



Advisory Announcement

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2027 NOAA FISHERIES–ALASKA DEPARTMENT OF FISH AND GAME SOUTHEAST ALASKA PINK SALMON HARVEST FORECAST

The 2027 Southeast Alaska pink salmon harvest is expected to be *excellent*, with a harvest forecast of 67 million fish. Juvenile pink salmon abundance measured in northern inside waters during summer 2026 was well above average, which suggests a large number of adults will be returning in 2027. Although salmon runs can vary due to changing ocean conditions, this forecast reflects the best available information from long-term National Oceanic and Atmospheric Administration (NOAA) Alaska Fisheries Science Center, Auke Bay Laboratories and Alaska Department of Fish and Game (ADF&G) monitoring programs. The commercial purse seine fishery will be managed inseason based on aerial surveys and fishery performance indicators.

Forecast Methods

NOAA initiated the Southeast Alaska Coastal Monitoring (SECM) project in 1997 to better understand the effects of climate and nearshore ocean conditions on year-class strength of salmon and other ecologically related species (Orsi et al. 2000). Since 2018, the SECM project has been conducted cooperatively by NOAA and ADF&G using the ADF&G research vessel (R/V) *Medeia*, and the two agencies have combined efforts to produce a joint pink salmon harvest forecast using SECM data (Piston et al. 2019). The partnership between agencies facilitates the SECM survey and provides a wide variety of valuable information on the marine environment and juvenile salmon in northern Southeast Alaska (SEAK).

The 2027 SEAK pink salmon harvest forecast (Figures 1 and 2) is primarily based on juvenile pink salmon abundance indices collected by the SECM project in northern SEAK inside waters (Piston et al. 2026). These data were obtained from annual systematic surface trawl surveys conducted in June and July in upper Chatham and Icy Straits. Survey catches of juvenile pink salmon have been shown to be highly correlated with the harvest of adult pink salmon in the following year (Wertheimer et al. 2011). The juvenile abundance index is the higher of the June and July mean vessel-calibrated catch per unit effort (CPUE), with each monthly mean calculated from two standardized surface trawls at each of eight fixed sampling stations. The 2026 juvenile pink salmon abundance index of 3.51 is the highest for the time period the R/V *Medeia* has conducted the survey (2018–2025; mean 1.37; range 0.87–2.15) and is above the mean for even-year juvenile CPUE indices (1997–2024; mean 3.08; range 1.17–5.62).

The 2027 pink salmon forecast uses a method initially described by Wertheimer et al. (2006) and then later adapted by Orsi et al. (2016), Murphy et al. (2019), and Miller et al. (2022) and assumes a log-normal error structure and is based on multiple regression. The forecast models investigated included unadjusted or vessel-adjusted juvenile pink salmon CPUE; temperature data from SECM or satellite sea surface temperature data (Haung et al. 2017); a vessel factor; and an odd and even year factor. A total of 54 models were evaluated based on the one-step ahead mean absolute percent error for the last five years, while Akaike Information Criterion corrected for small sample sizes values were calculated to examine over-parameterization, and adjusted R-squared values, significant terms, and overall p-values of the models were used to determine model fit.

The recommended model included the vessel-adjusted juvenile pink salmon CPUE, an odd and even year factor, and the mean satellite sea surface temperature data from northern SEAK from April, May, and June. **Based on this model, the 2027 forecast point estimate of 67 million fish (80% prediction interval = 42 to 98 million) falls well into the excellent pink salmon harvest category.** The categorical ranges of pink salmon harvest in SEAK were formulated from the 20th, 40th, 60th, and 80th percentiles of historical harvest over the 66-year period 1960–2025:

Category	Range (millions)	Percentile
<i>Poor</i>	Less than 11	Less than 20 th
<i>Weak</i>	≥11 to 19	≥20 th to 40 th
<i>Average</i>	≥19 to 32	≥40 th to 60 th
<i>Strong</i>	≥32 to 48	≥60 th to 80 th
<i>Excellent</i>	Greater than or equal to 48	Greater than or equal to 80 th

Forecast Discussion

The 2027 harvest forecast of 67 million pink salmon would be the largest harvest since 2013 (94.7 million) and would be the 4th highest harvest on record. This forecast reflects a 2026 juvenile pink salmon abundance index value (3.51) that was the largest since 2016 (8th highest of 30 years), and cool spring and early summer temperatures. Pink salmon harvests associated with juvenile indices above 3.00 have ranged from 35 to 95 million fish (mean = 59 million fish).

