



# The Southeast Alaska Coastal Monitoring (SECM) Project: Milestones from Research at Sea Over the Past 15 Years

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Researchers from the Auke Bay Laboratories of the Alaska Fisheries Science Center have conducted the Southeast Alaska Coastal Monitoring (SECM) project in the vicinity of Icy Strait, a principal migration corridor for salmon in Southeast Alaska (SEAK), since 1997. The SECM project helps to integrate basin-scale climate observations, regional oceanographic monitoring, and fisheries research to provide a sound scientific basis for understanding marine ecosystems. This effort also supports Ecosystem-Based Management by providing data to resource managers. This poster highlights some significant milestones from SECM research on biological interactions of salmon, ecologically-associated species, and biophysical oceanography in order to better understand climate effects and mechanisms influencing regional salmon productivity.

[http://www.afsc.noaa.gov/ABL/MSI/msi\\_sec.htm](http://www.afsc.noaa.gov/ABL/MSI/msi_sec.htm)  
**SECM milestones:**



Salmon predators

★ **Essential Fish Habitat:** Described habitat utilization patterns of seaward migrating juvenile salmon; documented earliest known occurrence of Columbia River stream-type juvenile Chinook salmon off SEAK

★ **Regional Stakeholders:** Developed professional relationships and web sites to share published materials and datasets with regional resource stakeholders, managers, and researchers



Zooplankton



Oceanography

★ **Publications:** Produced over 50 publications, reports, and MSc/PhD theses to advance our scientific understanding of salmon ecology in the vicinity of the Gulf of Alaska ecosystem

★ **Annual Reports:** Produced annual research reports to the North Pacific Anadromous Fish Commission describing stock-specific migration, distribution, and growth of juvenile salmon



Lab processing

★ **Hatchery-Wild Interactions:** Estimated zooplankton consumption rates of hatchery and wild juvenile chum salmon using bioenergetics models; examined carrying capacity and trophic interactions in Icy Strait

★ **Ecosystem Study:** Compared epipelagic fish assemblages across marine ecosystems from the Alaska Coastal Current to the California Current; contributed to NOAA's Ecosystem Considerations Report on interannual zooplankton trends and pink salmon forecasts



Zooplankton sampling

★ **Predation Events:** Characterized predation on juvenile salmon by key piscivores and estimated predation impact of an abundant episodic predator on adult salmon harvests

★ **Process Studies:** Conducted laboratory and at-sea studies to address specific research questions, such as predation, starvation, and feeding rhythms



Juvenile salmon

★ **Salmon Forecasts:** Shared SECM juvenile pink salmon data with the Alaska Department of Fish & Game and presented SECM pre-season adult pink salmon harvest forecasts to resource stakeholders

★ **Academic Partnerships:** Offered at-sea experiences for students, including those working on MSc and PhD projects, and co-authored university publications



Salmon forecasting

★ **Technical Collaborations:** Hands-on training in sampling methodology and trawl gear operation with foreign, federal, and state researchers

★ **Climate Change:** Identified seasonal and interannual anomalies in temperature and zooplankton trends over a 15-yr time series



Fish assemblages



John N. Cobb 97-08



Salmon diet



Surface trawling



Chlorophyll & nutrients



Salmon interactions



Diel sampling



Students at sea