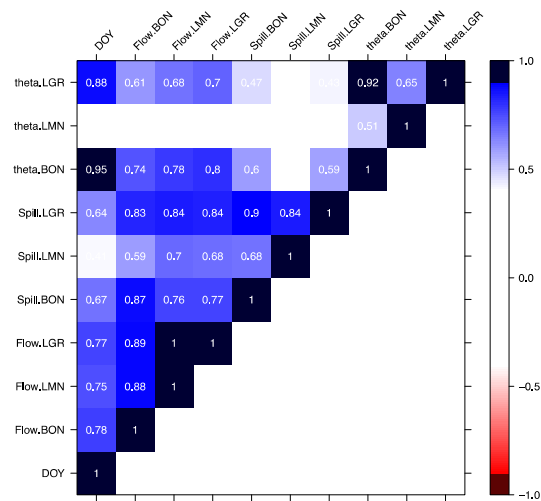
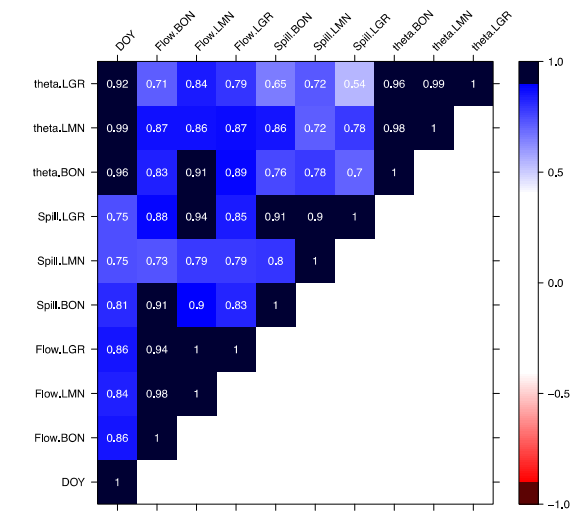


Supplement: Additional Figures

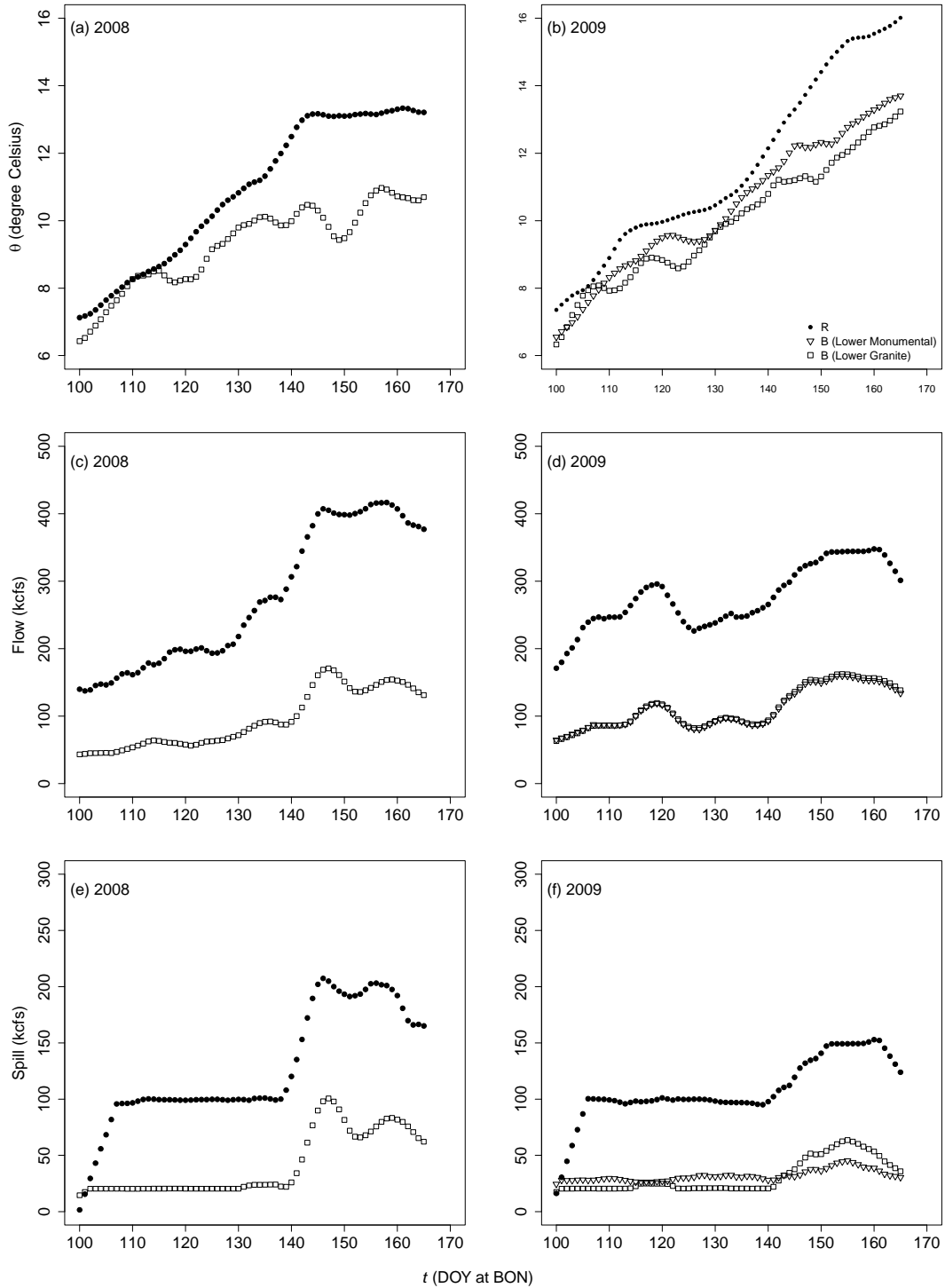
(a)



