HUMBOLDT AREA SALTWATER ANGLERS

A VOICE FOR SALTWATER SPORTFISHERS

2021 SPRING NEWSLETER

The mission of Humboldt Area Saltwater Anglers is to represent North Coast fishermen's historic and ongoing right to sport fish along the Northern California coast; advocate reasonable and rational sport fishing seasons and regulations; educate our members and the general public about the economic and cultural contributions of sport fishing to our local economies; and promote sustainable stewardship of the resource.

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All photos and articles in this issue are donated by HASA members and interested parties.

Submission of article topics and photos should be sent to **jcphasa@gmail.com.**

Comments are always welcome and should be sent to **jcphasa@gmail.com.**

HASA would like to expressly thank our friends for their time and contributions to our newsletter .

All past HASA newsletters can be viewed at https://humboldtasa.com/mdocuments-library/ and http://humboldttuna.com/smf/index.php?board=37.0

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This is issue #43.

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President's Message

The off season has been busy on some fronts. First, please extend your congratulations to HASA Board member Ross Taylor. He's been appointed by the state of California to the Dungeness Crab Task Force. A copy of his appointment letter can be seen on page 5. I'm sure we'll be hearing more about that in the future. And speaking of crabbing, the Board and many of our members were active in successfully combating Assembly Bill 534. You can read more on page 4.

In February the Board was approached by CDFW regarding the upcoming Pacific halibut season. As you are likely aware, last year the State's covid protocols forbade dockside fish counters from actually measuring our catch, so all they did was count fish. The CDFW staff we spoke with seemed surprised to learn that Oregon fish samplers had in fact measured halibut in 2020 and did have accurate numbers. Without actual data, the large numbers of small halibut caught here were then assumed by CDFW data collectors to be larger than their actual size, which almost certainly resulted in our season ending early (see article in HASA Fall 2020 newsletter groundfish update article on this issue). The State was interested in whether we might be able to implement a plan whereby we measured and reported our own catch sizes. The problem was that they were unable to agree on how to design this sampling effort in a way that would produce statistically acceptable results. Eventually it became evident that any actual results were sure to be ignored, no matter how the effort was managed. The most recent information we have is that dock samplers will be allowed to actually verify halibut lengths in 2021-See CDFW press release on page 16.

In March we were again approached by NOAA Southwest Fisheries Science Center to provide input regarding the impacts of COVID-19 to our 2020 sport fishing experience. They combined our experiences with responses of others around the country and produced a report titled West Coast Fisheries Impacts from COVID-19. I'd like to thank the charter skippers and individual fishers that shared their experiences so we could compile a response to NOAA on short notice. The NOAA report can be found at https://media.fisheries.noaa.gov/2021-01/West-Coast-COVID-19-Impact-Snapshot.pdf.

Regarding the Klamath dam removal process, sometimes it seems that for every two steps forward a government takes, it instinctively takes at least one step backwards. On page 13 we have a summary from the April Pacific Fishery Management Council concerning the Klamath River situation.

We've also been contacted by the California Marine Sanctuary Foundation. They are interested in producing one or more Zoom style presentations on subjects they think North Coast fishers may find interesting. If this gets scheduled we'll be sure to let everyone know how to attend.

And finally, please take note we're passing along an important press release from the Coast Guard on page 8.

Be safe and I hope to see you outside the jaws soon.

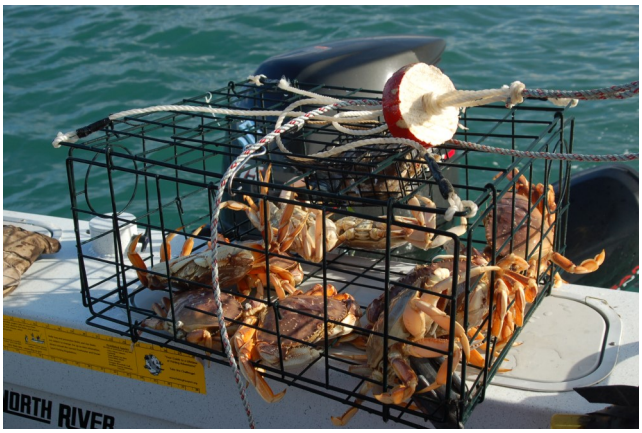
AB-534: Ropeless Fishing Gear - Update

By Ross Taylor, HASA Board Member, Dungeness Crab Task Force Representative

Assembly Bill 534 (AB-534), titled Ropeless Fishing Gear, was introduced to the State Legislature on February 11, 2021, by Assembly member Rob Bonta of Oakland. Passage of this bill would mandate the use of ropeless fishing gear by the year 2025 for all trap fisheries in California, in both commercial and recreation fisheries. The main focus of this bill was reducing whale entanglements by the commercial Dungeness crab fishery but was expanded to cover any trap fishery that uses gear with a static line running from a trap to the surface attached to a buoy.

On March 23, 2021, the HASA Board of Directors submitted an opposition letter to the State Legislature's Committee of Water, Parks and Wildlife; prior to the bill's hearing on April 8, 2021 (see page 6). HASA's objections were based on the current unreliability and high costs of ropeless gear. Most "ropeless" gear being developed and tested actually has bundled ropes and buoys that are electronically released by the fisherman at the time of retrieval. The gear currently being tested has had up to a 20% failure-to-deploy rate, which HASA contended would result in more lost/derelict fishing gear and likely more, not fewer, whale entanglements. HASA was also concerned that mandating ropeless gear only by 2025 would impede the development of other types of alternative gear designed to reduce whale entanglements. Currently, ropeless crab pots cost around $2,500 each and would render recreational crabbing too expensive for most people.

HASA member Ben Herring took the Board's opposition letter and crafted an online petition at Change.org. This petition quickly gained traction on Facebook and Instagram. The online petition was modified to send daily email alerts directly to the bill's author (Rob Bonta), notifying him of the ever increasing number of signatures. Many thanks are due to Ben and to everyone who signed the petition and/or submitted individual letters to the State Legislature. As the newly appointed recreational fishery representative to the Dungeness Crab Task Force (DCTF), I used HASA's letter to assist the DCTF in drafting this group's opposition letter. On March 31, 2021, the online petition's tally of 5,500 signatures was sent to the entire Water, Parks and Wildlife Committee. The April 8th hearing was postponed by the author, on April 19th an amended AB-534 was resubmitted by the author, and on April 29th the bill's hearing was canceled by the author. This bill or a similar one may reappear in the coming months; but with a seat at the DCTF, HASA will remain vigilant and keep our local fishing community updated. We strive to actively work with other DCTF stakeholders and CDFW in developing feasible and effective management strategies to reduce derelict fishing gear and future whale entanglements.



OCEAN PROTECTION COUNCIL

April 19, 2021

Dear Mr. Ross Taylor,

Thank you for your interest in serving on the Dungeness Crab Task Force (DCTF), a legislatively-mandated advisory body that reviews and evaluates Dungeness crab fishery management measures and provides recommendations to the Joint Committee on Fisheries and Aquaculture (JCFA), California Department of Fish and Wildlife (CDFW), and the Fish and Game Commission (FGC).

Section 8276.4 of the Fish and Game Code states that seven members are appointed to the DCTF by the Chair of the Ocean Protection Council (OPC) following a public solicitation for nominations. These seven members represent sport fishing, crab processing, commercial passenger fishing vessel, and nongovernmental organization interests.

Based on your previous experience on the DCTF, knowledge of the Dungeness crab fishery, willingness and ability to effectively and respectfully collaborate among diverse perspectives and represent others within your representative seat, as well as ability to consistently participate in DCTF meetings – I am happy to appoint you as the nonvoting DCTF member representing sport fishing interests.

