






# Kenai Watershed Scenario Narratives

Table 1. Cross-comparison of scenario elements, as compared to conditions today.

<b>Scenario</b>	<b>Climate Change</b> (i.e. stream temps)	<b>Ocean Conditions</b> (i.e. water temps)	<b>Economic Development</b>	<b>Sport Fishing</b>	<b>Commercial Fishing</b>	<b>Personal Use Fishing</b>
<b>Retirement Paradise</b> 	Moderate increases in stream temp	No change	Increase in retirement housing and infrastructure	Significant increase	Decrease	Decrease
<b>Industrial Boom</b> 	Large increase in stream temperature, less water available	No change	Increase in industrial development	Significant decrease	Significant decrease, only smaller operations	No change
<b>Fishing Capital</b> 	No change	No change	Increase in residential housing	Significant increase	Increase	Up a little, leveled off
<b>No More Sockeye</b> 	No change	Colder ocean temps, less productive fishery	Increase in industrial development	Significant increase, new species focus	Significant decrease, only smaller operations	Shut down
<b>Back to Basics</b> 	Significant increase	More variable, hard to predict	No change	Maintain high level	Mostly shut down	Significant increase

# Retirement Paradise

Poor fresh and salt water conditions have led to a decreasing fishery resource, while a retirement boom has increased the sport fishing demand. Since the average air temperature has increased over 3° F since 2010, many streams are now too warm for salmon rearing. Decreased salmon abundance led to the implementation of a lottery-based permit system in 2035.

Additionally, while the warm phase of the North Pacific Oscillation (NPO) is still intact, ocean acidification has decreased food availability for returning salmon, leading to average runs of 2 million sockeye. In response to low oil and gas development and a decreasing fishery, a new economy began to emerge in 2020

that caters to retirees. Health care is the dominant economic engine, but sport fishing is a close second given the new retirement “cabins” dotted along the Kenai River and remaining productive tributaries. The only river without continuous development along the lower reaches is the Russian River, which was protected in 2025 after closure of fishing on many low-gradient rivers. Participation in the personal use fishery, though still important for some people in Anchorage and the MatSu, has been limited since early 2040, after peaking in 2022. Limited entry to the personal use fishery occurred the same year sport fishing moved to a lottery permit system. Commercial fishing is not as prevalent as it once was in the region, given the decline in salmon abundance.



# Industrial Boom

The Kenai Peninsula has largely turned to development to fuel the economy, and fishery participation has significantly decreased. The temperatures for the Kenai watershed has warmed on average 4-5° F over the past 40 years, resulting in a significant decline in salmon populations. Sockeye returns have dropped to an average of 1 million, less than 1/3 of the average run in 2015. Commercial fishing and processing is mostly geared to the local population as more than 25,000 people now live in the watershed and there are insufficient fish to supply the global market. Significant economic development in southcentral has followed the opening of the Nikiski Liquid



Natural Gas (LNG) facility in 2020, increasing oil prices leading to additional oil well development in Cook Inlet from 2020-2030, and investment in the Alaska Gas Pipeline project and the southcentral economy is booming. This in turn has created new industry and housing developments, leading to many new road crossings and culverts throughout the watershed. Additionally, tidal energy took off with new national policies to increase renewable energy. 500 Megawatts of tidal energy is now harvested in the upper Cool Inlet near the Kenai River. Tourism has reduced significantly as the Kenai River no longer has many of the wilderness characteristics that once attracted fishermen from around the world. The only sport fishing that occurs in the Kenai watershed now is from residents who live along the river, and is primarily focused on non-salmon species, as severe limits have been put on salmon harvest in freshwater systems.

# Fishing Capital

The Kenai watershed, like most of southcentral Alaska, has largely escaped many of the environmental impacts once thought as almost inevitable and become a premier destination for both fishing and living.

Temperatures have only increased 1° F since 2015, and as such most rivers with intact riparian habitat have been able to maintain their natural salmon stocks. Fueled by only moderate environmental changes, southcentral Alaska has become a climate refuge for many former residents of the lower 48. Population in Anchorage is now over half a million, which has put pressure on the Kenai watershed to provide bedroom communities.

To facilitate better connectivity with Anchorage, a ferry system

was finished in 2035 with a stop at Point Possession. As a result, growth in Point Possession exploded from a population of 3, to over 30,000 people. Thanks to fill-in development along the spur road, the Kenai watershed now has 30,000 residents, nearly double what we had in 2015.

