

## THE BLIND EATING THE BLIND: ECOLOGY OF KNIK ARM, ALASKA

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Knik Arm, Alaska, is a shallow glacial estuary with extreme physical habitats characterized by large tidal ranges, strong currents, massive inputs of glacial and coastal sediment, extreme turbidity, and severe seasonal ice scour. Despite these conditions, beach seining during spring 1983 demonstrated a surprising level of biological activity. Eighteen species of fish were captured and all had been feeding. The present work was initiated to expand understanding of the broader temporal fish and invertebrate use of nearshore areas in the Arm and the potential contributions of fish populations to the food web supporting Cook Inlet beluga whales. We conducted beach seining at 6 to 10 sites from July through freeze-up in November, 2004 and again from breakup through September 2005. High abundances of invertebrates, especially gammarid amphipods and crangonid and mysid shrimp were found throughout the area. The data present a remarkable picture of prolonged use of the Arm for rearing and growth by juvenile sockeye, coho, and Chinook salmon as well as several typically more northern species such as Bering cisco and saffron cod. Offshore tow net sampling found a similar biota with several invertebrates commonly considered to be benthic or epibenthic found in the surface layer of waters over 30 m deep. Adult salmon, saffron cod and osmerids (longfin smelt and eulachon) are identified as the most probably prey of beluga whales in the Arm at various times of the year. Presence of so much biological activity where turbidities range from 100s to 1,000s of NTU raises questions regarding how fish feed and migrate with few, if any, visual cues.