Your participation in the DCTF is very important to the California Dungeness crab fishery. Thank you for your service and commitment to sustainable resources management in California.

Sincerely,

Wade Crowfoot
Secretary, California Natural Resources Agency
Chair, California Ocean Protection Council

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March 15, 2021

Assembly Member Rob Bonta
State Capital, PO Box 924849
Sacramento CA, 94249-0018

RE: Assembly Bill 534 – Ropeless Fishing Gear.

Dear Assembly Member Bonta:

The Humboldt Area Saltwater Anglers (HASA) appreciates the opportunity to comment on AB-534 regarding amendments to Fish and Game Code Sections 9005 and 9006, and the addition of Section 5524, as related to fishing with ropeless gear in commercial and recreational trap fisheries. HASA is a non-profit association whose purpose is to educate anglers in conservation and best management practices of fishing, work cooperatively with Federal and State fishery management officials on proposed regulations and provide our perspective on how regulations will affect our sector, from opportunity and economic perspectives. HASA's membership of approximately 400 saltwater anglers is passionate about maintaining long-term recreational angling opportunities on the north coast of California, within the context of sound fishery management practices.

We strongly support the primary objective of reducing whale entanglements caused by active and derelict fishing gear off our coast, and have been participating for several years on the Dungeness Crab Task Force as the non-voting recreational fishing representative and are well versed on the issues and conservation concerns. HASA has read AB-534 and we have concerns with the timing and intent of this bill, especially as it relates to recreational fishing for Dungeness crab.

First, AB-534 requires, by no later than November 1, 2025, ropeless fishing gear, as determined by the CDFW, to be used when taking any species of fish for commercial or recreational purposes in any trap fishery. The bill would require CDFW and the Fish and Game Commission to promulgate regulations to implement the above requirement, including establishing a public process to certify fishing gear as ropeless and defining ropeless gear as including only gear in which there is no static vertical buoy line. HASA feels that 2025 is premature to force a change to a type of gear that still does not exist in terms of economics, reliability, safety and functionality. We define functionality as feasible gear for commercial and recreational fishermen to run/work that also reduces entanglements with whales and leatherback sea turtles to a measurable degree that's superior to using rope/buoy traps under the current RAMP rules and recreational regulations. We feel that CDFW is obligated to prove that whatever ropeless or alternate gear technology is invented, that it does in fact reduce entanglements better than fishing under RAMP restrictions. Forcing a change in gear type without fully understanding whether it is effective in reducing entanglements is not a sound management practice. HASA is concerned that adoption of AB-534 would also focus all of the research and testing of alternative gear towards ropeless technology and abandon exploration of other types of alternative gear. This contradicts the broader scope set forth by the California Dungeness Crab Fishing Gear Working Group to explore "any new gear innovations (low tech or high tech)". HASA is also concerned that AB-534's language would render the use of crab rings as illegal gear for use in recreational crabbing. Crab rings are an inexpensive gear type often used by entry-level recreational crabbers, as well as by kayakers who

find traps too bulky to carry and safely use from a kayak. Crab rings are also tended frequently and are not left to soak overnight, thus risk of entanglements is extremely low to non-existent.

Secondly, HASA strongly opposes that recreational crabbing is included in AB-534, on the basis of economics, effectiveness uncertainty, and feasibility. The projected cost of a single ropeless crab pot is in the neighborhood of $2,000 versus the cost of around $125 for a recreational crab pot with a static line and buoys. The average recreational crabber on the north coast typically fishes for several limits of crab each season, with the bulk of effort made in November prior to the start of the commercial season, after which most of the harvestable crabs are then caught in commercial pots. Forcing recreational crabbers to invest upwards of $6,000 to $10,000 in ropeless gear for a few limits of Dungeness crab is not economically feasible. Because ropeless gear actually does have ropes and buoys that are released when activated by the angler, all recreational crabbers under AB-534 regulations would require the technology for remotely activating their gear, yet another cost added to their ability to recreationally catch crab. Finally, similar to the commercial fleet, recreational crabbers would need to purchase (and know how to operate) the electronic equipment to locate the acoustic modems with GPS attached to ropeless pots to know where previously set pots were located to avoid setting their gear on top these already deployed pots. Given that recreational crabbers are very minor contributors to whale entanglements; the combination of very small risk with uncertainties of gear effectiveness and prohibitively high costs of ropeless gear, HASA believes that recreational crabbing should be exempt from AB-534.

HASA also shares concerns voiced by the rest of the commercial and recreational crabbers that the sole use of ropeless gear will likely lead to more derelict fishing gear, and ultimately more, not less, entanglements of whales and sea turtles. With approximately a 20% retrieval failure rate in previous sea trials in numerous commercial trap fisheries in California, Canada and the East Coast, a ropeless gear mandate would result in more lost or derelict fishing gear, littering our oceans and potentially creating submerged tangles of partially deployed buoy lines and buoys. Gear that failed to deploy when expected would eventually be abandoned, and many would deploy or partially deploy at a later date due to galvanic corrosion of back-up release mechanisms and the turbulence of winter storms on the shallow coastal shelf. Fishing vessels employed in the Lost Gear Recovery program would also have difficulty locating and retrieving abandoned ropeless traps that failed to fully deploy.

HASA supports reducing whale entanglement risk and reduction in marine debris, but we think the proposed legislation as written will: 1) increase marine debris rather than reduce it, 2) impose prohibitively high costs on recreational anglers that contribute very little to the entanglement and debris problems, and 3) may not be as effective in reducing entanglement risk compared to evolving efforts by the DCTF and CDFW. Because the debris removal effort by the DCTF and implementation of RAMP rules by CDFW is in its infancy, HASA is currently unwilling to support legislation that imposes mandatory ropeless gear. We look forward to the opportunity of reviewing a thorough and rigorous evaluation of the efficacy of these efforts being conducted by the DCTF and CDFW. This deferral in mandating ropeless gear will also provide more time to investigate additional techniques and technologies that can be compared to the efficacy of the DCTF and CDFW efforts, when a more informed, effective, and cost-effective solution can be developed.

Sincerely yours,

Larry De Ridder, President, Humboldt Area Saltwater Anglers

Engine Cut-off Switch Requirement

NEWS RELEASE FROM THE COAST GUARD, May 7, 2021

SEATTLE — The Coast Guard will implement a new law this boating season that requires operators of recreational vessels less than 26 feet in length to use an engine cut-off switch (ECOS) and associated ECOS link (ECOSL).

Each year, the Coast Guard receives reports of recreational vessel operators who fall off or are suddenly and unexpectedly thrown out of their boat.

During these incidents the boat continues to operate with no one in control of the vessel, leaving the operator stranded in the water as the boat continues on course, or the boat begins to circle the person in the water eventually striking them, often with the propeller. These dangerous runaway vessel situations put the ejected operator, other users of the waterway, marine law enforcement officers, and other first responders in serious danger.

“Emergency cut-off switches protect all members of the boating public," Lt. Collin Gruin, the Coast Guard Sector Columbia River boarding team supervisor. "In the Pacific Northwest in 2019, 26 boating accidents involved boat operators being ejected from the vessel or falling overboard. An engine cut-off switch, when used properly, prevents a runaway vessel from causing more harm in these types of accidents.”

