Long term ocean survival trends of Chinook salmon released at Little Port Walter Marine Station in Southeast Alaska

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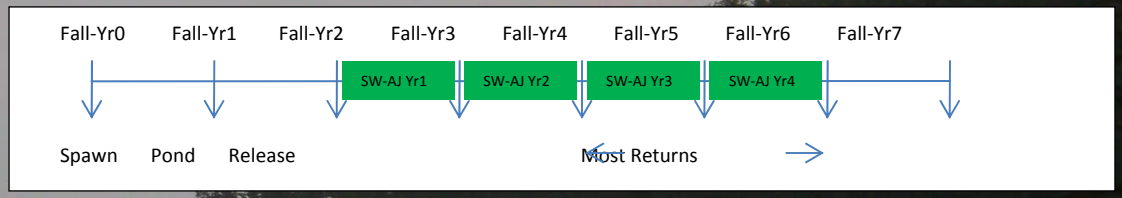
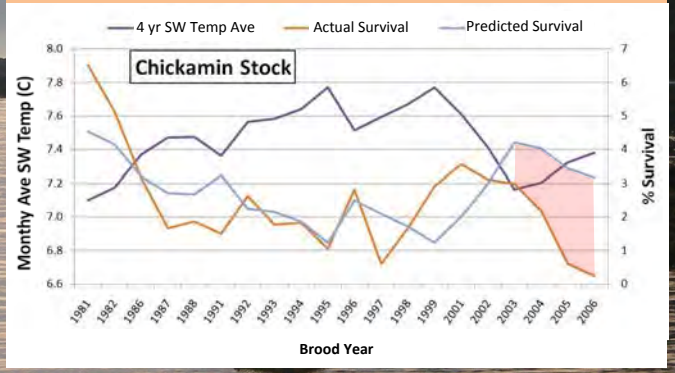
Chinook salmon have been cultured at the National Marine Fisheries Service's Little Port Walter (LPW) Marine Station since 1976 when broodstock from Southeast Alaska's Chickamin and Unuk Rivers were collected and spawned. This 35- year hatchery data series represents one of the most complete sources of Alaska stock- specific information regarding the release, survival, and capture of Chinook salmon, a species with declining abundance in Alaska in recent years.

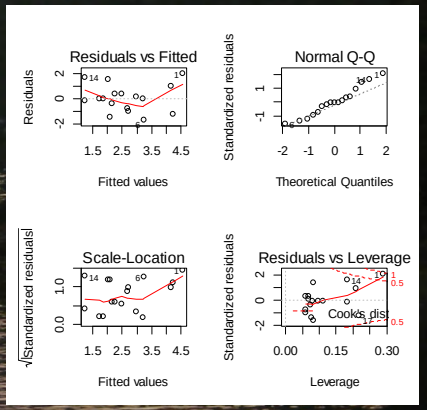
Ocean survival trends of hatchery- derived Chinook salmon were correlated with fresh and saltwater temperature data. Based on data using the 1981 - 2005 brood stocks, saltwater temperature at Little Port Walter was negatively correlated with overall ocean survival, although the model became weaker when including brood years after 2003 (model shown is based on the 1981-2003 brood years), suggesting other variables may have contributed to weak returns in recent years.



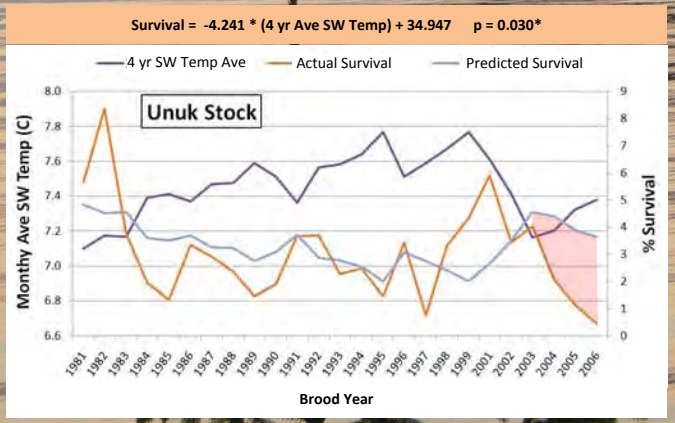
Stock	Brood Years	SW Years	F-statistic p-value	Mult R2	AICc
Chickamin	1981-2003	2-6	0.003	0.451	58.047
Chickamin	1981-2004	2-6	0.007	0.371	62.394
Chickamin	1981-2005	2-6	0.043	0.208	75.181
Unuk	1981-2003	2-6	0.030	0.215	87.959
Unuk	1981-2004	2-6	0.060	0.159	92.604
Unuk	1981-2005	2-6	0.135	0.095	103.542

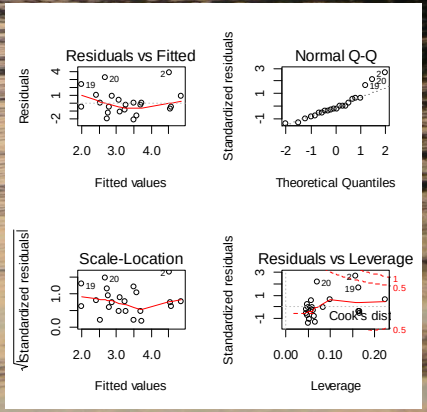
Survival = -4.930 * (4 yr Ave SW Temp) + 39.535 p= 0.003**





Survival = -4.241 * (4 yr Ave SW Temp) + 34.947 p = 0.030*





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