We continue to evaluate different treatments in our forecast model. Since 2004, 12 unique models have been used to produce the 24 harvest forecasts with changes occurring as additional information becomes available, and in response to poor predictive performance. For the 2027 harvest forecast, we again implemented an odd and even year factor to help address concerns that arose from underforecasting the 2021 and 2023 odd-year harvests. The extensive time series of SECM data extending from 1997 to present is now large enough to examine odd and even years separately which may better represent the segregated brood lines (odd- and even-year) of pink salmon. In addition, due to concerns that slower trawl speed on the R/V *Medeia* was responsible for underforecasting the last two big, odd year harvests, we modified the trawl doors for the 2026 survey by increasing the trawl door weight. The additional weight allowed us to gain approximately 0.5 knots of speed while trawling and likely increased catches in 2026, although it is worth noting that average trawl speed was still below that of the R/V *Northwest Explorer* (conducted survey 2010–2017). Until we use the modified trawl doors for several years, we have no way to account for the potential change in catch rates, though we are still trawling within the speed range of other vessels that have been used on the survey and the wide prediction intervals of the forecast should capture the additional uncertainty this creates in the forecast. The fact that the survey caught above average numbers of pink salmon in nearly every trawl across a wide geographic range gives us confidence that pink salmon abundance is very high and the 2027 run will be in the excellent category.

While uncertainties are inherent in salmon forecasts, the NOAA/ADF&G joint pink salmon harvest forecast has maintained a strong track record (Figure 2), despite the unique challenges associated with pink salmon forecasting (Haeseker et al. 2005). As always, for the 2027 season, the department will manage the commercial purse seine fisheries inseason with aerial escapement surveys and fishery performance indicators.

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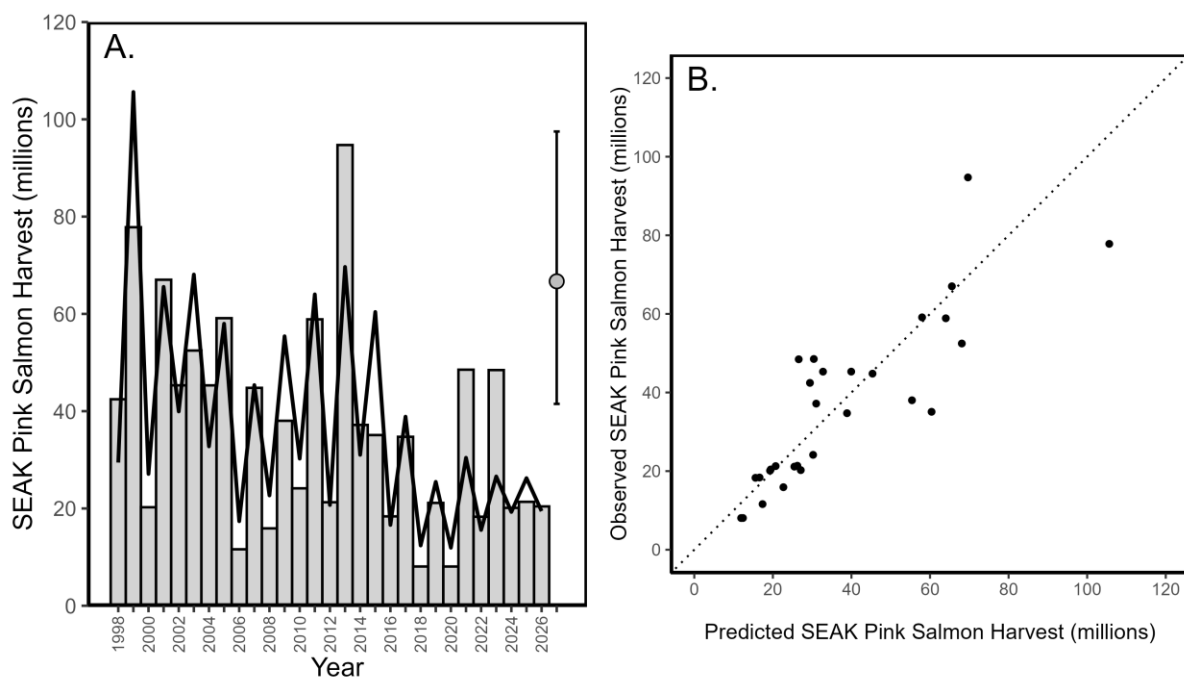


