

Marine heatwaves to blame for chum crash?

PACIFIC FISHING

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Year in review



- Alaska landslide tragedy
- Hard up halibut commission

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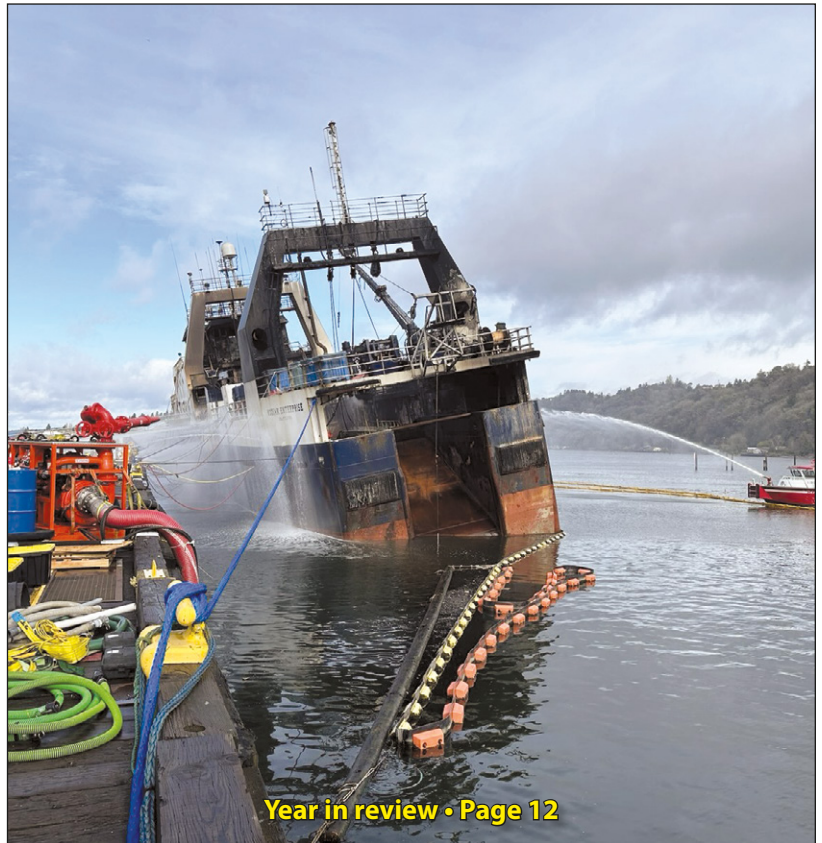
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ON THE COVER: Gillnetters pulled for the season at Kenai, Alaska, 2009. Wesley Loy photo

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Winter troll season set: The Southeast Alaska winter troll fishery will open Oct. 11 with a limit of 45,000 hatchery-produced, non-Alaska Chinook salmon. – *adfg.alaska.gov*

Alaska crab outlook: The Bristol Bay red king crab fishery could return after two years on ice. – *kucb.org*

Mixed bag for Alaska crab quotas: The Bristol Bay red king crab fishery will reopen after a two-year hiatus, while the Bering Sea snow crab fishery will remain closed due to weak stocks. – *deckboss.blogspot.com*

B.C. fish farm debate: The aquaculture industry is urging a "balanced" approach. – *biv.com*

Addressing Alaska chum bycatch: The North Pacific Fishery Management Council says it's evaluating management actions to minimize catches of Western Alaska-origin chum salmon in the Bering Sea pollock fishery. – *npfmc.org*

Pacific Seafood lawsuit: The industry giant is suing the Port of Peninsula on Washington's Willapa Bay. – *chinookobserver.com*

California salmon rescue: State and federal biologists are pursuing urgent measures to save Central Valley spring-run Chinook salmon after returns this year "fell sharply toward extinction." – *content.govdelivery.com*

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A salmon revolution: Land-based aquaculture is still coming into its own, but it stands to upend an industry plagued by environmental concerns. – *nytimes.com*

AFN subsistence resolution: The Alaska Federation of Natives wants Congress to permanently protect the right of Alaska Native people to engage in subsistence fishing in Alaska's navigable waters. – *adn.com*

Cook Inlet salmon management takeover: NOAA Fisheries is seeking public comment on implementing federal management of salmon fishing in the Cook Inlet EEZ. – *fisheries.noaa.gov*

Alaska's snow crab situation: Billions of crab went missing. Scientists now know what happened to them. – *cnn.com*

Channel 16 and you: Here's a musical reminder from the U.S. Coast Guard. – *facebook.com*

West Coast disaster relief: Struggling Chinook salmon fishermen are in line for federal help, but it may be too late. – *opb.org*

A chance to hear from Trident and OBI: Key processor representatives will present a seafood market update at a free United Fishermen of Alaska webinar set for Thursday. – *ufafish.org*

'Extraordinary market challenges': The Alaska Seafood Marketing Institute board of directors outlines its actions in the midst of a crisis. – *alaskaseafood.org*

Alaska whale rescue: A severely entangled humpback reported near Gustavus is freed. – *fisheries.noaa.gov*

California crab delay: Again this year, state officials are delaying the commercial Dungeness season to decrease chances of migrating whales getting entangled in fishing gear. – *mercurynews.com*

Upper Cook Inlet salmon results: The closure of the eastside setnet fishery drags down the season. – *adfg.alaska.gov*

Alaska's disappointing salmon season: This year's harvest topped 230 million salmon, far more than last year, but the value took a huge drop due to adverse market conditions. – *adfg.alaska.gov*

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Red herrings won't help us save Chinook salmon

Editor's note: This commentary responds to Andy Wink's commentary in the November issue headlined "In the king salmon debate, we're ignoring the 8,000-pound orca in the room."

While I'm an Alaska whale biologist, I'm as concerned about declining Chinook salmon numbers as I am any marine mammal. Chinook, or king salmon, are essential to a healthy Alaska, for people and wildlife. To protect and recover Chinook salmon, and the entire Alaska marine ecosystem, we must focus on the real root causes of their decline and avoid scientifically groundless distraction and unnecessary division. Blaming killer whale predation is not the answer.

New studies by the Alaska Department of Fish and Game conclude the problem with Alaska's Chinook salmon populations can be linked to their declining survival while in the ocean. A recent opinion by Andy Wink claimed that killer whale predation was likely a driving factor. Blaming predators for declines in prey populations has always been a popular notion in the minds of us humans, and predators can certainly have a serious impact on prey populations in some situations. But is there good evidence killer whales are driving Chinook salmon declines in Alaska? The science doesn't support it.

Wink's opinion threw around a lot of impressive predation numbers. But these numbers appear to come from a 2017 Oregon State University research paper, which assumed high levels of Chinook consumption by killer whales throughout the North Pacific based on early diet studies in the Pacific Northwest. This study is not representative of killer whales in Alaska, nor Russia or Japan. Moreover, recent work by a NOAA Fisheries science team describes a more diverse year-round diet for that Pacific Northwest killer whale population, known as Southern Resident killer whales, even though Chinook salmon remain important in their diet, particularly in the summer.

A long-term diet study of killer whales in the northern Gulf of Alaska by my organization, the North Gulf Oceanic Society, showed that Chinook salmon are dominant in orcas' diet only in a specific location, Resurrection Bay near Seward, and only for a one-month period in the spring around the Aleutian Islands, where fish-eating killer whales are particularly abundant. Our research and that of NOAA Fisheries has found scant evidence of extensive killer whale predation on Alaska Chinook, possibly as low as 25 to 40 percent. In other words, the actual predation by killer whales on Chinook salmon in Alaska is likely far lower than the numbers implied in Wink's opinion.

Wink also highlights the declining size and abundance of

Chinook but does not mention that the size of killer whales is also declining. Research by members of our team has shown that the body size of both Southern and Northern Resident killer whales in Washington and British Columbia, respectively, declined for whales that were maturing during periods of reduced Chinook abundance in the 1990s. This suggests that the whales are responding to the declines in Chinook salmon, rather than driving it.

Absent from Wink's opinion was any mention of the role of competition facing Chinook salmon in the ocean. Recently, a study by scientists at the University of Alaska provided strong evidence that huge hatchery production of pink salmon, which now comprise around 40 percent of the biomass of salmon in the North Pacific, may have unintended consequences for wild salmon, including Chinook salmon. It appears these hatchery pinks directly compete with wild fish and are causing fundamental changes to the North Pacific ecosystem. I was a commercial salmon fisherman for 20 years and directly benefited from the hatchery production in Prince William Sound. However, massive returns of hatchery pink and chum salmon have ecosystem repercussions. The marine ecosystem provides no free lunches.

