**Energy dynamics and growth of juvenile Chinook salmon (*Onchorynchus tshawytscha*) reveal the importance of piscivory during early marine residence**

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Climate change impacts on living marine resources have been documented across many terrestrial and marine habitats and frequently involve changes in the timing of important life events, such as reproduction or migration, which may influence predator-prey interactions. In this study, we used the Wisconsin bioenergetics model to explore potential climate effects, such as variation in temperature and the availability of an important prey item, Northern Anchovy (*Engraulis mordax*), on growth of juvenile Chinook salmon (*Onchorynchus tshawytscha*). We validated the bioenergetics model under laboratory conditions by comparing observed and predicted food consumption during the first few months of ocean growth. We then used the model to estimate consumption based on measurements of growth, prey availability, prey quality, and temperature collected from the field. Despite being oceanographically similar during the two years of our study, availability of northern anchovy varied between years, resulting in estimated consumption rates that differed by up to 50%. Highest consumption and growth rates occurred in fall when anchovy were available. Because anchovy are an energetically rich prey item for juvenile salmon, long-term changes in the timing of anchovy spawning could have large consequences on early marine growth and survival of this commercially important species.