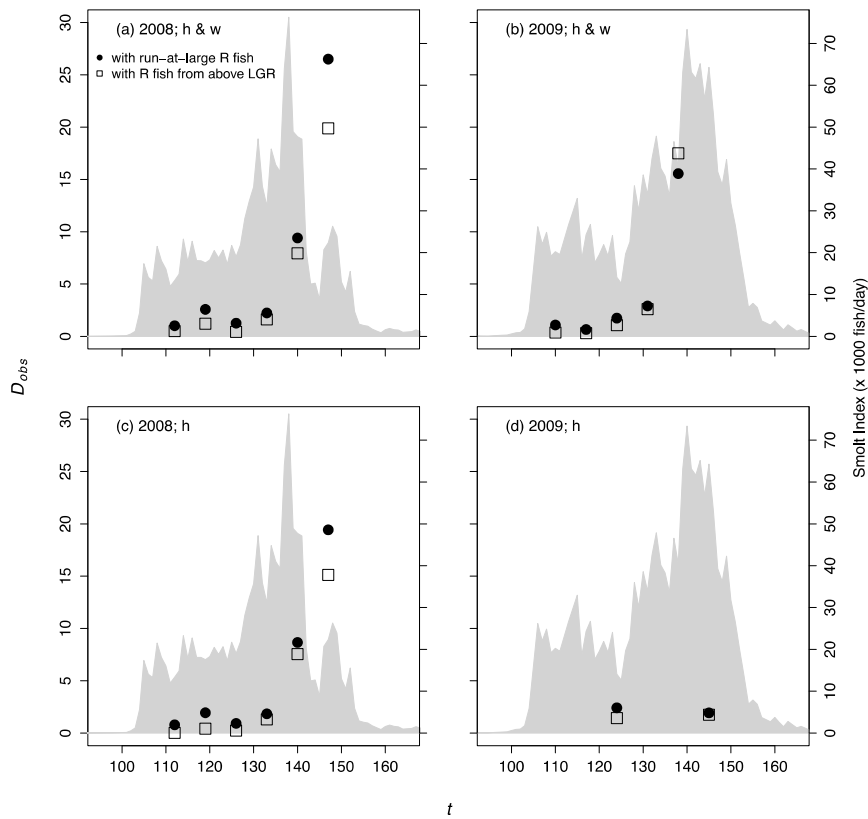
(b)