Climate change isn't helping, either. The 2014-16 marine heatwave in the Gulf of Alaska severely harmed Chinook salmon, and a large collaborative research paper led by NOAA Fisheries researchers reported an associated decrease in the harvest numbers for Chinook salmon, and widespread ecosystem disruption in general. To think that climate change is going to be a boon to fishes in our northern waters is naïve at best. The most recent example is the collapse of the snow crab fishery due to the most recent marine heatwave. This well-documented marine heatwave was the first major climate change-driven assault on the Alaska marine environment. It certainly won't be the last nor the worst.

To protect and recover Chinook salmon, it is important we keep our attention focused on the root causes and work together to address them, rather than blame secondary effects like marine mammal predation. These scientifically unfounded distractions slow salmon recovery and divide our community. They also ignore the many positive benefits marine mammals provide ocean ecosystems, like cycling nutrients and strengthening the marine food web, benefiting all species, including salmon. It's time to bring a clear focus to ecosystem changes and address the main likely drivers of the Chinook salmon's woes in Alaska – hatchery salmon and the changing climate. ↴

Craig Matkin is executive director of the North Gulf Oceanic Society based in Homer. He is a whale biologist with more than 40 years of Alaska experience.

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North Pacific Fishery Management Council is acting to reduce bycatch

Editor's note: This commentary originally was published on Nov. 5 by the Anchorage Daily News.

In a recent opinion piece (tinyurl.com/je6fzj2d), Brooke Woods, Linda Behnken, and Nanci Morris Lyon stated, "Federal fisheries off Alaska are managed via the dictates of the North Pacific Fishery Management Council, which has done little to address the trawl fleet's enormous bycatch of species immeasurably important to Alaskans." Nothing could be further from the truth.

The council adopted hard caps for Chinook salmon in the Bering Sea trawl pollock fisheries that vary depending upon the expected returns to Western Alaska rivers. When expected returns are low, the caps are adjusted downward. Additionally, the fishing industry has stepped forward to implement Chinook salmon avoidance measures that hold each vessel accountable for limiting bycatch to below the caps. In fact, the fleet is well below their caps, recognizing the need to rebuild these stocks.

The NPFMC has also initiated an analysis to establish a cap on chum salmon bycatch in the Bering Sea trawl pollock fisheries. These caps are intended to reduce bycatch of Western Alaska origin chum salmon with options to tie caps to expected abundance levels like is done for Chinook salmon. The council also included mechanisms for the fleet to implement chum salmon avoidance measures with vessel-level accountability to minimize bycatch to the extent practicable. This issue is complicated by the fact that on average 82 percent of the chum bycatch is not Western Alaska chum but primarily Asian and Russian origin chum. This does not preclude action, but it makes the issue more complex.

The NPFMC also adopted regulations to reduce halibut bycatch in Bering Sea non-pollock trawl fisheries. The abundance-based management program sets allowable bycatch limits annually based on halibut abundance and will go into effect in 2024.

The NPFMC is also considering further fishing restrictions in a long-established closure area and a potential new closure area in the Bering Sea to address the recent climate-related declines in crab populations. In the Gulf of Alaska, the NPFMC is evaluating whether further protections are needed for Tanner crab through expansion of existing closure areas or other means. They also support expanded research to better understand and manage the causes of the declines.

In the coming years, the NPFMC is considering looking at gear modifications to reduce bycatch in both bottom and midwater trawls. Research is currently underway to inform such potential actions. The council will also be looking at means to reduce bycatch in other federally managed fisheries such as rockfish in the long-line industry and crab discard in the directed crab fisheries.


In sum, the NPFMC is addressing bycatch of species that are immeasurably important to Alaskans and the nation using a deliberative process required by federal statute. In recent years, the NPFMC has initiated and adopted several actions in response to concerns about bycatch in federal fisheries while also providing for safe and sustainable U.S. fisheries based on the best scientific information available, unlike seafood produced by many other nations. Also, the national standards guidance as currently written has clearly not constrained the council's ability to take meaningful action to minimize bycatch.



Bycatch, the incidental take of nontarget species, is a constant concern in federal fisheries. Chris Miller photo

I support these actions and strongly encourage Alaskans to continue participating in the NPFMC process. Your participation is critical to help identify solutions for addressing bycatch concerns in federal fisheries. ↓

Doug Vincent-Lang is commissioner of the Alaska Department of Fish and Game.



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Halibut commission is in the hole and needs more funding, industry group says

Halibut industry players were fishing in Congress for supplemental funding to help the International Pacific Halibut Commission weather a financial crunch.

On Nov. 14 and 15, representatives from a group known as the Halibut Coalition met with members of Congress to try to secure the funding. That's according to the latest Alaska Charter Association newsletter.

ON THE HORIZON

Pacific Fishing magazine's monthly digest of upcoming management meetings and other notable events.

- **International Pacific Halibut Commission interim meeting, Nov. 30 to Dec. 1, via webcast.** *More information at tinyurl.com/mptawfy9.*
- **North Pacific Fishery Management Council meeting, Dec. 4-12, Anchorage.** *The council is expected to set 2024 quotas for Alaska groundfish including pollock, cod, flatfish, sablefish, and more.*
- **Alaska Young Fishermen's Summit, Dec. 5-7, Anchorage.** *More information at alaskaseagrant.org/events/alaska-young-fishermens-summit.*
- **Alaska Board of Fisheries meeting, Jan. 9-12, Kodiak.** *The board will consider Kodiak finfish proposals.*
- **International Pacific Halibut Commission annual meeting, Jan. 22-26, Anchorage.** *The commission is expected to set 2024 halibut catch limits. More information at tinyurl.com/mpk83c8e.*
- **Alaska Marine Science Symposium, Jan. 29 to Feb. 2, Anchorage.** *More details at alaskamarinescience.org.*
- **North Pacific Fishery Management Council meeting, Feb. 5-12, Seattle.**
- **Pacific Salmon Commission annual meeting, Feb. 12-16, Vancouver, B.C.**
- **Alaska Board of Fisheries meeting, Feb. 23 to March 6, Anchorage.** *The board will consider Upper Cook Inlet finfish proposals.*
- **Wild Seafood Connection, Feb. 29, Bellingham.** *A one-day conference aimed at fishermen interested in direct marketing to restaurants, retailers, brokers, and seafood buyers. More information at wildseafoodconnect.com.*
- **Seafood Expo North America, March 10-12, Boston.** *More information at seafoodexpo.com/north-america.*
- **North Pacific Fishery Management Council meeting, April 1-9, Anchorage.**
- **Lowell Wakefield Fisheries Symposium, April 16-18, Sitka.** *The symposium "will bring fishery researchers and managers together to address political, jurisdictional, and survey management structures for adapting to environmental changes and shifting species distributions." More information at alaskaseagrant.org/events/wakefield-fisheries-symposium-2024.*

The newsletter said the Halibut Coalition contingent had appointments with Alaska's congressional delegation including Sens. Lisa Murkowski and Dan Sullivan and Rep. Mary Peltola, as well as Washington Sens. Patty Murray and Maria Cantwell, Washington Rep. Suzan DelBene, and California Rep. Jared Huffman.

The members of Congress were presented with a letter, signed by representatives of several organizations, requesting additional IPHC funding not only from the United States but Canada.

The IPHC, established by a convention signed in 1923, helps manage the halibut stock in U.S. and Canadian waters. Crucially, it conducts an annual setline survey of Pacific halibut using chartered fishing vessels.

Pacific Fishing obtained a copy of the letter delivered to Congress. It said the annual budget shortfall at the IPHC was an estimated \$2.43 million.

The letter warned that without additional funding to support the survey and other critical data collection, the IPHC likely would "manage conservatively to avoid inadvertent overharvest of the halibut resource. Conservative limits will have negative socioeconomic impacts on directed commercial, charter, recreational, and subsistence fisheries for Pacific halibut and the communities they support in Alaska, Washington, Oregon, and California."

The letter outlined a number of factors behind the deficit. Funding from the United States and Canada hasn't kept pace with inflation, the letter said. Survey costs increased with higher fuel costs, resulting in a shortage of vessels willing to submit bids to undertake the survey. Stock abundance has declined. And the survey reserve fund has been exhausted.

"In June 2023, the IPHC took painful workforce reduction steps to mitigate financial challenges," the letter said.

To date, scientific data collection hasn't been compromised, but without supplemental funds, the survey and directed commercial catch sampling of Pacific halibut "will by necessity be modified," the letter added.

In addition to asking for supplemental U.S. funding, the letter asked the congressional delegations to urge the Biden administration to involve State Department in negotiations "to secure a comparable contribution from Canada."

A who's who of halibut industry players signed the letter, including Bob Alverson, one of three U.S. commissioners on the IPHC and manager of the Seattle-based Fishing Vessel Owners' Association; Linda Behnken, executive director of the Sitka-based Alaska Longline Fishermen's Association; and Brian Ritchie, of the Homer Charter Association.

The letter is posted at tinyurl.com/bdcj3hv2.