The ECOS and ECOSL prevent runaway vessels and the threats they pose. The ECOSL attaches the vessel operator to a switch that shuts off the engine if the operator is displaced from the helm. The ECOSL is usually a lanyard-style cord that attaches to an ECOS either in close proximity to the helm or on the outboard motor itself if the vessel is operated by a tiller. When enough tension is applied, the ECOSL disengages from the ECOS and the motor is automatically shut down. Wireless ECOS have recently been developed and are also approved for use. These devices use an electronic “fob” that is carried by the operator and senses when it is submerged in water, activating the ECOS and turning the engine off. Wireless devices are available on the aftermarket and are beginning to become available as manufacturer-installed options.

Section 503 of the Coast Guard Authorization Act of 2018 required manufacturers of covered recreational vessels (less than 26 feet in length, with an engine capable of 115 lbs. or more of static thrust) to equip the vessel with an ECOS installed as of December 2019. Owners of recreational vessels produced after December 2019 are required to maintain the ECOS on their vessel in a serviceable condition. It is recommended that recreational vessel owners regularly check their existing ECOS system to ensure it works properly, following manufacturer’s instructions.

Section 8316 of the Elijah E. Cummings Coast Guard Authorization Act of 2020 requires individuals operating covered recreational vessels (less than 26 feet in length, with an engine capable of 115 lbs. or more of static thrust, which equates to about 3 horsepower or more) to use ECOS “links” while operating on plane or above displacement speed. Using the ECOSL is not required when the main helm is installed within an enclosed cabin. Common situations where ECOSL use would not be required include docking/trailering, trolling, and operating in no-wake zones.

Boaters are encouraged to check the U.S. Coast Guard website for additional information on this new use requirement and other safety regulations and recommendations: https://uscgboating.org/recreational-boaters/engine-cut-off-switch-faq.php.

Monitoring and Population Suppression of Invasive Sacramento Pikeminnow in the South Fork Eel River

By Sam Rizza and Abel Brumo, Fisheries Biologists, Stillwater Science

Recent fisheries restoration and conservation efforts in the Eel River Basin have largely focused on improving and protecting stream habitats, while less emphasis has been placed on understanding and mitigating adverse impacts of non-native aquatic species. Non-native predatory fish can limit the productivity of already diminished native fish populations, limiting their ability to persist in degraded habitats and to recover in response to habitat restoration efforts. Of particular concern in the Eel River Basin is the non-native Sacramento pikeminnow, *Ptychocheilus grandis*, a large piscivorous cyprinid that was introduced into Lake Pillsbury in the upper mainstem Eel River around 1979 and has since expanded its distribution into much of the Basin.

A couple of the larger Pikeminnow captured during boat electrofishing.

In 2018, the Wiyot Tribe and Stillwater Sciences initiated Phase 1 of a collaborative project to address multiple questions regarding invasive Sacramento pikeminnow biology and management in the South Fork Eel River, focusing on the reach between Rattlesnake Creek and the confluence with the mainstem Eel River. Primary goals were threefold: (1) describe pikeminnow abundance and distribution in the study area, (2) develop and test population suppression methods, and (3) improve understanding of impacts on native fish. We performed snorkel surveys during summer on a spatially-balanced subset of 0.6-1.9 mile reaches to count pikeminnow in different size classes. A total of 13.4 miles of stream was surveyed and over 6,400 pikeminnow larger than 4 inches were observed (Table 1). Based on numbers observed in sampled reaches, 31,121 individuals larger than 4 inches were estimated to be present in the entire study area of 65 miles. Snorkel survey results were used to identify pikeminnow "hot-spots" and will be compared with future surveys to monitor population trends.

Table 1. The number of pikeminnow observed at the snorkel sites and the estimated number within the study area.

Size Class	<4 in	4-8 in	8-12 in	12-18 in	18+ in	All sizes
Counted	10,678	4,564	1,195	525	155	17,117
Estimated	51,610	22,059	5,776	2,537	749	82,731

Pilot-level efforts to test different pikeminnow population suppression methods were initiated in the South Fork Eel River study area in summer 2019, and focused on boat electrofishing, baited box traps, seining, and angling. Boat electrofishing was the most effective method tested for capturing pikeminnow larger than eight inches (Figure 1) but was limited to the lower portion of the study area to minimize impacts on juvenile salmonids, which are more common in upstream reaches where water temperatures are cooler. Large box traps—baited

Figure 1. Boat electrofishing on the lower South Fork Eel River.

with roe, anchovies, or chicken liver—were also tested. Chicken liver was clearly the most effective bait for attracting juvenile pikeminnow. The baited box traps were fixed with a GoPro camera to help monitor their effectiveness (Figure 2). Seining proved effective for capturing large numbers of the smaller, younger pikeminnow (<4 inches), but initial trials suggest limited effectiveness for larger sized fish. Additional evaluation of suppression methods is planned for 2021 and 2022.

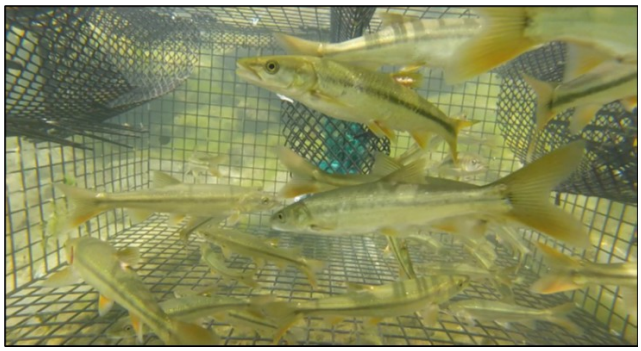


Figure 2. Juvenile Sacramento Pikeminnow approximately 4-8 inches in length inside a box trap baited with chicken liver.

To assess predation on native fish, in particular juvenile salmonids and lamprey, pikeminnow captured during summer electrofishing and winter angling were euthanized and their gut contents examined. The summer samples showed smaller (4-12 in) pikeminnow fed primarily on insects, medium (12-18 in) pikeminnow on a mix of insects and unidentified small fish, and large (18+ in) pikeminnow almost exclusively on crayfish. Interestingly, the winter gut contents were largely empty. Notably, we did not collect diet samples during the spring smolt outmigration period, when a greater degree of overlap with juvenile salmon, steelhead, and lamprey is expected.

In 2020, the Wiyot Tribe and Stillwater Sciences, with support from a Technical Advisory Committee, initiated Phase 2 of the project, which will extend through 2023. Key objectives of Phase 2 include: (1) continued population monitoring to evaluate trends in abundance, (2) further testing and refinement of pikeminnow suppression methods and application within the study area, (3) tagging of pikeminnow to track movement throughout watershed and improve abundance estimates, (4) description of age structure and growth patterns of pikeminnow using scale analysis and (5) expanded diet evaluations, including during the spring salmonid outmigration period. Stable isotope diet analysis will be applied to provide information on pikeminnow prey composition over a longer time period (weeks to months) compared with gut contents (hours). After completing the tasks listed above, we will work with key stakeholders to develop an Eel River Pikeminnow Management Plan that integrates information from past studies with new data collected by this project and others. The Plan will: (1) evaluate population-level impacts of pikeminnow predation on native fish in the Eel River, (2) describe the level-of-control and cost required to remove sufficient pikeminnow to result in a meaningful increase in survival and production of native fishes; and (3) make specific recommendations for implementing future pikeminnow monitoring and population control in the Eel River Basin, including best approaches, locations, timing, life-stages, and considerations for adaptive management.

We will be out on the South Fork Eel in the coming months so feel free to stop by and check out what we are doing. We have started to tag pikeminnow with colored Floy tags to help track movement, so keep an eye out and please report if found (Figure 3). Additionally, we are looking for any information on pikeminnow occurrence, movement, or capture techniques (spearfishing is not currently permitted) you may have, especially during the winter and spring months. Please contact Sam Rizza at srizza@stillwatersci.com for more information or to share your pikeminnow knowledge.

