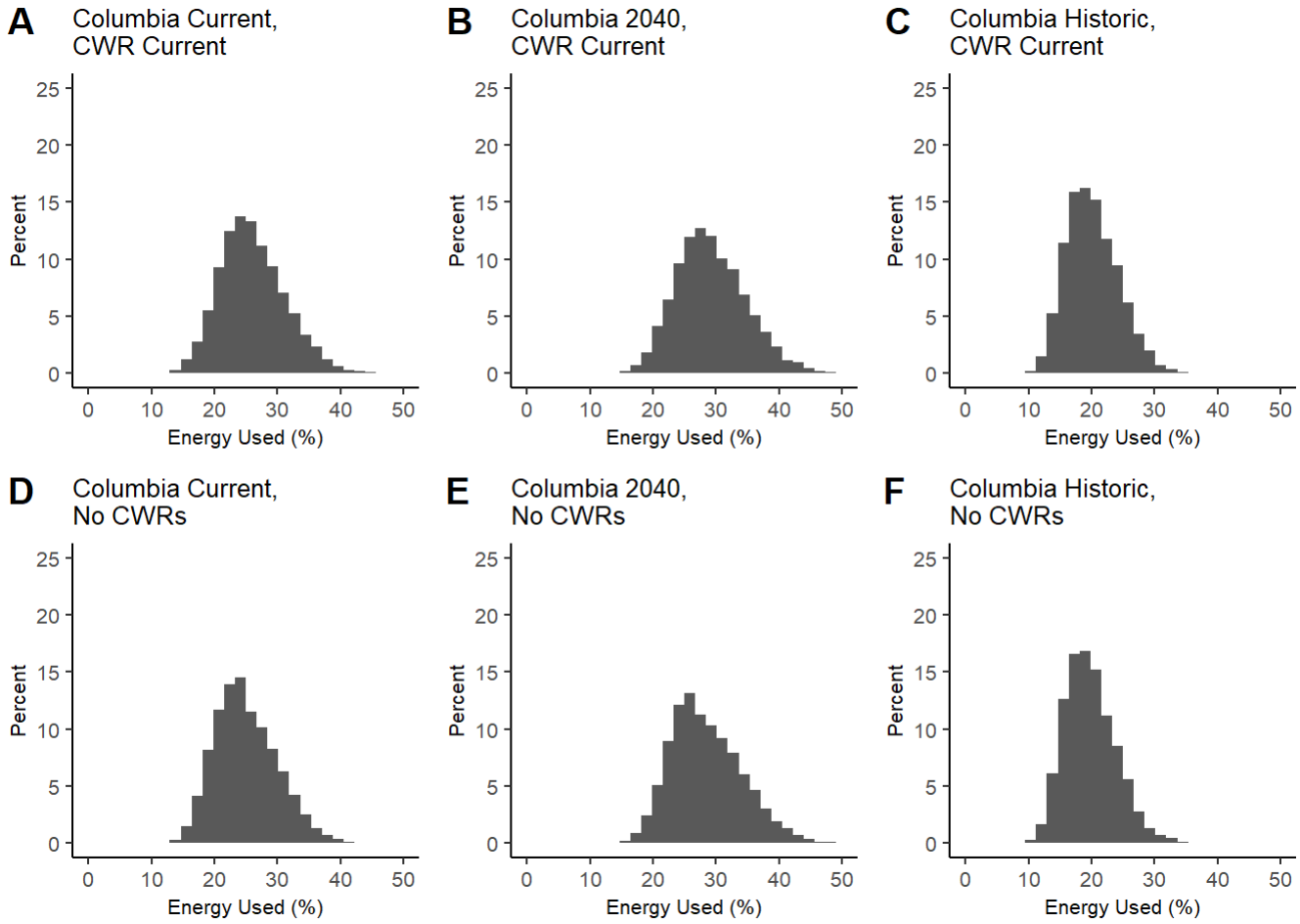

Fig. 4.1 Histogram of percent energy lost for modeled Grande Ronde summer steelhead migrating through different modeled thermalscapes.