Figure 1. Forecast model fit (hindcasts) to the total Southeast Alaska (SEAK) pink salmon harvest, 1998–2026, and the recommended 2027 forecast model. The recommended model is based on the vessel-adjusted juvenile pink salmon CPUE, an odd and even year factor, and the mean satellite sea surface temperature readings from northern SEAK from April, May, and June. In panel A, the 2027 forecast is shown as a gray circle with the 80% prediction interval as a black vertical line. The observed SEAK pink salmon harvest (in millions) is represented by the gray bars, and the model fit is shown by the black line. In panel B, the dotted line is a one-to-one line; circles above the line are years the model produced a point estimate lower than the actual harvest (i.e., underforecasted) and circles below the line are years the model produced a point estimate higher than the actual harvest (i.e., overforecasted).

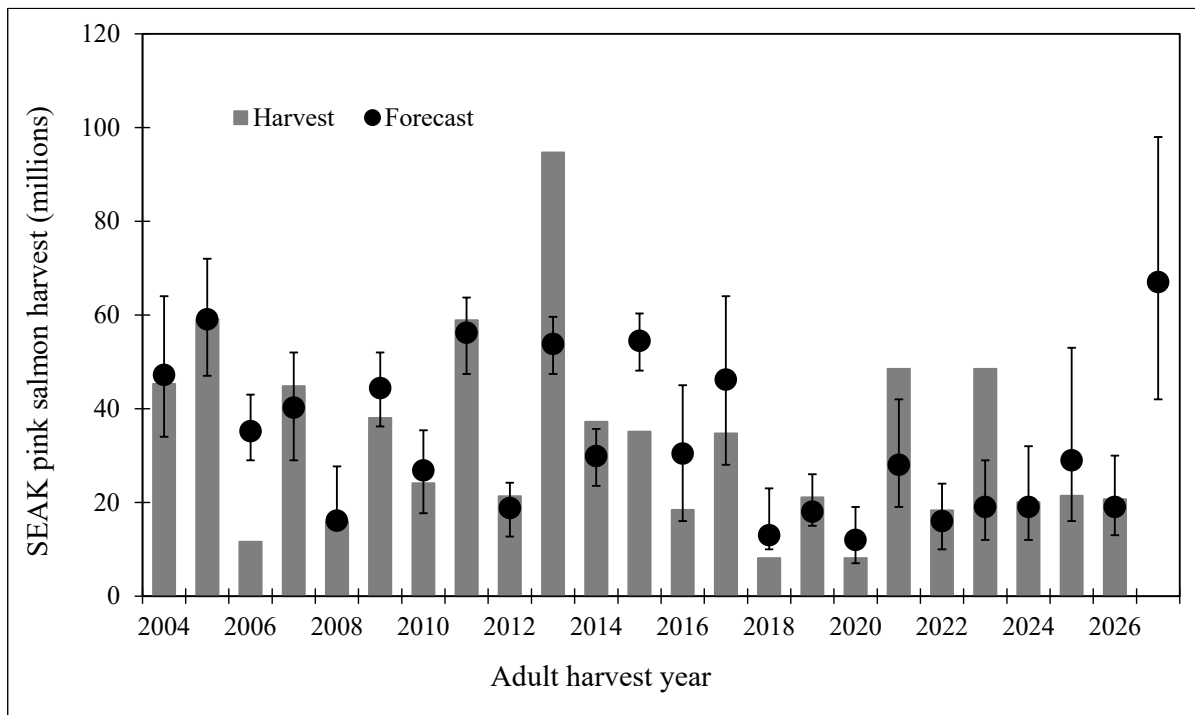


Figure 2. Preseason forecasts (2004–2027) compared to the annual SEAK pink salmon harvest (2004–2026; gray bars). The error bars represent either 80% confidence or prediction intervals of the forecasts, depending on the modeling method used.

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