Figure 3. Floy tagged Sacramento Pikeminnow. Let us know if you see one!

Shelter Cove

By Jake Mitchell, President Shelter Cove Fishing Preservation Incorporated

Shelter Cove Fishing Preservation Incorporated (SCFPI) is a 501 (c)(3) non-profit dedicated to preserving the fishing heritage of Shelter Cove, CA. Since May 2019, SCFPI has operated the tractor launch, as well as the boat storage yard at Mario's Marina. Although we are excited to begin our 3rd season serving the fishing community here, keeping the launch running is just part of our long-term vision. Over the last 20 plus years the Mario's Marina property has slowly fallen into disrepair.

It has been our mission since our inception to create a functioning marina with facilities to support the fishing community. The Mario's Marina property is privately owned by an overseas owner. This has made it difficult to pursue or create any infrastructure projects thus far. We have been working to try and find ways to get the marina property into public ownership so that we can make the improvements we wish to see. It has been a painfully slow process, but we continue to work towards this goal.

Entering the 2021 fishing season SCFPI has 3 reliable tractors and there will be at least two running on busier days. We are very fortunate to have a tractor mechanic on our board who does a fantastic job of keeping them maintained and operational. The boat launch hours will be from 6:30am- 4:00pm. All trailers must have some form of side bunks or they will not be launched. Everyone must fill out a launch agreement before being launched as well. These are available at our office in the marina and can be filled out ahead of time if you wish. Only one agreement needs to be filled out per year. We recently purchased a flake ice machine, so ice is available to the fisherman. It is not real big, so supply can be a bit limited, but we do our best to keep up. For more information on the tractor launch call 707-986-1400.

SCFPI will be doing a big fish contest this year. There will be three categories: California halibut, Pacific halibut, and salmon. There will be a prize of $500 for each category. The contest will run the duration of the season and there is no limit to the number of fish you can submit. You will need to be signed up before weighing in and sign-up sheets will be in the office.

Information on Klamath Dam Removal and Flows from the Pacific Fishery Management Council

Summarized by Joe Polos, HASA salmon representative.

The PFMC's Habitat Committee (HC) presented information on a couple of issues pertinent to the Klamath River and its salmon resources. The HC report can be found at: https://www.pcouncil.org/documents/2021/04/c-1-a-supplemental-hc-report-1.pdf/

Klamath Dam Removal Update

Efforts supporting the removal of four dams on the Klamath River continue with the actual removal efforts anticipated to begin in January 2023. The Klamath River Renewal Corporation has submitted biological assessments on the project and submitted them to National Marine Fisheries Service and U.S. Fish and Wildlife Service. These agencies will review the assessments and evaluate impacts of the project on Endangered Species Act (ESA) listed suckers and Coho salmon. The agencies will then issue biological opinions on the effects of the project on these species, including any actions necessary to avoid impacts to these fishes. The other major administrative action associated with the project will be conducting the National Environmental Policy Act (NEPA) process. The Federal Energy Regulatory Commission is developing a schedule for the NEPA process which will be the final administrative activity before it can make a final decision on the dam removal project.

All relevant FERC and other documents, including detailed implementation plans, are available at www.klamathrenewal.org under the tab "Resources" then "Regulatory."

Klamath Solicitor Opinions on Klamath Water Management

The PFMC's Habitat Committee updated the PFMC on the issue of Klamath River flows with the following recommendation:

> *The Habitat Committee (HC) recommends that the Council develop a letter requesting that Interior Secretary Haaland withdraw these two Solicitor's Opinions and the subsequent guidance document, in light of clear legal precedents that support lower Klamath River tribal water rights, as well as in-river water obligations which are necessary to support the Klamath River's salmon runs under the ESA and other case law.*

The two Solicitors Opinions referred to in the HC recommendation were released on January 14, 2021, and stated that water stored in the Klamath Project should only be used for agriculture and not to address Endangered Species Act management (lake levels for ESA listed suckers and downstream flows for ESA listed Coho) or tribal trust needs such as flows supporting lower Klamath River salmon populations. The U.S. Bureau of Reclamation, operator of the Klamath Project, developed a guidance document in accordance with these Solicitor Opinions which would reduce downstream flows.

The HC further stated "*Together these documents could greatly reduce the ESA-required minimum flows that are essential for survival of downriver ESA-listed Southern Oregon/ Northern California coho salmon. These flows also support non-listed fall- and spring-run Chinook salmon in the Klamath Basin. Such a reduction in flows could drive these already weakened stocks toward extinction.*"

The Klamath Irrigation District filed a lawsuit stating that any water released for salmon was a violation of their Oregon water rights while the Yurok Tribe and Pacific Coast Federation of Fishermen's Associations sued because the Opinions disregarded tribal water rights necessary to support salmon populations and ignored ESA requirements. The Hoopa and Yurok tribes also requested Secretary of the Interior Haaland to rescind the two opinions and associated guidance document because "they abrogate tribal treaty rights".

During the public comment period on this issue I, as the HASA's salmon representative, provided the following comment concerning the HC's recommendation that the Council write a letter to the Secretary of the Interior.

> *Thank you Mr. Chairman and Council.*
>
> *My name is Joe Polos and I am the salmon representative of the Humboldt Area Saltwater Anglers, our members primarily fish in the California KMZ.*
>
> *We support the Habitat Committee's recommendation that the Council write a letter requesting the Secretary of the Interior withdraw the solicitor opinions and Reclamation's guidance document concerning management of water stored in Upper Klamath Lake.*
>
> *As you are well aware, the poor status of Klamath Basin salmon stocks is severely constraining ocean recreational and commercial fisheries and actions such as those outlined in the solicitors opinions and accompanying guidance document will continue to suppress the production of these stocks.*
>
> *The Klamath fall Chinook minimum natural spawning escapement has not been met in 5 of the last 6 years and it will be 6 of last 7 as we manage under the deminimus fishery rule in 2021.*
>
> *With another low spawning escapement for Klamath fall Chinook expected this year, severely constrained fisheries will continue into the future until inriver flows and habitat conditions are improved. A letter to the Secretary of the Interior requesting the withdraw of these documents is needed to reduce the impacts these policies have on fisheries under the Councils purview.*
>
> *Thank you for the opportunity to comment.*

Prior to the PFMC acting on the HC recommendation it was announced that Secretary Haaland rescinded the opinions and guidance document. Fortunately, this action was taken since the current drought situation in the Klamath is wreaking havoc with juvenile salmon disease problems and further reductions in flows is the last thing they needed.

2021 Spring Groundfish Update

Tom Marking, HASA GAP representative

Well, here we are in the beautiful month of May, the wind is howling, the seas are raging, surf is crashing upon the shores, and we anxious fishers are polishing our boats, waiting for Mother Nature's wind turbine to break down, or run out of fuel.

CDFW is going to try to measure Pacific halibut this year, so hopefully we will get to harvest our full allocation without any reductions due to proxy measurements. We lost considerable poundage last year due to the proxy measurement that did not reflect the smaller size of the halibut we were catching up here off the Eureka area. Hopefully, that will not be an issue this year.

We have maintained our sub-bag for Lingcod at two fish over the years; we are now back to ten fish for Black rockfish. Canary rockfish are rebuilt and we can keep ten in the bag (they were actually rebuilt back in 2006), Yelloweye rockfish are on the rebound and are expected to be rebuilt by 2030, about forty years ahead of schedule, and we can catch Petrale sole year around. And, we have finally gotten back to 30 fathoms of depth after twenty years, and we have all depth in November and December. Fort Bragg gets an increase of ten fathoms to match the Northern Area. This extra depth should help them out and not put so much pressure on the shallow areas.