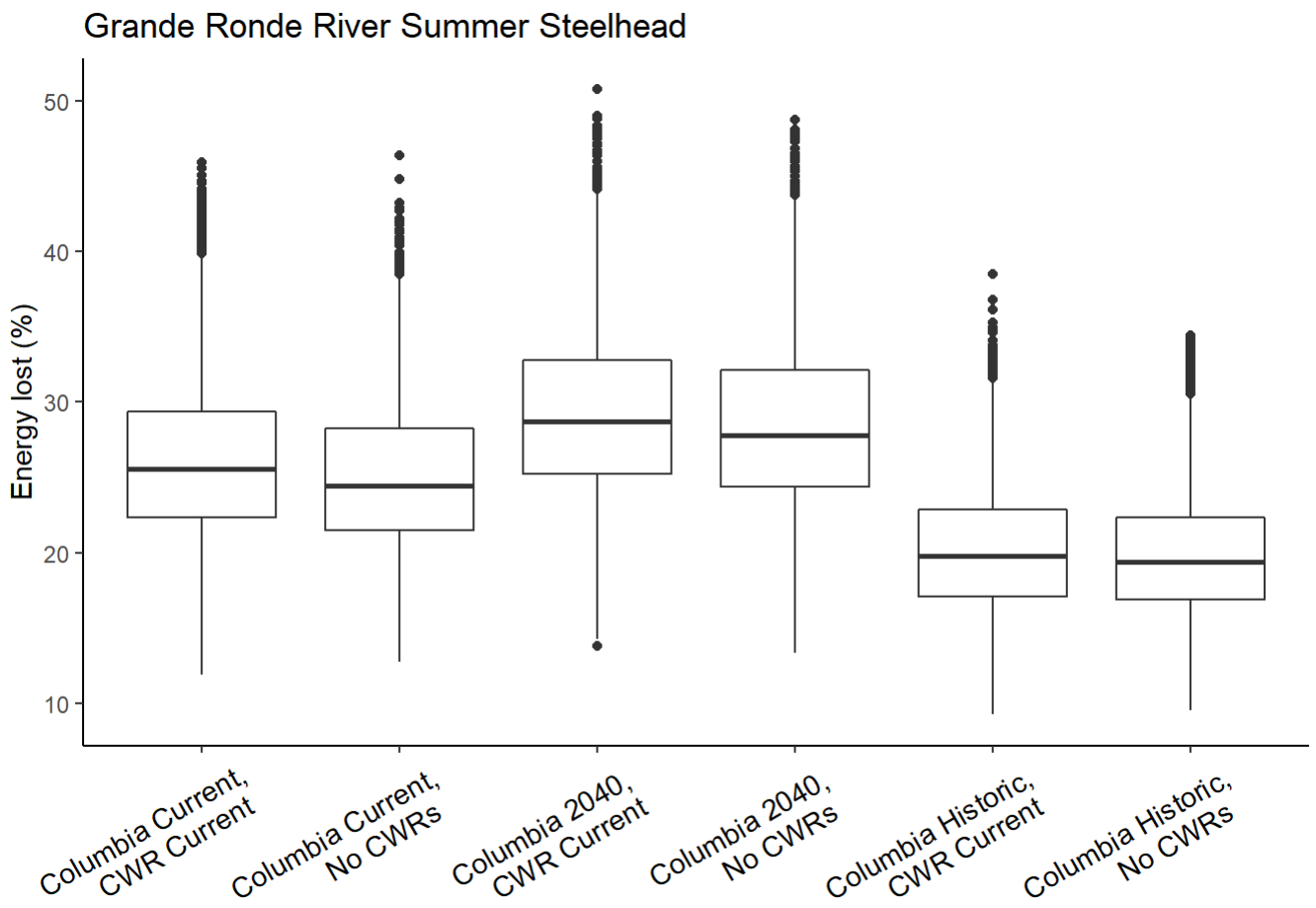

Fig. 4.2 Boxplot of percent energy lost for modeled Grande Ronde summer steelhead migrating through different modeled thermalscapes.

Table 4.1 Percent energy used across different HexSim thermalscapes summarized for Grande Ronde River Summer Steelhead.

Scenario	Minimum	25% quantile	Median	75% quantile	Maximum
Columbia 2040, CWR Current	13.8	25.2	28.7	32.8	50.8
Columbia Historic, CWR Current	9.2	17.1	19.8	22.9	38.5
Columbia Current, CWR Current	11.8	22.3	25.5	29.3	45.9
Columbia 2040, No CWRs	13.3	24.4	27.8	32.1	48.8
Columbia Historic, No CWRs	9.5	16.9	19.4	22.4	34.4
Columbia Current, No CWRs	12.8	21.5	24.4	28.3	46.4

Table 4.2 Model output for hours residing in cold water refuges summarized for Grande Ronde River Summer Steelhead.

Scenario	CWR Residence (h/individual)
Columbia Current,CWR Current	389
Columbia Current, No CWRs	0

Scenario	CWR Residence (h/individual)
Columbia 2040, Current	497
Columbia 2040, No CWRs	0
Columbia Historic, Current	124
Columbia Historic, No CWRs	0

Table 4.3 Model output for percent of individuals dying from acute temperature stress summarized for Grande Ronde River Summer Steelhead.

Scenario	Total mortality
Columbia Current,CWR Current	0.02
Columbia Current, No CWRs	0.02
Columbia 2040, Current	0.32
Columbia 2040, No CWRs	0.53
Columbia Historic, Current	0.00
Columbia Historic, No CWRs	0.00