Jon Kurland is IPHC chairman and Alaska regional administrator for the National Marine Fisheries Service. He was asked for comment on the letter and the IPHC's apparent financial challenges. Here's his reply:

"I appreciate the efforts of U.S. halibut stakeholders to support funding for the International Pacific Halibut Commission's annual stock assessment survey and related activities. Halibut fishermen and processors recognize that fishery management decisions depend upon the best available scientific information." ↴

– Wesley Loy



Six people were dead or missing in the Wrangell landslide. Alaska Department of Transportation and Public Facilities photo

Monster landslide takes multiple lives at Wrangell, Alaska

A devastating landslide at Wrangell, Alaska, wiped out homes and left several people dead, including a commercial fisherman.

The landslide was reported at 8:51 p.m. Nov. 20 along the Zimovia Highway at Mile 11 south of Wrangell, the Alaska State Troopers said.

Three single-family residences were directly in the path of the monstrous landslide, which careened down from high on a mountainside, bulling across the highway and into Zimovia Strait.

The victims included five members of the Heller family – four of whom were recovered dead with the fifth, a 12-year-old boy, still missing at press time.

The landslide also hit the home of Otto Florschutz and wife Christina Florschutz. She survived, with the body of Otto Florschutz located and recovered 10 days after the slide.

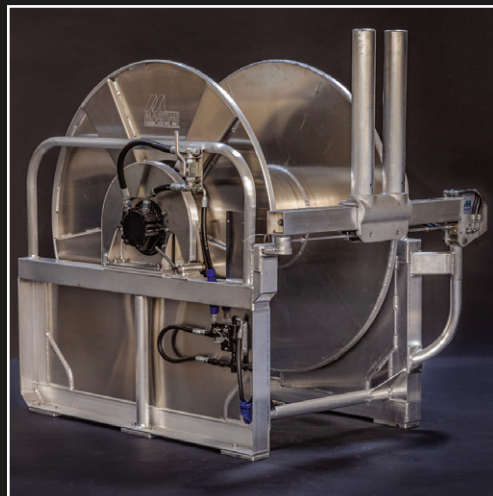
Heavy rains were suspected as a factor in the landslide.

Emergency responders employed planes, helicopters, drones, sonar, and scent detection K-9s in the extensive search for victims.

Otto Florschutz, 65, was a commercial fisherman and had served on Wrangell's Port Commission, according to media reports. He also ran last year in the special election to replace the late Alaska Congressman Don Young. ↓

– Wesley Loy

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Four injured in Coast Guard helicopter crash in Alaska

A U.S. Coast Guard helicopter crashed in Southeast Alaska while on a mission to assist a fishing vessel in distress.

The MH-60 Jayhawk helicopter's four crewmembers were injured, two seriously. All were hoisted aboard a second Coast Guard helicopter and taken initially to Petersburg, then transferred via a C-130 airplane to Seattle for care at Harborview Medical Center.

The helicopter crashed Nov. 13 on Read Island in Farragut Bay, northwest of Petersburg. Coast Guard watchstanders received notification of the crash at 11:05 p.m. from the fishing vessel Lydia Marie, which had called for assistance due to flooding on the boat.

As it turned out, roles were reversed and the guys on the fishing vessel came to the aid of the Coast Guard helicopter crew.

A story on ktoo.org quoted Logan Padgett, captain of the Lydia Marie, a 44-foot wooden troller based in Wrangell.

"Well, it was dark," Padgett said. "So, we were just looking at the helicopter lights, and there wasn't really much to see. But we could hear the rotors one second, and then loud crash the next. Then silence."

"Padgett turned on the Lydia Marie's crab lights," the story said. "He and his younger brother rowed ashore and met one of the helicopter's pilots on the beach, near where the aircraft had come to rest, inverted among some trees. Two members of the helicopter crew were pinned inside, and the brothers tried to keep them comfortable with sleeping bags and ibuprofen. And they used their own radios to help the crew call for help."

Weather on scene at the beginning of the search and rescue mission with the Lydia Marie included wind speeds of 28 to 34 miles



The downed U.S. Coast Guard helicopter on Read Island, Alaska. USCG photo

per hour and seas at 4 to 5 feet, the Coast Guard said. Upon arrival at the scene of the crash, the second Coast Guard helicopter reported wind speeds of 46 miles per hour, visibility at a quarter of a mile, and seas at 1 to 2 feet.

"We have opened an investigation into the cause of this event and will be forthcoming with the results as they become available," Rear Adm. Megan Dean, commander of the Coast Guard's 17th District, said in a Nov. 14 press release.

The Lydia Marie was dewatered and escorted back to Petersburg, where a boarding was conducted with no violations, the Coast Guard said. ↴

– Wesley Loy

Cause of death, injury determined in Alaska killer whale bycatch cases

Editor's note: NOAA Fisheries issued the following on Dec. 1.

NOAA Fisheries has confirmed the causes of death or injury for 11 killer whales caught incidentally in fishing gear and a NOAA research survey in Alaska in 2023.

Nine of these 11 whales were caught by Bering Sea/Aleutian Islands catcher-processor vessels using non-pelagic trawl gear targeting flatfish (e.g., arrowtooth flounder, rex sole). A 10th killer whale was taken by a Bering Sea/Aleutian Islands catcher-processor vessel using pelagic trawl gear to target pollock. The 11th whale was entangled in survey gear during the Alaska Fisheries Science Center's annual longline survey for sablefish and groundfish.

The number of incidental takes is higher than previous years. However, it is still below the annual level that would pose a risk to the long-term health for any of the three killer whale stocks found in the region where the incidental takes occurred.

Incidental catch from gear targeting flatfish: Nine of these 11 whales were caught by Bering Sea/Aleutian Islands catcher-processor vessels using non-pelagic trawl gear targeting flatfish. Based on independent fishery observer reports and photographs, we determined that of these nine:

- Six were killed by fishing gear
- Two were already dead when captured
- One was caught in fishing gear and released alive but was seriously injured.

NOAA Fisheries scientists determined the cause of death for one of the previously dead whales was a strike from an unknown vessel (not the fishing vessel). Scientists were not able to determine the cause of death for the second whale.

However, the body condition indicated that it had been dead for some time before being caught by the fishing vessel. Since it cannot be confirmed that the whale's death was human-caused, it is considered natural mortality.

The six whales killed and one whale seriously injured by gear will be assigned to Alaska Bering Sea/Aleutian Islands flatfish trawl fishery on the Marine Mammal Protection Act List of Fisheries. This is an annually updated list of commercial fisheries classified based on incidental mortality and serious injury of marine mammals.

A 10th killer whale was caught by a Bering Sea/Aleutian Islands catcher-processor vessel using pelagic trawl gear to target pollock. We determined this whale was not killed by fishing gear, but was dead prior to being caught.

The 11th whale was taken during the Alaska Fisheries Science Center's annual longline survey for sablefish and groundfish. The cause of death for this whale was determined to be entanglement in survey gear. This was the first observed killer whale mortality in the 30-year history of this survey.

Incidental takes below allowed level: Observers were able to collect biological samples from eight of the 11 whales and determined that these whales were from the Eastern North Pacific Alaska Resi-

dent killer whale stock. All eight were females.

Scientists were not able to determine the stock for the remaining three whales. There were no tissue samples obtained and either photos were not collected or were not useful for stock identification. Three stocks of killer whales have overlapping geographic ranges in the areas where these interactions occurred: Eastern North Pacific Alaska Resident killer whale stock, Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock, and Eastern North Pacific Offshore stock.

Under the Marine Mammal Protection Act, a Potential Biological Removal estimate determines the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock per year while allowing the stock to reach or maintain its optimum sustainable population. For the Eastern North Pacific Alaska Resident killer whale stock, that number is 19 whales per year. For the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock, it is 5.9 whales per year. For the Eastern North Pacific Offshore stock, it is 2.8 whales per year.

While the number of human-caused mortalities and serious injuries is higher this year, it is still below this annual level.

Next steps: We will undertake further analyses to fully assess the impacts of all human-caused mortalities and serious injuries for these stocks of killer whales in 2023. We do this every year for all marine mammal stocks. Scientists will examine additional data such as Marine Mammal Authorization Program self-reports from fishermen and strandings data.

NOAA Fisheries also anticipates releasing a new technical memo, Killer Whale Entanglements in Alaska: Summary Report 1991-2022, in the coming weeks. It includes comprehensive information about reported killer whale entanglement cases in Alaska over the past three decades.

“Given the high level of incidental catches of killer whales in 2023, we knew it was important to move as quickly as possible to better understand whether these incidental takes pose a conservation concern to any of the potentially affected killer whale stocks,” said Robert Foy, director, Alaska Fisheries Science Center. “As a result, we expedited processing and some procedures to complete genetic analysis as samples were received to provide some preliminary information on stock-specific impacts of these mortalities.”