CDFW has opened the door for the commercial guys to suggest methods on how they can get back into the Rockfish Conservation Area (RCA) prior to Yelloweye being rebuilt. It's a worthy proposition, not without merit, but some of the methods certainly need to be questioned. The hook and line folks want to use vertical lines off the bottom, floats to keep hook off the bottom, etc. (https://www.pcouncil.org/documents/2021/03/f-3-attachment-2-non-trawl-sector-groundfish-area-management-modifications-scoping-discussion-document.pdf/).

Also, there are a number of Legislative actions that might be of interest to some, especially Executive Order 14008 (https://www.pcouncil.org/documents/2021/04/h-3-supplemental-attachment-3-draft-letter-to-the-department-of-interior-on-eo-14008.pdf/, https://www.pcouncil.org/documents/2021/04/h-3-supplemental-attachment-8-revised-draft-letter-to-dr-paul-doremus-on-eo-14008-v2.pdf/) and some of the items related to offshore wind energy (https://www.pcouncil.org/documents/2021/04/c-1-a-supplemental-hc-report-1.pdf/) and aquaculture (Situation Summary (pcouncil.org)).

Hopefully, I will soon see all you fellow deplorable and despicable nuts out on the briny sea.

Tight Lines!

CDFW 2021 Pacific Halibut Press Release

Help CDFW staff collect accurate data to manage the Pacific halibut fishery.

Pacific Halibut Fishery Set to Open May 1

April 27, 2021by ptirawildlife, posted in Fisheries, Fishing (Sport)

The California Department of Fish and Wildlife (CDFW) is pleased to announce the 2021 recreational Pacific halibut fishery will open Saturday, May 1 and remain open until Nov. 15, or until the quota is reached, whichever is earlier. The 2021 Pacific halibut quota for the California sport fishery is 39,260 pounds – approximately the same as the 2020 quota.

While the closing date of Nov. 15 is a new extension to the end of the season, the open dates are not guaranteed and the season could close early if it is determined that the quota has been taken. In 2020, the season closed Aug. 11, when a very successful fishery resulted in the early attainment of the state's limit.

Anglers participating in the Pacific halibut fishery and other recreational fisheries are reminded they may be met at fishing sites by CDFW staff collecting catch and fishing effort information. CDFW appreciates anglers' cooperation and participation in these survey efforts. In the case of Pacific halibut, staff will also be taking length measurements in a safe and physically distanced manner. CDFW highly encourages all recreational anglers to assist with this length data collection effort, as the information will aid with quota tracking and in-season management.

State regulations for Pacific halibut automatically conform to federal regulations set by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) using the process described in the California Code of Regulations Title 14, Section 1.95. Federal regulations for Pacific halibut were published in the Federal Register (86 FR 20638) on April 21, 2021 and took effect immediately.

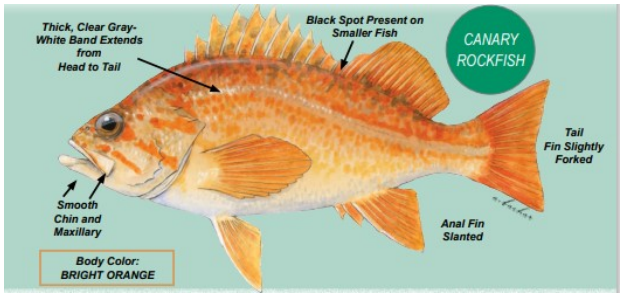
Anglers are always advised to check for updated information when planning a Pacific halibut fishing trip, as a season closure announcement could come at any time. Other regulatory information, including bag/possession limits and gear restrictions, can be found on CDFW's Pacific halibut page. Public notification of any in-season

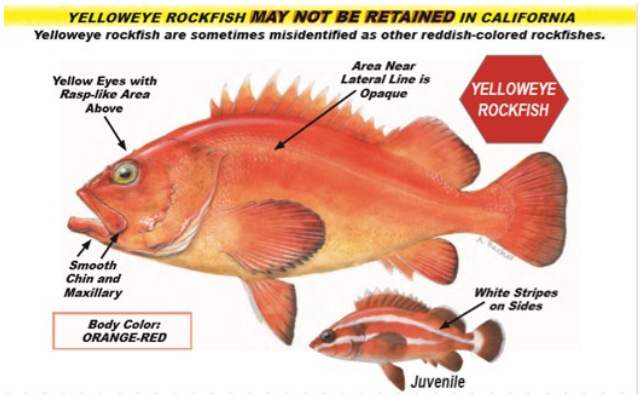
https://cdfgnews.wordpress.com/2021/04/27/pacific-halibut-fishery-set-to-open-may-1/

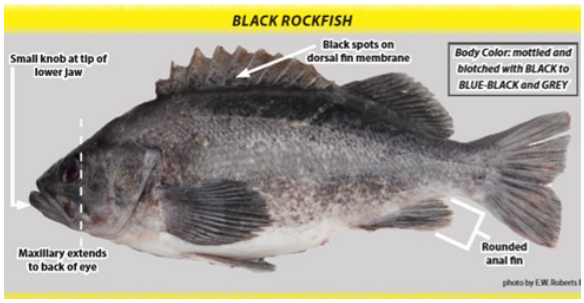
Know Your Rockfish

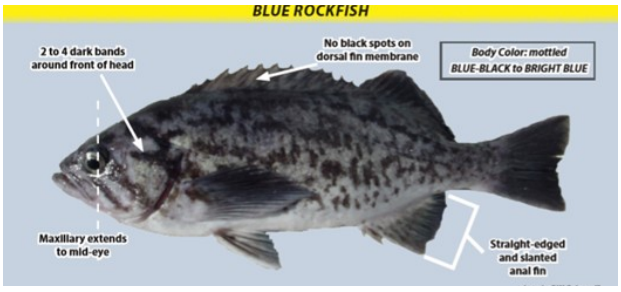
Be sure you know how to identify rockfish, especially yelloweye rockfish, which may not be retained. Also remember to carry and use a descending device when you return rockfish to reduce barotrauma mortality. CDFW has a very helpful identification sheet that should be printed on a color printer and be on board everyone's boat that is rockfishing. In case you don't have it, here is a link to the ID guide: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=138378&inline

You can find the current groundfish regulations at: Summary of Recreational Groundfish Fishing Regulations (ca.gov)









2021 Salmon Season Process

By Joe Polos, HASA Salmon Representative

The annual salmon season process kicked off on February 25, 2021, with the salmon information meeting hosted by California Department of Fish and Wildlife. The expectation that poor Chinook salmon spawning escapements in 2020 would lead to severe constraints on 2021 ocean salmon fisheries was soon realized during the presentations. As in 2020, the poor status of Klamath Basin fall Chinook was going to be the primary constraint to ocean salmon fisheries in Oregon and California with ocean salmon fisheries managed under the "deminimus" fishery provision of the salmon management plan (See the spring 2020 HASA newsletter for more detail on the salmon season setting process). Additionally, information presented at the March Pacific Fishery Management Council (PFMC) meeting showed that the harvest impact models used to develop and evaluate ocean salmon seasons were underestimating harvest impacts for Sacramento and Klamath Chinook salmon in the past five years (Table 1). From 2018-2020, the Klamath impacts were greatly underestimated by 107% to 157%. To address this issue, the ocean harvest models were updated to use a shortened dataset that reflected the higher impacts. The overall result of this update would be less days on the water per fish caught. So with the low Klamath abundance and updated harvest model, it was going to be a tough season setting process.