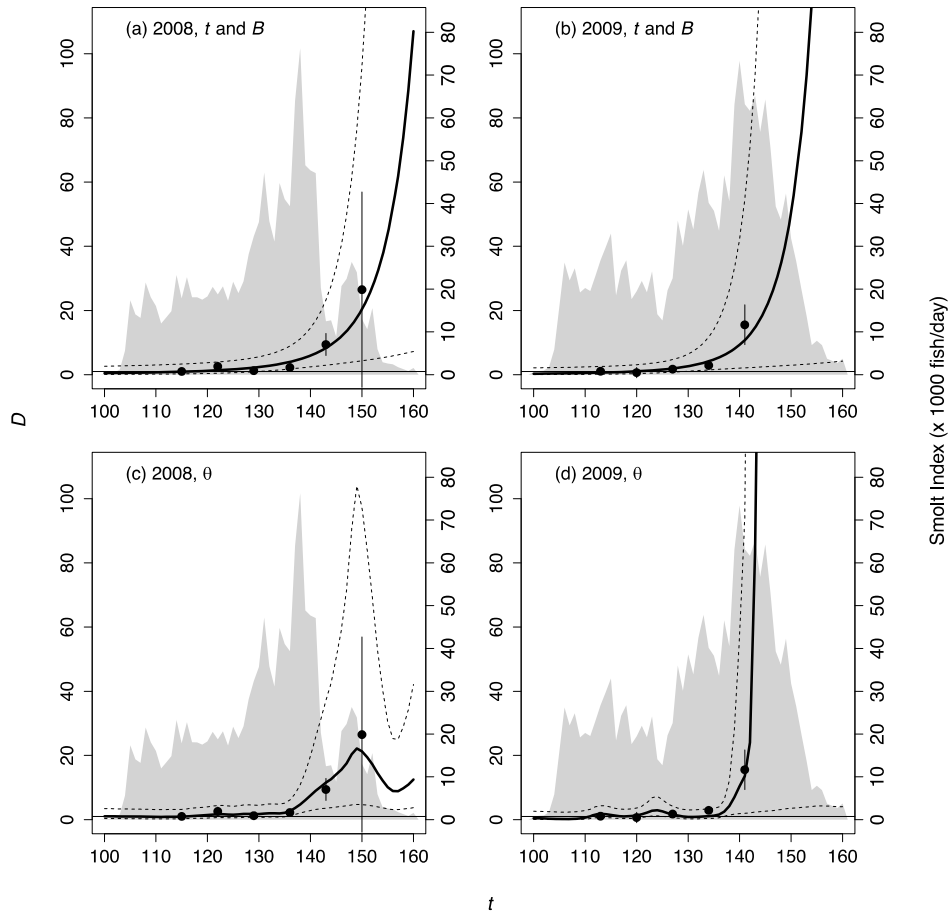
Supplemental Figure S.1. Correlation coefficients between environmental covariates that were examined for their effects on freshwater survival of Chinook Salmon: (a) daily observations and (b) 7-d averaged observations of temperature (θ), flow, and spill at Lower Granite Dam (LGR), Lower Monumental Dam (LMN), and Bonneville Dam (BON) on a given day of the year (DOY).



Supplemental Figure S.2. Weekly average water temperature (θ), flow, and spill at sampling sites (i.e., Lower Granite Dam or Lower Monumental Dam for barged [B] Chinook Salmon; Bonneville Dam [BON] for run-of-the-river [R] fish) presented relative to migration timing (t ; day of the year [DOY] of fish passage at Bonneville Dam).



Supplemental Figure S.3. Weekly observed marine survival differential (D_{obs}) for PIT-tagged Chinook Salmon in relation to migration timing (t ; day of the year [DOY] of fish passage at Bonneville Dam [BON]) in 2008 and 2009 for **(a)**, **(b)** hatchery (h) and wild (w) rearing types and **(c)**, **(d)** the hatchery rearing type only. Correlation coefficients between black shaded circles and open squares were (a) 0.9977, (b) 0.9996, (c) 0.9958, and (d) n/a. Thus, run-of-the-river (R) fish in the run-at-large (i.e., those originating anywhere above BON) and R fish that originated upstream of Lower Granite Dam (LGR) exhibited similar seasonal patterns of D_{obs} . Correlation coefficients between both rearing types and the hatchery rearing type were 0.9955 for run-at-large fish (a and c, black circles) and 0.9935 for above-LGR fish (a and c, open squares). Thus, seasonal patterns of D_{obs} were similar whether hatchery and wild rearing types or only hatchery rearing type fish were examined. Shading represents the smolt index data (accessed from www.cbr.washington.edu/dart/; data courtesy of the Fish Passage Center).



Supplemental Figure S.4. Marine survival differential (D) for Chinook Salmon as observed from PIT tag data (D_{obs} ; black circles \pm 95% confidence interval [CI]) and as predicted (D_{pred} ; solid line \pm 95% CI [dashed lines]) from log-linear regression, $\log_e(D_{pred}) = g + h[(1/m_{pred,B}) - (1/m_{pred,R})]$, where g and h are constant over the migration season (B = barged fish; R = run-of-the-river fish), and the freshwater survival index (m_{pred}) is predicted from (a), (b) migration timing (t ; day of the year [DOY] of fish passage at Bonneville Dam) and the barge index (B) or (c), (d) the river temperature exposure index (θ ; Table 6) during out-migration years 2008 and 2009. Gray shading represents the smolt run based on smolt index data (accessed from www.cbr.washington.edu/dart/; data courtesy of the Fish Passage Center). The horizontal line represents $D = 1$. This figure presents the same data as Figure 6 except that the y-axis scale extends to 100 rather than 10.