We will continue to work with the industry and our own survey operations teams to explore ways to reduce killer whale interactions. ↓

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Alaska's enormous salmon harvest ran up against weak markets. Chris Miller photo

A wild 2023

Alaska fisheries hit market headwinds, California's salmon fishery shuts down, a factory trawler burns, and a new 'salmon jet' takes to the skies

Here's our review of the major stories of 2023. Aside from our top story, we offer them in no particular order.



Alaska produced an enormous harvest of more than 230 million salmon. Unfortunately, however, fishermen and processors slammed into adverse market conditions that took the luster off the season.

It was the 10th time Alaska's annual commercial salmon harvest exceeded 200 million fish.

By species, pink salmon tallied more than 152 million fish, with sockeye totaling nearly 52 million.

"International market conditions significantly impacted pricing of salmon statewide, thus value of the harvest," the Alaska Department of Fish and Game reported.

The 2023 ex-vessel value estimate of \$398.6 million was the sixth-lowest since 1975, the department said.

Joe Bundrant, CEO of Seattle-based Trident Seafoods Corp., one of the state's top processors, said dire market conditions were



"I've been in the industry a long time and I've never seen markets like this," said Trident Seafoods CEO Joe Bundrant. Trident photo

A court challenge threatened – but failed – to halt the Southeast Alaska summer Chinook salmon troll fishery. Annina Giezendanner photo

sweeping not only salmon but other seafood market sectors.

"I've been in the industry a long time and I've never seen markets like this," Bundrant said in an Aug. 15 press release. "The rate and pace at which markets are collapsing across our key species is staggering."

In a letter to its fleet dated Aug. 5, Trident reported grim conditions in the salmon markets, including "a sharp decrease in wholesale prices across all species." It said chum markets had collapsed, and that Russia, with a huge pink salmon harvest, had "shown a willingness to offload inventory at very low prices in part to fund the war in Ukraine." Trident added: "We haven't seen a collapse in value like this since the 1990s when pinks went well under 10 cents a pound."

Processors around the state reportedly reduced prices and stopped buying fish early, due to an apparent glutted salmon market.

At Bristol Bay, scene of Alaska's most valuable salmon fishery, gillnetters were angry over the average base ex-vessel price of 52 cents per pound, less than half the \$1.15 processors paid in 2022. Dozens of fishermen formed a protest flotilla in the Naknek River entrance on July 20.

It appeared inventory carryover from last year's record harvest of more than 60 million Bristol Bay sockeye dragged down prices this season.



The Southeast Alaska summer Chinook salmon troll fishery appeared to be in jeopardy of cancellation this year due to a court fight.

But an order from the 9th U.S. Circuit Court of Appeals in San Francisco saved the season, which opened as scheduled on July 1.

The court case isn't over. The Wild Fish Conservancy continues to press its lawsuit arguing the Southeast Alaska troll fishery takes salmon endangered Southern Resident killer whales need for food.

The National Marine Fisheries Ser-

vice, the state of Alaska, and the Alaska Trollers Association are fighting the lawsuit.



California fishermen took a heavy blow with the statewide closure of the commercial ocean salmon fishery for 2024.

The action was necessary "given the low abundance forecasts for both Klamath and Sacramento River fall Chinook," the Pacific Fishery Management Council said in an April 6 announcement.

"The forecasts for Chinook returning to California rivers this year are near record lows," council Chair Marc Gorelnik said. "The poor conditions in the freshwater environment that contributed to these low forecasted returns are unfortunately not something that the council can, or has authority to, control."

Biologists said the Chinook population declined dramatically after years of drought.

California elected officials sought federal disaster relief.



Workers demolish Copco No. 2, the first of four Klamath River dams to be removed. Shane Anderson/Swiftwater Films photo



The Bering Sea snow crab fishery was closed for the second consecutive season. Chris Miller photo

Klamath River dam removal started becoming a reality – a boon for salmon.

By early November, crews were putting the final touches on removal of a dam known as Copco No. 2.

“Copco No. 2 is the first dam to be removed due to its small stature, location, and lack of reservoir,” said Mark Bransom, CEO of the Klamath River Renewal Corp., which is overseeing removal of four Lower Klamath hydroelectric dams.

The remaining three dams – Copco No. 1, Iron Gate, and J.C. Boyle – are slated for removal next year.



Alaska’s crab crisis continued, but with some measure of relief.

After a two-year hiatus, the Bristol Bay red king crab fishery reopened Oct. 15 with a modest quota of 2.15 million pounds. The quota was fully harvested by 31 vessels, the Alaska Department of Fish and Game said.

The Bering Sea snow crab fishery remained closed for a second consecutive season. This year’s bottom trawl survey showed snow crab mature female and commercial-size male abundance was at an all-time low.

The federal government in May announced the allocation of more than \$191 million in disaster relief for the Bristol Bay red king crab and Bering Sea snow crab fisheries.



The long, sad decline of the Togiak herring fishery reached rock bottom when the fishery failed to open for lack of any buyers.

This was once a madhouse fishery with numerous fishing vessels, processors, spotter planes, and plenty of excitement for the chance to net a fast fortune.

Years of waning demand for herring roe in Asia finally dealt a death blow to Togiak this year – this despite the fact that an enormous volume of herring was available for harvest.



The biggest Tanner crab quota in many years was up for grabs at Kodiak beginning Jan. 15, but the fleet stayed in port in an effort

to extract higher prices from processors.

The Kodiak District quota of 5.8 million pounds was more than five times the prior season’s quota. Kodiak hadn’t seen a harvest that large since the nearly 9 million pounds taken in 1986.

The strike lasted until Jan. 28, when crabbers and the four processors agreed to prices.



Alaska’s trawl industry came under continued popular and political pressure due to bycatch of salmon, crab, halibut, and killer whales.

In April, two prominent Alaska tribal organizations – the Association of Village Council Presidents and Tanana Chiefs Conference – went to federal court to challenge the Bering Sea and Aleutian Islands groundfish fisheries. They raised concerns about trawl bycatch of salmon amid ecosystem change.



In the latest effort to deal with protracted legal conflict over Cook Inlet salmon management, the National

Marine Fisheries Service proposed federal management of commercial and recreational salmon fishing in the inlet’s Exclusive Economic Zone.

Previously, salmon management in these federal waters was deferred to the state of Alaska.

Federal management would mean new requirements for commercial drift gillnet vessels fishing in the Cook Inlet EEZ. Vessels would need to obtain a federal permit, maintain a fishing logbook, and have a vessel monitoring system installed.

Processors taking delivery of salmon caught in the EEZ also would need a federal permit.

If approved, the proposed action would be effective for the 2024 salmon season.



Fire swept through the factory trawler Kodiak Enterprise while



Bristol Bay salmon setnetters voted against joining the Bristol Bay Regional Seafood Development Association. BBRSDA photo

the vessel was moored at Tacoma.

Shortly before 4 a.m. on April 8, a fire was reported in the galley, said the National Transportation Safety Board, which was investigating.

The blaze was intense, and firefighters cooled the hull with water. Flames appeared over much of the vessel and devastated the wheelhouse. A large volume of Freon was released. With smoke billowing, a shelter in place order was issued for nearby neighborhoods.

It wasn't until April 14 that responders tweeted "the fire is out on the F/V Kodiak Enterprise." No injuries were reported.

The 262-foot vessel belonged to Trident Seafoods, and primarily fished Bering Sea pollock.



Bristol Bay setnetters voted against joining the Bristol Bay Regional Seafood Development Association.

"Over 30 percent of the setnetters voted, and the vote narrowly failed by a margin of 19 votes," BBRSDA said.

BBRSDA is a state-sanctioned organization working to promote the quality and value of Bristol Bay sockeye. Its membership consists of the drift gillnet fleet, but not



Fire ravaged the Trident Seafoods factory trawler Kodiak Enterprise while moored in Tacoma. USCG Petty Officer Diolanda Caballero photo



Alaska Airlines unveiled its newest "salmon jet." Alaska Airlines photo

the smaller setnet fleet. The Bristol Bay setnet fishery had 958 active fishing permits this year.

The goal of the vote-by-mail election was to unify both fishing sectors under the BBRSDA banner. The question before the setnetters was whether to pay the 1 percent landings tax – which supports the association – to join.



Speculation swirled that Trident Seafoods was planning to build a huge new processing plant at Unalaska to replace its cramped and aging facility at nearby Akutan.

The company confirmed those plans with

an Aug. 15 press release – but also said it would delay breaking ground on the new plant by a year until 2025.

"This decision reflects an unprecedented confluence of high inventory levels, low consumer demand, and aggressive price competition in global markets," the press release said. "These forces have driven prices down rapidly and across species – all while high global inflation and rising interest rates are driving up operating costs."

The Akutan plant processes primarily Bering Sea pollock, as well as cod, crab, and halibut.