Table 1. Preseason and postseason ocean harvest rates for Sacramento River (SRFC) and Klamath River (KRFC) Chinook salmon, 2016-2020.

	SRFC Ocean Harvest Rate				KRFC Age-4 Ocean Harvest Rate		
Year	Preseason	Postseason	Post/Pre		Preseason	Postseason	Post/Pre
2016	0.413	0.447	1.082		0.084	0.091	1.086
2017	0.328	0.516	1.572		0.031	0.041	1.330
2018	0.291	0.448	1.538		0.115	0.238	2.070
2019	0.504	0.637	1.264		0.160	0.356	2.227
2020	0.420	0.566	1.347		0.088	0.226	2.573

Under the "deminimus" fishery provision, the targeted inriver natural spawning escapement for adult Klamath fall Chinook was established at 31,574; the inriver tribal fisheries were allocated 50% of the harvestable surplus and the inriver sport fishery was allocated 15% of the non-Tribal harvestable surplus. With these conditions established, the development of the 2021 ocean salmon harvest alternatives commenced.

Representatives on the PFMC Salmon Advisory Subpanel (SAS) discussed sharing of Klamath impacts between Oregon and California. To get the ball rolling, an initial sharing of Klamath impacts of 62.5% for California and 37.5% for Oregon was agreed to with the understanding that changes could be made as seasons were developed and modified throughout the March meeting. The California and Oregon delegations then went their separate ways to develop three alternatives that utilized their respective allocation of Klamath impacts. After several iterations of alternative modifications and modeling impacts, three

alternatives for the 2021 ocean salmon fishery were developed, agreed to by the SAS and adopted by the PFMC to go out for public comment. The California share of Klamath impacts ranged from 63.4% to 64.8% (Table 2) and the recreational share of the California impacts ranged from 22.2% to 22.6% (Table 3).

Table 2. Percent Klamath fall Chinook impacts in California and Oregon fisheries by alternative.

	Alternative 1	Alternative 2	Alternative 3
California	64.8	63.4	63.4
Oregon	35.2	36.6	36.6

Table 3. Percent Klamath fall Chinook impacts in California fisheries by alternative.

	Alternative 1	Alternative 2	Alternative 3
Recreational	22.2	22.2	22.6
Commercial	77.8	77.8	77.4

The dates for the California 2021 ocean recreational salmon fishery alternatives by management zone are presented in Table 4. The accounting for Klamath fall Chinook impacts stops after August 31 and any impacts occurring after that date are counted against next year's harvest impacts. These are referred to as "credit card fisheries". The fall credit card recreational fisheries in the management zones to the south of the KMZ typically have very small Klamath impacts (there were none in 2020) so these were recommended for the 2021 alternatives. A fall credit card fishery was not recommended for the KMZ because the impacts in September can be large as the Klamath Chinook are heading for the river and could create a large impact debit for next year.

Table 4. California recreational salmon fishery alternatives by management zone for 2021.

	Alternative 1			Alternative 2			Alternative 3	
Management Zone	Start	End		Start	End		Start	End
KMZ-CA	28-Jun	31-Jul		26-Jun	31-Jul		1-Jul	31-Jul
Fort Bragg	28-Jun	31-Oct		26-Jun	24-Oct		24-Jun	3-Oct
San Francisco	28-Jun	31-Oct		1-Jul	24-Oct		24-Jun	3-Oct
Monterey	3-Apr	30-Sep		3-Apr	19-Sep		3-Apr	6-Sep

Across the three alternatives, the KMZ recreational fishery was projected to take 35%, 38% and 31% of the Klamath fall Chinook impacts for the California recreational fishery, respectively (Table 5). The San Francisco zone was projected to impact 44%, 41%, and 47% for the three alternatives, respectively. The Fort Bragg and San Francisco Zones took large reductions in their time on the water as they have typically opened in April.

Table 5. Distribution (percent) of California Recreational Impacts of Klamath Fall Chinook by Alternative and Management Zone.

Management Zone	Alternative 1	Alternative 2	Alternative 3
KMZ	35	38	31
Fort Bragg	20	20	21
San Francisco	44	41	47
Monterey	1	1	1

The April PFMC meeting got off to a slow start with minimal discussions on how to move forward and develop a final alternative. The issue of dividing Klamath Chinook impacts between California and Oregon became pretty contentious. The Oregon representatives wanted California to reduce its Klamath impacts so that Oregon could increase some of its time on the water to meet 62.5%/37.5% split that was initially used at the March. The California representatives were not in favor of this since the alternatives that went out for public comment (and were approved by the SAS members and PFMC) did not include this sharing scenario and that the initial agreement was just to get the season development process underway and was not a firm agreement. This was primarily a battle between the California and Oregon commercial fisheries and the recreational folks were pretty much on the sidelines. Once the seasons for the commercial fisheries were adjusted there were slight adjustments to the California recreational fisheries.

For the KMZ, we kept the same number of days as Alternative 1 which was presented at the public meeting on March 23, but the start date was moved back a day to June 29 and August 1 was added so we have the whole last weekend of the season. The Fort Bragg season was shortened by a day. Their start date was also moved back to June 29 to be the same as the KMZ due to some law enforcement concerns of having different start dates for these two areas. Two days were added to the SF management area so they will start on June 26.

The percentage allocation of Klamath fall Chinook impacts for the 2021 ocean salmon season were:

- California/Oregon split: 64.3%/35.7%
- California Recreational/Commercial split: 22.8%/77.2%
- CA Recreational by Zone: KMZ (34%), Fort Bragg (20%), San Francisco (45%) and Monterey (1%).

We in the KMZ greatly benefited from the support of the California commercial fishery and recreational representatives to the south. Even though it was another challenging year due to Klamath Chinook constraints there was a lot of great collaboration among California recreational and commercial fishermen to craft the season that we have. And not enough can be said about the great support and guidance we received from the CDFW staff. Hopefully, one of these years we can get back to more than a month of salmon fishing when problems of habitat and flow management in the Klamath Basin are sufficiently addressed.

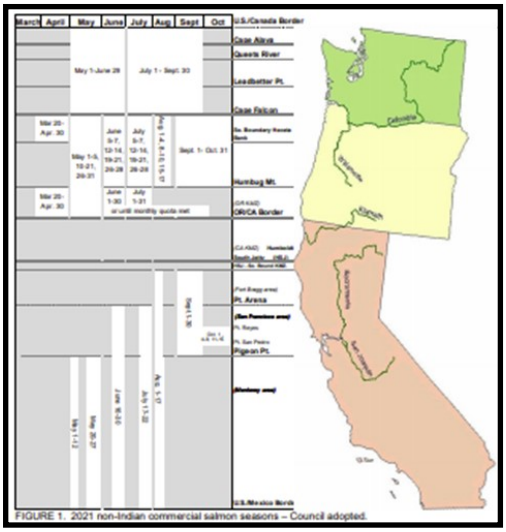


FIGURE 1. 2021 non-Indian commercial salmon seasons – Council adopted.

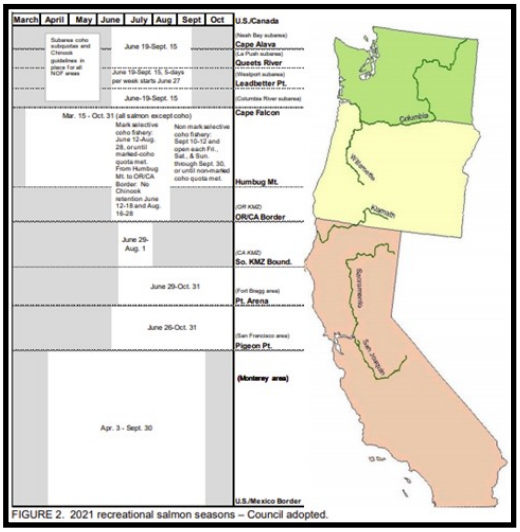


FIGURE 2. 2021 recreational salmon seasons – Council adopted.