All this growth started after a couple of extreme winters in the lower 48, coupled with really mild winters in Alaska. Real estate developers took the opportunity to begin marketing fishing cabins to those looking to escape the unpredictable weather of the contiguous U.S. and live a fishing and recreation-based lifestyle. Now the Kenai watershed is seen as the fishing capital of the U.S., with nearly everyone being involved with the sport fishing and tourism industry. While the increase in local population increased the participation in the personal use fishery initially, it has now leveled off, as managers try and find the balance between the sport fishing interests and the personal use fishery. Commercial fishing has continued to thrive, fueling even more tension between the different fishing industries.



# No More Sockeye

All things must pass, and in 2023 ocean conditions changed in the Gulf of Alaska, which significantly reduced food availability for salmon. Sockeye returns now average less than 700,000. Salmon population levels have also dropped due to warming of many rearing habitats, resulting in restrictions and making most rivers off-limits to fishing.

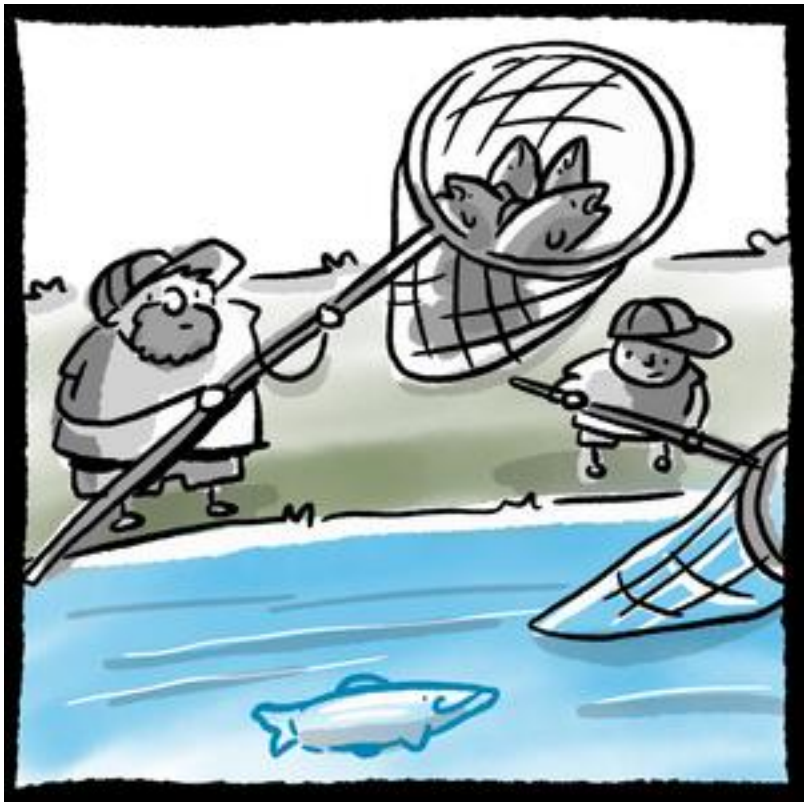
Commercial operations significantly dropped off by 2025 and only the smaller operations exist now to provide fish for local residents. Sport fishing has continued, but with fewer rivers supporting salmon, a limited-entry permit system has been in place to regulate guided fishing since 2030. This has shifted the focus of most sport fishing to other species,

including northern pike. The personal use fishery was shut down in 2025, coinciding with the significant reduction in commercial fishing. The culture in the Kenai watershed has now shifted and people no longer talk about salmon. The Nikiski LNG plant is operational, but it required the state to subsidize gas infrastructure in 2035, following the long statewide recession that began in 2015. Construction of the plant yielded a temporary boost in employment, but that was not sustained beyond 2040. Population of the watershed is now 21,600, largely due to the secondary economic activity generated by the Nikiski LNG plant.



# Back to Basics

Significant changes have occurred in the Kenai watershed that have led to decreased salmon abundance. There are no wetlands in the lowlands of the Kenai River, no longer do Chinook and Coho spawn in low-gradient rivers, and no longer do people fly from around the world to fish for salmon in the Kenai River. Wildfire has dramatically changed the mixed forests that once dominated the landscape and grasslands are beginning to emerge in the lowlands. Variable ocean conditions have made it unrealistic for commercial operations to continue to meet the bottom line, so escapement goals are largely managed using openings and limits in the personal use fishery. Although the population of the Kenai watershed has leveled off for the past 35 years,



residents here and in the Anchorage/MatSu are more efficient at catching fish. This is partially due to the proportional increase in Alaska Natives now living in the watershed as a result of surrounding village outmigration and their need to have food security. Tourism is not as big of a driver in the local economy as it once was, but sport fishing is still a big part of the culture for both local and regional residents. In an effort to keep salmon as part of the Kenai watershed culture, the Cook Inlet Aquaculture Association doubled hatchery production in 2035, providing most of the catchable salmon in the watershed.