A document posted on the city of Unalaska website said the new Unalaska plant would be a \$400 million investment.



Alaska Airlines unveiled its newest "salmon jet." The paint theme for the Boeing 737-800 is Xáat Kwáani – meaning "Salmon People" in the Tlingit language. The designer is an Alaska Native artist, Crystal Kaakeeyáa Rose Demientieff Worl. The aircraft began flying in May. The Salmon People plane updates the previous salmon jet, which was painted as an enormous and realistic-looking Alaska king salmon. ↓

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Jonathan Moore, of Simon Fraser University, studies sockeye salmon in a formerly glaciated river. The location is in the Tulsequah subwatershed within the Taku watershed, British Columbia. Mark Connor photo

Mining industry competes with salmon for rivers created by disappearing glaciers, study finds

A study led by Simon Fraser University researchers finds that mining companies are staking claims on future salmon habitats as glaciers retreat.

In the ice-covered transboundary region shared by northern British Columbia and Alaska, glacier retreat is creating thousands of kilometers of new rivers that salmon are finding.

These emerging rivers represent future habitats for salmon, but mining companies are also looking to these areas for the next gold mine.

A new study, published in *Science*, maps out these emerging land use conflicts and identifies policy blind spots as well as key opportunities for the stewardship of these nascent habitats.

The paper discovered that of the 114 subwatersheds in the



An abandoned mine on the banks of the Tulsequah River. Chris Miller photo

transboundary region with future salmon habitat, 25 had more than 50 percent of future salmon habitat near a mining claim. In addition, more than half of future salmon habitat in Canada has either medium or high mineral potential, an indicator of future potential mining pressure.

The paper was a collaboration among researchers from SFU, Gitanyow First Nation Hereditary Chiefs, the University of Montana Flathead Lake Biological Station, and Taku River Tlingit First Nation.

“Climate change and other human activities are harming salmon populations in much of their range. Yet in some locations of northern B.C. and Alaska, glacier retreat is creating hotspots of opportunity for salmon, but also of mining pressure. This is an emerging environmental issue,” says SFU professor Jonathan Moore, the study’s lead author and head of the Salmon Watersheds Lab.

This study builds on previous work by Moore and Kara Pitman, a research scientist at SFU.

“Previously, we mapped where and when future salmon habitat would be created with glacier retreat. This builds on that work, and is the first time that we have assessed where mining claims or mineral potential overlap with future salmon habitats,” says Pitman.

B.C. mining policy: The Mineral Tenure Act is the B.C. policy that allows mining companies to stake claims on lands with minimal government oversight and without consultation with First

Nations. The B.C. Supreme Court recently ruled that the Mineral Tenure Act violated the duty to consult with First Nations rights-holders, and ordered the province to modernize the act in the next year and a half.

“These changes can’t come soon enough,” says Tara Marsden, with Gitanyow Hereditary Chiefs, a study co-author. “The Mineral Tenure Act not only violates indigenous rights but also undermines stewardship of ecosystems for future generations.”

The paper also illuminates a broad global challenge – as climate change is rapidly transforming the world, environmental policies may struggle to keep pace. For example, risk assessments and habitat protections by current environmental laws generally focus on the current values of ecosystems, but not their future values.

“Climate change is transforming ecosystems around the world,” says Moore. “Even as there is urgent need to take global action on climate change, this paper also reveals the need to look carefully at environmental laws and make sure that they not only protect habitats of today, but also the habitats of tomorrow.”

The region is also at the forefront for indigenous rights and reconciliation. Different First Nations are advancing “indigenous protected areas.”

Marsden notes, “Our policies consider climate change, and our new indigenous protected area is in response to salmon finding new habitats as glaciers retreat.” ↴

– Simon Fraser University



Researchers Jonathan Moore and Mark Connor on the banks of the Tulsequah River, a location of emerging salmon habitat and mining claims. Chris Sergeant photo

New evidence found of marine heatwave impacts on Western Alaska chum salmon

After looking at nearly two decades of survey data, scientists found evidence to suggest that recent marine heatwave events in the Eastern Bering Sea and the Gulf of Alaska may have played a key role in juvenile chum salmon survival. Scientists also suspect this impacted subsequent adult returns to Western Alaska rivers.

In a new study published Nov. 30, Alaska Fisheries Science Center and Alaska Department of Fish and Game scientists found that juvenile (first ocean year) chum salmon were more abundant during the more recent exceptionally warm marine period (2014-19) compared to previous warm (2003-05) and cold (2006-13) periods. However, this increase in juvenile abundance did not lead to an increase in adult returns as expected.

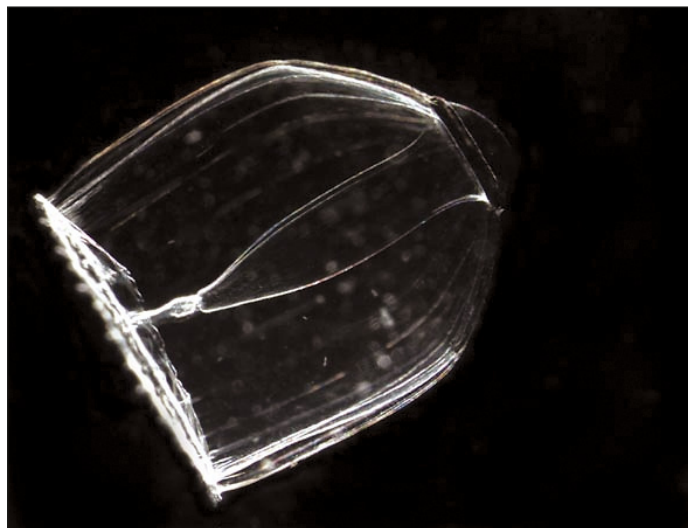
Researchers also observed that during the 2014-19 warm period, juveniles were larger in size but in poorer body condition. These salmon consumed lower quality prey. As a result, they had fewer energy reserves and a lower probability of surviving their first winter. Scientists speculate this may have led to lower adult returns in recent years.

“Our data suggest a shift in how juvenile chum salmon are allocating energy during their first year at sea. This is a critical period for them and our results illustrate how anomalous events in marine ecosystems can impact their survival and future returns,” said Ed Farley, lead author and manager of the NOAA Fisheries Ecosystem Monitoring and Assessment Program.

Changing Arctic conditions: Arctic regions including the Northern Bering, Chukchi, and Beaufort seas have been experiencing accelerated warming and extremes in seasonal sea ice extent. In the Northern Bering Sea, unprecedented reductions in seasonal sea ice occurred during winter of 2017-2018. This was followed by an increase in warm southerly winds during February 2019 and early ice retreat.

The ecosystem response to these extreme events was rapid:

- Unusually warm spring and summer sea temperatures
- Reduced cold pool (natural thermal barrier created by melting sea ice between the Northern and Southern Bering Sea ecosystems)



A cnidarian (jellyfish) found in Arctic waters. Image courtesy of Arctic Exploration 2002, Kevin Raskoff, MBARI, NOAA/OER



Chum salmon swimming upriver. Stori Oates/NOAA Fisheries photo

- Expansion of subarctic fish species into the Northern Bering and Southern Chukchi seas,
- An increase in seabird die-offs
- Reduction in high-fat chum salmon prey
- Declines in run sizes of Western Alaska chum salmon to record low levels.

Chum salmon spend the majority of their life in the marine environment. In Western Alaska, juvenile chum salmon enter the marine waters of the Northern Bering Sea from mid-June to mid-July. They spend their first summer at sea feeding and growing along the Northern Bering Sea shelf.

During late fall and early winter, Western Alaska juvenile chum salmon migrate out of the Bering Sea and into the Gulf of Alaska. This is where they spend their first winter at sea. Over the next one to four or more years, they migrate between the Gulf of Alaska during winter and the Gulf of Alaska and the Bering Sea during summer. After they mature, they return to their natal rivers to spawn.

Juvenile chum salmon tend to allocate energy to rapid growth when they first enter the marine environment. Later in the season, energy is allocated to fat storage. Faster growth rates early on reduce the chances that a juvenile salmon will become a meal for predators. Larger juvenile salmon that attain sufficient energy reserves by the end of summer/early fall also have a greater probability of surviving the winter.

How warming may have affected chum: Scientists speculate that chum salmon overwinter survival was affected by exposure to two separate warming events that occurred within their early marine and winter habitats. As juveniles when they first entered the marine environment, they were subjected to warmer than average temperatures in the Northern Bering Sea. Those that survived and migrated to the Gulf of Alaska to overwinter were also exposed to warmer than average temperatures.

When exposed to these higher than normal ocean temperatures in their habitats, their metabolic rates increased, requiring them to seek more food for growth. The prey that was available within their early marine habitat was of lower quality. Another issue is that typically prey availability during winter decreases.