Mercury and Selenium Testing of Sport/Food Fishes from Nearshore Ocean Waters of Humboldt County, California

By Ross Taylor, HASA Board Member, Dungeness Crab Task Force Representative

In 2018, Humboldt Baykeeper completed its first study of mercury levels of sport/food fishes from Humboldt Bay. This study collected tissue samples from seven species of fish and several species of shellfish commonly caught, harvested, or grown in the bay. The local response to the 2018 study was large and positive, with results disseminated in report form, radio interviews and on a one-page handout that was printed in three languages: English, Spanish and Hmong. Soon after, numerous saltwater anglers who fish off the coast of Humboldt Bay and Trinidad were inquiring about the mercury levels in commonly caught fish from our near-shore ocean waters, such as Cape Mendocino, Patrick's Point and Reading Rock. A second California EPA grant was awarded to Humboldt Baykeeper for testing methylmercury levels in tissue samples collected from 70 fish caught in nearshore ocean waters out of Eureka and Trinidad and for testing a subset of 30 tissue samples for selenium levels. Selenium was tested because of published research suggesting that selenium in molar ratios >1.0 may offset or buffer the harmful effects of methylmercury from the consumption of fish.

Fish consumption is the major route of methylmercury exposure in the United States. At lower levels of exposure, more subtle symptoms in adults are numbness or tingling in the hands, feet, and/or around the mouth. Developing fetuses are particularly sensitive, and can experience decreases in learning abilities, language skills, attention and/or memory function. Methylmercury accumulates in the body, and magnifies in larger, older animals that eat higher on the food chain. The most vulnerable populations are people who eat a lot of fish, including recreational and subsistence fishermen and their families, as well as people with low incomes that fish to feed their families. Another group at risk includes people who can afford to eat a lot of expensive fish such as tuna and sushi. People who eat fish that they catch also tend to consume larger portions than amounts used in health advisories.

The near-shore ocean fish species tested were Lingcod, Cabezon, Quillback rockfish, Copper rockfish, Vermillion rockfish, Canary rockfish, Bocaccio, Pacific halibut, and California halibut. Fish samples were caught with sport-fishing tackle following current CDFW regulations. The goal was to obtain at least nine tissue samples from each species so that results could be used for establishing updated Office of Environmental Health Hazard Assessment (OEHHA) health advisories for the Northcoast region of California. Tissue samples were analyzed by an independent laboratory for methylmercury and a subset was analyzed for selenium; the results were reported as concentrations in parts per million (ppm). The methylmercury thresholds used were consistent with Advisory Tissue Levels (ATLs) developed by OEHHA and their advisory process considers both the health benefits of fish consumption and the risk from exposure to the chemical contaminants found in fish.

For Lingcod, a total of 13 fish were caught and ranged in size from 6.2 pounds and 28 inches to 25.6 pounds and 40 inches. These 13 Lingcod had an average methylmercury content of 0.951 ppm with values ranging from 0.171 to 2.840 ppm. Four of these Lingcod exceeded OEHHA's "do not consume" threshold of 1.31 ppm.

Nine Quillback rockfish were caught and ranged in size from 1.5 pounds and 14 inches to 4.2 pounds and 18 inches. The Quillback rockfish had an average methylmercury content of 0.922 ppm with values ranging from 0.128 to 1.410 ppm. Three of these Quillback rockfish exceeded OEHHA's "do not consume" threshold of 1.31 ppm.

Nine Vermillion rockfish were caught and ranged in size from 2.2 pounds and 15 inches to 9.7 pounds and 23.5 inches. The Vermillion rockfish had an average methylmercury content of 0.596 ppm with values ranging from 0.153 to 1.420 ppm.

Ten Copper rockfish were caught and ranged in size from 0.84 pounds and 11 inches to 3.8 pounds and 17.8 inches. The Copper rockfish had an average methylmercury content of 0.695 ppm with values ranging from 0.205 to 1.910 ppm.

Five Cabezon were caught and ranged in size from 4.5 pounds and 19.5 inches to 9.5 pounds and 25.5 inches. These five Cabezon had an average methylmercury content of 0.549 ppm with values ranging from 0.344 to 0.825 ppm.

Three Bocaccio were caught and ranged in size from 4.1 pounds and 21.3 inches to 11.2 pounds and 29.5 inches. The Bocaccio had an average methylmercury content of 0.521 ppm with values ranging from 0.109 to 1.050 ppm.

Nine Canary rockfish were caught and ranged in size from 0.8 pounds and 14 inches to 3.6 pounds and 21.5 inches. The Canary rockfish had an average methylmercury content of 0.238 ppm with values ranging from 0.087 to 0.620 ppm.

Nine Pacific halibut were caught and ranged in size from 7.1 pounds and 26 inches to 49 pounds and 48.5 inches. These Pacific halibut had an average methylmercury content of 0.153 ppm with values ranging from 0.063 to 0.355 ppm.

Although this second mercury study was focused on nearshore ocean fish species, tissue samples were collected from three additional California halibut, so when combined with the previous study there was a nine-fish average available for an OEHHA health advisory. The nine California halibut ranged in size from 4.8 pounds and 22 inches to 36 pounds and 45.5 inches. These California halibut had an average methylmercury content of 0.146 ppm with values ranging from 0.051 to 0.328 ppm.

For establishing OEHHA advisories, a minimum of nine tissue samples are required. For the nearshore ocean mercury study, at least nine samples were analyzed from the following species:

- Lingcod – 13 samples with an average methylmercury content of 0.951 ppm.
- Quillback rockfish – 9 samples with an average methylmercury content of 0.922 ppm.
- Copper rockfish – 10 samples with an average methylmercury content of 0.695 ppm.
- Vermillion rockfish – 9 samples with an average methylmercury content of 0.596 ppm.
- Canary rockfish – 9 samples with an average methylmercury content of 0.238 ppm.
- Pacific halibut – 9 samples with an average methylmercury content of 0.153 ppm.
- California halibut – 9 samples with an average methylmercury content of 0.146 ppm.

The ultimate purpose of this study was to provide the public who fish the near-shore ocean waters of northern California with information about mercury levels in the fish they and their families catch and consume. The guidelines provided are based on OEHHA's recommended number of servings per week for two groups: (1) women under the age of 45 and children and (2) women older than 45 and men older than 18 years of age (Table 1). Because of the lower ATLs set for women under the age of 45 and children, the following species should be avoided, regardless of fish size: Quillback rockfish, Vermillion rockfish, Copper rockfish and Cabezon (Table 1). In accordance with the lower ATLs set for women under the age of 45 and children, the following species, based on size, should also be avoided: Lingcod greater than 28 inches in length or more than 10 pounds in weight and Bocaccio greater than 10 pounds in weight (Table 1). For women over age 45 and adult men, the only fish to avoid because of methylmercury levels >1.31 ppm are Lingcod greater than 35 inches in length or greater than 20 pounds in weight (Table 1). Based on average methylmercury levels, Pacific halibut and California halibut are good alternatives to most rockfish species (Table 1). Portion sizes are also important when navigating Table 1 or similar health advisory guidelines for fish consumption.

The selenium results showed that molar ratios of selenium to methylmercury were between 1.0 and 2.0 for the five species where both substances were tested. However, the utility of developing health advisories or risk assessments based on the molar ratios is unclear and lacks consensus in the peer-reviewed literature. Regardless, if selenium in marine fish can offset the harmful effects of methylmercury, a consumer would have to know the molar ratio before consumption, which is impractical. Our results confirmed that four of the 30 tissue samples (13.3% of the samples) tested for selenium had molar ratios less than 1.0, in combination with high levels of mercury. Two of the eight Lingcod (25% of the samples) tested for selenium also had molar ratios less than 1.0, suggesting that avoidance of consuming larger Lingcod is a prudent decision.

We recommend that methylmercury levels of commonly caught and consumed near-shore ocean fish from the Northcoast are periodically tested and compared to previous results. This type of testing would allow the tracking of mercury levels over time and would also provide data for updates of OEHHA fish consumption guidelines. We compared our average methylmercury levels to data reported by the California Surface Water Ambient Monitoring Program in 2012. For Lingcod, Quillback rockfish and Cabezon collected in 2009 and 2010, the average methylmercury values were all below 0.44 ppm versus our average values of 0.951, 0.922 and 0.549 ppm, respectively. These comparisons strongly suggest that average methylmercury levels in some species have increased over the past decade, including a doubling of the average values for Lingcod and Quillback rockfish.

The full report, as well as the 2018, report are available at the following link: www.humboldtbaykeeper.org

For more information on other species also see the article in the HASA spring 2020 newsletter (HASA-Spring-2020-Newsletter-final.pdf (humboldtasa.com)).

Table 1. Average mercury levels in parts per million (ppm) for fish species caught in Humboldt Bay and/or near-shore ocean waters and guidelines for consumption.

Species and/or Size	Average Mercury Levels, ppm	Recommended Servings* per Week, Women <45 & Children[1]	Recommended Servings* per Week, Women >45 & Men[1]
Pacific Halibut <35 inches or <12 pounds	0.082	2	6
California Halibut	0.146	2	4
Lingcod <28 inches or under 10 pounds	0.218	1	3
Canary Rockfish	0.238	1	2
Pacific Halibut >35 inches or 12-50 pounds	0.241	1	2
Bocaccio Rockfish <10 pounds	0.257	1	2
Cabezon	0.549	**AVOID**	1
Vermillion Rockfish	0.596	**AVOID**	1
Copper Rockfish	0.695	**AVOID**	1
Lingcod 28-35 inches or 10-20 pounds	0.727	**AVOID**	1
Quillback Rockfish	0.922	**AVOID**	1
Bocaccio Rockfish >10 pounds	1.05	**AVOID**	1
Lingcod >35 inches or >20 pounds	1.644	**AVOID**	**AVOID**

*Serving sizes: adults = 8 ounces uncooked (4 ounces cooked); children = 4 ounces uncooked (2 ounces cooked).

[1] Office of Environmental Health Hazard Assessment's Nov. 2017 Advisory Tissue Levels https://oehha.ca.gov/media/downloads/fish/report/atlmhgandothers2008c.pdf

California Current Ecosystem Status Report, 2021

By Joe Polos, HASA Salmon Representative

The National Oceanic and Atmospheric Administration (NOAA) develops an annual status report on the California Current Ecosystem (CCE). The California Current is the dominant current flowing south along the west coast of North America from southern British Columbia to Baja California and is the eastern portion of the Central Pacific gyre which circulates water in the north Pacific Ocean. It is a cold water current and, combined with the seasonal coastal upwelling can, provide highly productive conditions that support a wide variety of marine life which, in turn, support an assortment of fisheries.

As part of the Pacific Fishery Management Council's Fishery Ecosystem Plan, NOAA provides a summary report on the status of the California Current Ecosystem. The full NOAA California Current Ecosystem report is comprehensive covering the following topics: Climate and Ocean Drivers, Focal Components of Ecological Integrity (copepod biomass, Euphausiid Size, Harmful Algae Blooms, Regional Forage Availability), Coastal Pelagic Species, Salmon, Groundfish, Highly Migratory Species, Marine Mammals, Seabirds, Human Activities (fishing, aquaculture, non-fishing human activities), and Human Wellbeing.

The general findings are summarized in the bullets below taken from the report and presented in the graphic at the end of this article. There is so much information in both the summary and comprehensive reports that I recommend you at least take a look at the summary report and if something really peaks your interest dive into the comprehensive report.

- West Coast research efforts in 2020 were heavily impacted by the COVID-19 pandemic. While care should always be exercised in interpreting ecosystem indicators, that is especially true this year.

- 2020 saw a transition from El Niño conditions and positive PDO signals to La Niña conditions and a negative PDO for the first time in many years. These conditions are generally associated with higher productivity in the CCE.

- The second largest marine heatwave observed in the North Pacific occurred in 2020, but mostly stayed offshore.

- The system experienced low snowpack, drought, and catastrophic wildfires in 2020.

- Strong winter upwelling preceded the start of an average to above-average upwelling season, providing a good nutrient supply to the base of the food web.

- Foraging conditions appeared to be above average, based on measures of the zooplankton community, continued high abundance of anchovies, and production of offspring at seabird and sea lion colonies.

- Signs of concern included widespread harmful algal blooms, continued presence of species associated with warmer waters, and mixed outlooks for returns of Chinook salmon in 2021.

- Fishery landings and revenues appear to be substantially lower in 2020 compared to 2019, and the COVID-19 pandemic is one of many possible contributing factors.

- Reports include several analyses of coastal communities, revenue dynamics, and fishing networks that may help us understand how fishing communities respond to change.

Sources:

2021 California Current Ecosystem Status Report to the Pacific Fishery Management Council: I1a IEA Team Report 1 (pcouncil.org)

NOAA Ecosystem Status Report of the California Current for 2019-20: Ecosystem Status Report of the California Current for 2019-20: A Summary of Ecosystem Indicators Compiled by the California Current Integrated Ecosystem Assessment Team (CCIEA) (noaa.gov)

Dessert to Finish Off Your Favorite Fish Dinner - Fresh Strawberry Pie

- Cooked regular or graham cracker crust
- Fresh strawberries (sliced)
- 1 1/2 cups water
- 3/4 cup sugar
- 2 heaping tablespoons of corn starch
- 3 ounces strawberry jello mix
- Cool whip

Fill the pie crust with sliced strawberries. Heat water, sugar and cornstarch in a saucepan until it starts to become clear and thick. Remove from heat and mix in jello. Immediately pour over the strawberries. Cool in refrigerator. Generously top pie with cool whip when cooled. Optional – add a few more sliced strawberries atop the cool whip.

Notes from Newsletter Manager: In our continuing quest to make this newsletter more interesting to our membership we will continue to ask for article ideas and pictures from the HASA membership. I can be reached at jcphasa@gmail.com. The deadline for submission of materials for the 2021 Summer newsletter deadline will be somewhere around mid-August. Please contact me if you have any question.

We are also are looking for additional advertisers for the HASA newsletters. Our newsletter is sent out to hundreds of anglers each quarter and posted on our website, so it is a good place to advertise your business. Email hasa6191@gmail.com if you or a colleague is interested in advertising in our newsletter; we can provide rates for different sizes of ads from business cards to full page.

Thanks, Joe

Englund Marine's Annual

Halibut Contest

Prizes For The Top Three (3) Fish!

RULES

1. No entry fee or pre-registration required.
2. ALL entries must be weighed by an Englund Marine employee.
3. Contest Runs from May 1st until quota is filled.
4. Need not be present to win.
5. Limited to one entry per person, per day.
6. Englund Marine reserves the right to disqualify ANY entry without notice.

See store for further details.

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