Researchers found that juvenile chum salmon fed on a variety



Competitors take part in the Fishermen's Fall Festival survival suit race on Sept. 30 at Fishermen's Terminal in Seattle. Jeff Pond photo

of prey during the warm and cold periods. However during warm periods, researchers observed that there was an increased percentage of lower quality prey available, especially during the recent warm period.

Scientists saw a shift in prey to cnidaria jellyfish during warm years. The caloric content of this jellyfish is roughly half that of other juvenile chum salmon prey.

Juvenile chum salmon stomach contents contained jellyfish during the first warm period. In the second warm period, jellyfish were proportionally more dominant in the stomach contents. This was also the period with the lowest fat content values for juvenile chum salmon, suggesting a direct connection between late summer fat storage and prey quality.

Juvenile salmon potentially faced increased competition among other chum salmon stocks that are also distributed in the Gulf of Alaska during winter.

"It is really these potential interactions among sea temperature, prey quality, and prey quantity that can affect energy accumulation or fat storage in juvenile chum salmon during their first year at sea. These interactions may play a significant role in survival during that first winter," said Kathrine Howard, coauthor, fishery scientist, Alaska Department of Fish and Game.

Juvenile chum abundance and adult runs: The abundance of juvenile chum salmon in the Northern Bering Sea increased during the more recent warm period. Scientists suspect that warmer water in natal rivers and streams could have improved the freshwater survival of young chum salmon. This may have enabled more juveniles to make it downstream to the ocean.

While a strong relationship between juvenile chum salmon abundance and adult returns to rivers in the Northern Bering Sea has not been established, the expectation was the greater abundance of juvenile chum salmon seen in the recent warm period would herald higher adult returns to the region three to four years later.

This was not the case because when juvenile salmon entered the marine environment they didn't find the food they needed to attain sufficient fat reserves prior to winter. As a result, scientists suspect this likely impacted juvenile salmon survival and potentially contributed to recent annual variation in adult survival.

"Recent declines in chum salmon and subsequent closures of commercial and subsistence fisheries in Western Alaska, coinciding with years of record warm water temperatures, has heightened the urgency for this research," Farley said. ↓

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An 'average' outlook for pink salmon

Southeast forecast: Southeast Alaska is the state's main source of wild pink salmon, and next season is expected to see another sizeable catch from the region.

The pink salmon harvest in 2024 is predicted to be in the "average" range with a point estimate of 19 million fish, the Alaska Department of Fish and Game and NOAA Fisheries announced.

The harvest forecast is just below the recent 10-year average even-year harvest of 21 million pink.

Generally, odd years produce bigger catches.

The Southeast harvest of nearly 48 million pinks in 2023 greatly exceeded the preseason forecast, the agencies said.

"The underforecast for 2023 may have been related in part to exceptional marine survival once juvenile pink salmon left Southeast Alaska inside waters," they said. "Pink salmon runs were generally large from Puget Sound in Washington, through the Gulf of Alaska, and extending to Russia, and runs exceeded forecasts in some other regions throughout the species range, including the Fraser River in southern British Columbia.... In adjacent northern British Columbia, the Nass River saw a record return of nearly 3 million pink salmon, which greatly exceeded the forecast."

↓ ↓ ↓ ↓

Kodiak crab quota: The Department of Fish and Game set a quota of 3 million pounds of Tanner crab for the 2024 fishery in the Kodiak District.

That's a handsome number, though well below the 2023 quota of 5.8 million pounds.

The Kodiak District commercial crab season is set to open at noon Jan. 15, unless delayed by weather.

Tanner crab, also known as bairdi, are basically a beefed up version of opilio, or snow crab.

↓ ↓ ↓ ↓

Norton Sound crab results: This year's Norton Sound open access summer red king crab fishery opened at noon June 21 after a six-day delay due to lingering sea ice on the fishing grounds.

"Between the first delivery on June 23 and final delivery on July 19, 25 vessels and 24 permit holders made 142 landings totaling 387,031 pounds (137,110 crab), which was the highest since 2017," the Department of Fish and Game reported.

The average price paid for red king crab was \$6.50 a pound, a big drop from the \$12 average in 2022, the department said.

↓ ↓ ↓ ↓

Chignik turnaround: The remote Southwest Alaska salmon fishery at Chignik saw a catch of nearly 1.1 million sockeye this year, the Department of Fish and Game reported.

That's a decent tally after five dreadful seasons of producing as few as zero sockeye.

Farther back in its history, Chignik had yielded on occasion more than 2 million sockeye annually, and in 1999 actually cleared 3.1 million.

The fishing fleet was small this season with 35 active permits. The sockeye catch paid about \$3.85 million ex-vessel and other species including pink salmon added almost \$1.3 million, bringing value per permit to \$146,491.

↓ ↓ ↓ ↓

Tightening down on halibut bycatch: NOAA Fisheries announced Nov. 22 it was implementing changes to further restrict halibut bycatch by Bering Sea and Aleutian Islands trawlers known as the Amendment 80 fleet.

The fleet, numbering fewer than 20 vessels, trawls on bottom and targets various soles, cod, Pacific Ocean perch, and Atka mackerel.

The problem of high halibut bycatch has long dogged the fleet.

The changes, recommended by the North Pacific Fishery Management Council in 2021, establish a process for annually setting the halibut bycatch limit for the fleet based on halibut abundance. This replaces the fixed bycatch level the fleet previously enjoyed, and could mean tighter bycatch limits for the trawlers in times of low abundance.

The Amendment 80 trawlers aren't happy about the changes, which take effect Jan. 1.

↓ ↓ ↓ ↓

Washington watch: Members of Congress including Rep. Mary Peltola, D-Alaska, announced the launch of a bipartisan American Seafood Caucus.

The purpose is to "provide a forum for seafood policy champions to find common ground and ensure that healthy, domestically produced, seafood doesn't take a backseat to foreign products that often don't uphold our quality and sustainability standards, or may be illegally subsidized by foreign governments."

Other caucus members include Reps. Garret Graves, R-Louisiana, Derek Kilmer, D-Washington, and Rob Wittman, R-Virginia.

A press release listed a number of supporting organizations, including the Alaska Seafood Marketing Institute and the Pacific Seafood Processors Association.

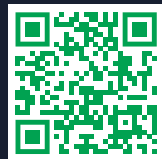
Wesley Loy is editor of **Pacific Fishing** magazine and producer of *Deckboss*, a blog on Alaska commercial fisheries.



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Fish farm proceeds, sans salmon

California aquaculture project: Once seen as a market threat to West Coast salmon fisheries, a downscaled indoor fish farm, minus salmon, is on track for Eureka, California.

The Humboldt Bay project originally was proposed to be much larger and was of high concern to the wild-caught fishing industry.

The fish farm's operator, Norway-based Nordic Aquafarms, had planned to rear Atlantic salmon. But the market for it has slacked, and plans for a sister facility in Belfast, Maine, have been dropped due to a successful legal challenge.

Those factors undermined the original plans, and last spring Nordic announced a switch to yellowtail kingfish.

The company hit what it calls "a milestone" on Nov. 16 – the California Coastal Commission's approval of a water pipe discharge permit.

Permit conditions include enhanced ocean water monitoring to make sure the facility's wastewater discharge isn't spurring toxic algae.

Nordic still has some hurdles to jump – its county-level coastal development permit has been appealed to the coastal commission and permits are still needed to rebuild the fish farm's bay water intakes.



Dungeness delay, again: A trend of late-starting commercial Dungeness crab seasons is continuing, with this year's season delayed until at least mid-December due to low meat quality.

As of mid-November, meat-to-shell ratio tests in California, Oregon, and Washington showed crabs testing below a 23 to 24 percent threshold in some areas.

Most of the tests were on crabs collected on Nov. 8 and Nov. 9, and at press time a second round of testing was set for early December.



Not so fast: Impacts to fishing are being flagged as California's Humboldt County considers an agreement with an offshore wind energy port developer.

At a Nov. 7 meeting, Humboldt's board of supervisors considered a draft memorandum of agreement between the county and Crowley Wind Services LLC.

Crowley is partnering with the county's harbor district on construction of a wind energy marine terminal and supply/installation facility at a former Humboldt Bay pulp mill site.

The MOA was supposed to be adopted by now, but county staff said more public input was needed.

The voices of the local fishing industry are among those needing more of an ear.

"Fishermen have the most to lose from this relationship, and it seems to be going way too fast," said Vivian Helliwell, of the Pacific Coast Federation of Fishermen's Associations, during a public comment period.

There will be "cumulative effects" with the combined impacts of port development and offshore wind energy infrastructure,

she said.

Helliwell said two offshore wind energy developers have had "preliminary conversations" with the PCFFA about compensating fishermen for impacts, and "so far, it's been very preliminary and not very satisfactory."

Also figuring in are Crowley controversies, which include two federal sex trafficking lawsuits against it and the resignation of its vice president following a sexual harassment allegation.

Supervisors directed economic development staff to work on a revised MOA, with more involvement from fishing groups and tribes.

The harbor district has begun work on the port project's environmental review, which is expected to reach a final draft stage sometime next year. Port construction is expected to begin 2026 to 2027 at the soonest.



Klamath dam dismantling: Removal of four long-controversial dams on California's Lower Klamath River is underway, and the smallest of them is now completely gone.

The milestone removal of the dam known as Copco No. 2 was fully completed in early November. The job was capped with removal of diversion infrastructure, river channel grading, and erosion prevention work.

With Copco No. 2 removed, the river can flow through a canyon that had been dewatered due to diversion to a downstream powerhouse.

A Nov. 2 press release from the Klamath River Renewal Corp., a nonprofit group formed to supervise river restoration, noted the significance of the project.

"Seeing the Klamath River flow through this canyon after being diverted for nearly a century is inspiring," said Laura Hazlett, the group's chief operating officer. "It makes me excited for everything else that is to come with the removal of the other three dams."

That task will be finished in late 2024, with restoration work continuing "for years to come," according to the release.

It will be game changer for California salmon. Once done, dam removal will open salmon access to hundreds of miles of habitat and end the hydroelectric system's impacts on river flows.



Puget Sound salmon report: A national agency is flagging Puget Sound pollution and "water quality impairments" as it calls for revising the Clean Water Act's "largely voluntary approach" to compliance.

The U.S. Government Accountability Office released a November report to congressional requesters noting the decline of Puget Sound salmon "in part due to the degradation of water quality."

The report says the Clean Water Act should have teeth when it comes to reducing pollution such as agricultural runoff.

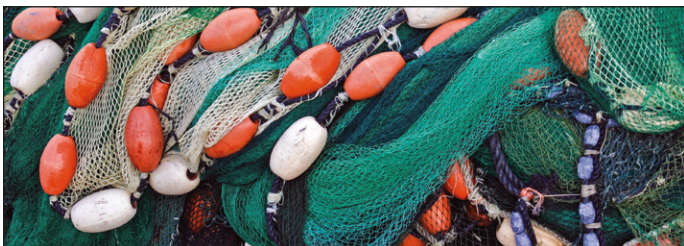
The report also calls for better compliance with deadlines on compiling lists of impaired water bodies.

There's a schism between federal and state responses to the latter recommendation.

The U.S. Environmental Protection Agency agrees with it, but the Washington Department of Ecology "expressed some concerns."

"GAO maintains that the recommendation is warranted," the report says.

Daniel Mintz reports from Eureka, Calif.



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IFQ NEWS

Price differences reflect the range from small blocks of D or C class on the lower end to unblocked B class unless otherwise indicated.

HALIBUT

At the time of this writing the halibut season is drawing to a close. Approximately 84% of the halibut TAC has been landed, with approximately 90% in areas 2C, 3A and 3B. Asking prices for IFQ have been reduced significantly in advance of year end. We expect there to be some market activity through the end of the year but anticipate most buyers and sellers will wait for IPHC recommendations before making offers. The latest is as follows:

AREA	ESTIMATED VALUES
2C - Blocked available.	\$40.00/# - \$60.00/#
3A - High availability, make offers.	\$22.00/# - \$32.00/#
3B - Blocked and unblocked available, make offers.	\$20.00/# - \$27.00/#
4A - High availability for blocked, prices reduced.	\$6.00/# - \$10.00/#
4B - Make offers.	\$4.00/# - \$8.00/#
4C/4D - Make offers.	\$8.00/# - \$12.00/#

SABLEFISH

At the time of this writing, 59% of the sablefish TAC has been landed. Very few IFQ landings were made towards the end of the season due to extremely poor ex-vessel prices and lack of markets. As with last year, a substantial portion of this year's TAC has gone unharvested. Asking prices for IFQ continue to decline but there has been no market activity. Please tell your friends and family about sablefish this holiday season and encourage them to buy more of it, the stuff is delicious. The latest is as follows:

AREA	ESTIMATED VALUES
SE - High availability across the board.	\$7.00/# - \$10.00/#
WY - Unblocked available.	\$7.00/# - \$10.00/#
CG - All classes and types available.	\$5.00/# - \$8.00/#
WG - A shares available.	\$4.50/# - \$9.00/# (A class)
AI - No recent activity.	\$1.00/# - \$3.00*/# (A class)
BS - Make offers.	\$1.00/# - \$3.00*/# (A class)

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ALASKA PERMITS

ESTIMATED VALUES

Power Troll	\$22k
Area M Drift	\$135k
Area M Seine	\$130k
Bristol Bay Drift	\$131k
Bristol Bay Setnet	\$46k
Cook Inlet Drift	\$29k
Kodiak Seine	\$30k
Kodiak Tanner <60'/<120'	\$60k/\$110k
PWS Drift	\$92k
PWS Seine	\$180k
SE Dungeness (75-300 pots)	Variable
Southeast Drift	\$47k
Southeast Herring Seine	\$185k
Southeast Salmon Seine	\$170k
SE Chatham Black Cod	\$420k

WEST COAST PERMITS

ESTIMATED VALUES

California Crab Variable - Call for info
 We recommend that all permit holders request that CDFW verify allowable length of their permit. The latest is as follows:

- 175 pot: \$25k-\$40k range.
- 250 pot: \$30k-\$40k less than 40'. \$40k-\$60k for 40'+
- 300-350 pot: \$50k-\$125k.
- 400-450 pot: \$90k-\$200k. Value dependent on length.
- 500 pot: \$190k-\$350k. Highest value in 58' and above.

California Deeper Nearshore	\$36k
CA Halibut Trawl	\$35k - \$60k
California Squid	Variable - Call for info
California Squid Light/Brail	Variable - Call for info
Oregon Pink Shrimp	\$50k - \$60k
Oregon Crab	Variable - Call for info
Increased supply. Limited activity.	
- 200 pot: \$45k-\$60k.	
- 300 pot: \$100k-\$200k.	
- 500 pot: \$200k-\$300k for <50' & \$6k-\$7k per foot >50'.	
Puget Sound Crab	\$200k
Puget Sound Drift	\$10k
Puget Sound Seine	\$75k
Washington Crab	Variable - Call for info
Limited availability.	
- 300 pot: \$90k - \$160k depending on length	
- 500 pot: \$300k - \$425k depending on length	
Washington Pink Shrimp	\$55k
Washington Troll	\$26k
Longline - Unendorsed	\$80k - \$110k
- Increased demand for leases.	
Longline - Sablefish Endorsed	Variable
- Permits available, call for more information.	
A-Trawl	Variable - Call for info

Boats/Permits/IFQs



F/V WESTERLY

1975 61' x 10' x 18' x 6' (6' headroom) combination, longliner, packer with 13.5 litre 6135 John Deere engine, manufactured by Centre Shipyard out of Vancouver, BC. Top-producing 61' steel freezer combination. Proven landings for halibut, tuna, and black cod. Freezer capacity is 35 tons frozen – capable of freezing 600 tuna a day. Complete with lots of extra top-of-the-line equipment and gear for all the fisheries. Easily converted to pack on fisheries such as urchins, abalone, etc. Extended wheelhouse with gear dry lockers and full stand up fridge, accommodates easy outdoor wheelhouse for crew. Power: 13.5 liter 6135 John Deere engine; Twin Disc 514 reduction gear – rebuilt 2014; 5.16:1 ratio; 10 knots @ 1,865 RPM cruising speed; four-blade Osborne propeller; 3"-diameter stainless steel shaft; five steel fuel tanks (6,000-gallon capacity below deck); fuel transfer pump; engine alarm; engine fans; Keel cooling; genset #1: 45 kw John Deere 4045 (1,384 hours) with 4.2 cubic inch Eaton flow sensing hydraulic pump; genset #2: 50 kw four-cylinder Isuzu (14,721 hours) with flow sensing hydraulic pump; zinc saver isolates boat from dock power; blast freezer; two 15 hp electric freezer drives; two 05G Longstroke compressors – one new June 2008, one new 2011 (freezes 600 tuna per day); 2" Flomax stainless steel bilge pumps; 1" 1/4 Jabsco electric clutch on main; exhaust and wrapping are new as of 2016. Accommodations: sleeps four to five; electric stove; bar fridge (110 power) and two deep freezers; stainless steel galley sink; 500-gallon steel water tank; salt water converter; toilet; shower; six gallons hot water (110 electric); electric heating; five survival suits. Structural: steel decks and hull; aluminum frame safety glass windows in wheel house and Lexan storm windows; 2020 paint, zincs, and anti-fouling; foamed and glassed freezer holds; 35-ton capacity frozen fish, 50 tonnes fresh, large 40" flat back deck; anchor; Pilkington anchor winch with 26" anchor chain and 80 fathoms of 5/8 cable; longline drum with optional chute; Hyab winch with a lifting weight capacity of 4,000 lbs; two tuna puller gurdies; two life rafts; stabilizers. Electronics: Fleet One wifi system; sonar; GP32 and GPS navigator/Furuno VM; ICOM M601 VHF and Furuno FM 2510 VHF; Kenwood TKM 707 sideband (SSB); computer; Furuno 72 Mi PR7112 radar; Furuno color FCV 292 sounder and Plus Sonar Furuno 250 sounder; Nobletec Catch plotter program; 2001 comnav; spotlight; compass adjusted 2006; batteries new as of 2016; inverter; Kobalt con-

trols; three electric steering stations; 12 volts for auxiliary; sodium lights. \$500,000 USD. Serious inquiries only. Contact Dale Wick: (250) 883-3019 or dellwoodfishing@gmail.com.

HALIBUT AVAILABLE TO FISH 2024

4B around 17,000lbs + rollover from 2023. 4D around 39,000lbs + rollover from 2023. B class IFQ. Call or text (360) 301-5947. Email lalageyoder@gmail.com.



FOR SALE

F/V Pursuit for sale; owner retiring. Rigged for trolling albacore. Built by Jones-Goodell in Tacoma, WA. 60x17.2', blast refrigerant, 25-ton plate freezer. Includes Oregon salmon permit. Fished in both North and South Pacific. Carries excess of 7,500 gallons of diesel. Survey available. This rig is yacht-conversion worthy. Priced to sell at \$325,000. Email fvpursuit@aol.com with "Pursuit Sale" in subject line or call (707) 407-7817.

WANTED

Looking to buy CA Spot Prawn permit. Offer \$500K. Call (213) 361-9553.

FOR SALE

Puget sound purse seine net, 285 fathoms long, seven strips deep. Half new web and some new lead line in 2019. \$10k. Call (206) 915-8345.

FOR SALE

Brand new Isuzu UM6HK Marine Diesel engine and Twin Disc 5091 4:1 reduction gear with PTO. Still in crate, never run. 300 hp at 2,400 rpm. Isuzu extras: Walker AIRSEP, extra bolt on drive pulls for front of crank shaft. Located in Craig, AK. \$60,000. Contact Matt Peavey of F/V Anne Louise at (907) 401-0922.



FOR SALE

Delta purse seiner, fully rigged, all squid permits and pelagic permits for California. Proven producer and has Oregon squid permit also. Owner retiring and willing to train new owner or captain for three months. \$2.3 million. Call Don: (949) 279-9369.



FOR SALE

65-foot charter boat – totally refurbished and set up for overnight tuna trips. Call Don: (949) 279-9369. Priced to move: \$679,000.



FOR SALE

Beautiful lobster style MDI 45 foot boat located in Santa Barbara, CA. Boat is priced to sell at only \$229,000. Boat is a great sea boat currently fishing offshore for black cod. Boat would make a great lite boat or lobster boat also. Call Don: (949) 279-9369.



27' JC COMMERCIAL LOBSTER BOAT

Cummins 6 BTA 370 HP (2016) cruise 14-15 6 GPH. 2 sleeping bunks. Price: \$75K. Call (213) 361-9553.



FOR SALE

Purse seiner priced to sell. \$329,000. Call Don: (949) 279-9369.



FOR SALE

Have a market light boat permit for sale for \$329,000 and a 125 ton market purse seine permit for California for \$1,799,999. Call Don (949) 279-9369. La Niña coming means squid catches going up next year.

FOR SALE

Have two California lobster permits for sale; \$130,000 today. Also looking for a Southern California rock crab permit; have buyer standing by. Call Don at (949) 279-9369.



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FOR SALE

Squid lite boat and trail boat for squid. Boat freshly hauled out ready to fish for upcoming season. Priced to sell at \$399,000. Includes all equipment, boat, and California squid permit. Call Don: (949) 279-9369.



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SE23-008 58'x19.5'x10' Delta built in 1979, upgraded with big rolling chocks, bulbous bow, 50hp bow thruster, and rigged for seine, longline, and crab. Cummins K19A main w/ ZF gear. John Deere 60kw genset w/ 100 gal auxiliary hydraulics off Pitts clutch and Mitsubishi 20kw genset. 18-ton and 20-ton RSW systems. Packs 135k lbs in (2) fish holds. Deck includes Kolstrand N10 deck winch, Marco 28" powerblock w/ gripper, rolling davits, bait shed, and crab davit. Main boom slider. Pass-through picking boom. Complete electronics package, including MAQ and Koden sonars, Simrad ES80 w/ Olex, ComNav autopilot, and computer w/ Nobeltec. Excellent hydraulics, redundant circ pumps, and extensive upgrades. Asking \$1,400,000.



HALIBUT IFQ

3A-B-U: 19,000 lbs.....asking \$30.00
3A-B-U: 14,000 lbs.....asking \$36.00
3A-C-B: 2,200 lbs.....asking \$31.00
3B-B-U: 10,000 lbs.....asking \$28.00
3B-B-U: 2,800 lbs.....asking \$27.00
4A-B-B: 8,000 lbs.....asking \$8.00
4C-C-U: 5,200 lbs.....asking \$10.00

SABLEFISH IFQ

CG-A-U: 22,500 lbs.....asking \$14.00
CG-B-U: 49,000 lbs.....asking \$9.00
SE-B-U: 63,500 lbs.....asking \$13.00
WY-B-U: 24,000 lbs.....asking \$11.00

CH23-005 100'x20'x5" aluminum passenger vessel built by Breaux in 1967. Recently renewed COI for 48 persons with all related certification work completed. Cruises at 15 knots. Twin GMC 1671 mains rated at 600 hp each. Hurth HSW 630A gear. GMC 271 30 kW and John Deere 20 kW gensets. Includes full galley, (5) berths, (2) heads, shower, Red Dot heaters and furnace. Electronics include GPS, radar, computer, VHF, sounder and plotter. Vessel has been used most recently as a crew boat. Asking \$225,000.



TE23-009 100'x25'x12" steel, tender/crabber built by Toche Enterprises Inc in 1973. Converted to a Bering Sea crabber and lengthened 10' in 1975. Detroit 16V71 rated at 480 hp w/ Capitol gear. (2) Detroit 671 135 kW and Yanmar 45 kW. Packs 210k lbs salmon in (2) insulated fish holds. Deck mounted, self-contained IMS 50 ton RSW. AK Marine knuckle crane, stick crane and picking boom. Deck includes TransVac pump, sorting table, dewatering box, (3) weigh boxes, hoses and hydraulic davit. Upgrades include new wood deck, new Lexon windows, reconditioned laz voids, shaft, and outlass. New and upgraded electronics. Full galley, (2) staterooms, (6) berths, head, shower, washer/dryer. Asking \$750,000.



BB23-037 32'x15'x2" aluminum, twin-jet, Bristol Bay through-picker built by All Points in 1996. Twin Caterpillar C9 main engines, rated at 575 hp per. Twin Disk 5065 gears and Ultra Jet 340HTS 16" water jets. Makes 34 knots, light. Packs 25k# in (8) double-walled aluminum fish holds. Pac West 10 ton RSW system. (2) Eaton 4.88 cu hydraulic pumps, deck control valves. Narrow reel with Seamar drive, Kinematics power rollers, bow and stern. Comprehensive electronics. Asking \$600,000.



BB23-043 32'x14'x18" aluminum, twin jet, Bristol Bay gillnetter built by Aliotti in 2012. Twin Cummins QSB turbo aftercooler, each rated at 450 hp w/ Ultra Jet 340 water jets. Hydraulically driven 7.5 ton RSW system. Makes 35 mph top speed and travels at 18 mph. Packs 12k lbs in (6) aluminum fish holds. Glendinning controls. Fixed reel, levelwind, Kinematic stern roller. Electronics include GPS, sounder, VHF, plotter, and inverter.



Heated captains seat, (4) berths, diesel heater, propane stove. Asking \$440,000.

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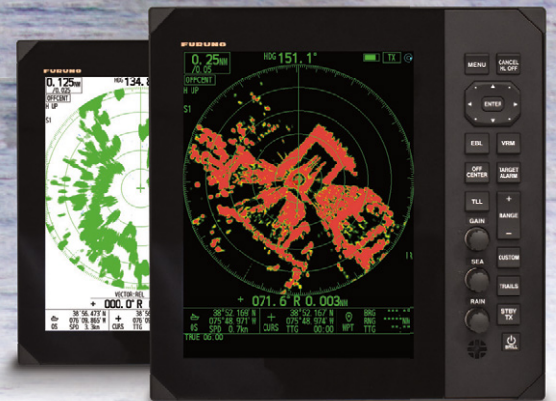
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