HUMBOLDT AREA SALTWATER ANGLERS

A VOICE FOR SALTWATER SPORTFISHERS

2016 WINTER NEWSLETTER

Good News for Pacific Halibut - Not So Good for Salmon

Klamath Dam Removal
Reading Nautical Charts
New Board Members

Much more

See Inside…..

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.

HASA - PO Box 6191
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Officers will be elected at the next Board meeting, Wed. March 2nd at Scott's office, 980 7th St. Arcata at 6:30. Everyone is invited to attend.

All photos and articles in this issue are donated by HASA members and interested parties.
Submission ideas and photos should be sent to longfish@humboldt1.com. Comments are always welcome. Send to hasa6191@gmail.com

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

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This is issue #28

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Presidents Message

By Scott McBain

First, I would like to welcome our four new HASA board members (Dirk Pederson, Jed Douglas, Michael Davies-Hughes, and Eric Stockwell, see page 23), I hope they find it as enjoyable and rewarding as I have. I also wanted to thank our outgoing board members (Pamlyn Milsap, Eric Justesen, Gene Morris, and Lonnie Dollarhide) for their service and contributions to HASA over the years, they have really helped make HASA more successful and effective. We have also added a new HASA salmon representative (Bob Smith, aka RBob, see page 16), who will continue to work closely with Jim Yarnell and others on salmon fishery management issues. We owe a big thanks to Ben Doane for his role in representing HASA on fishery management issues, his contributions are greatly appreciated.

As summarized in this newsletter, there is a mixture of bad news and good news for the 2016 and future fishing seasons for North Coast anglers. There will be some changes coming in 2017/18 for our rockfish season and/or bag limits due to the need to reduce black rockfish harvest, yet there may be some additional opportunities for greater depths and retention of canary rockfish and petrale sole. Additional allocation of Pacific halibut by the IPHC should improve our 2016 halibut season. Salmon fishing will be challenging for the next few years, and hopefully a benefit of the substantial winter rains will be to help in the recovery of our anadromous fishery in the coming years.

As a reminder, the 2016 HASA banquet will be held on Saturday, April 30, 2016, 6:00-9:00 pm at the Arcata Community Center, 321 Martin Luther King Drive in Arcata (next to Health-Sport), so mark your calendars if you haven't done so already. Tickets will soon be available at many outlets, from board members, or you can e-mail us at hasa6191@gmail.com to obtain tickets. The annual banquet provides nearly all of the resources for our annual operations, including representation at fishery management meetings, economic surveys, HSU research, and other efforts to support our saltwater angling opportunities, so please come and continue to support HASA's efforts.

Lastly, we are attempting to improve our membership by providing two different ways for you to become a member. First, for $25, you can become a member and receive a HASA T-shirt, HASA sticker, and a HASA avatar on the Humboldt Tuna Club. Or you can become a member simply by filling in your name and address on the admission ticket for the HASA banquet in April, which will enter you into a drawing for the door prize, as well as HASA sticker and avatar on the Humboldt Tuna Club. Either way, your joining HASA is critical to improving our voice for representing North Coast saltwater anglers, which will be critically important in the coming years, Best of luck in the coming year!

MARINE RESOURCE EDUCATION PROGRAM

By Tom Marking

The Gulf of Maine Research Institute (GMRI) has developed an educational program to better inform sportsmen, managers, legislatures and those interested in Fishery Management and Science of the how and why of the Council Management Process. Tim Klassen, Dan Wolford (PFMC Commissioner) and I were invited to attend a scoping meeting last week in Portland. The Group is funded by the Packard and Betty Moore Foundation. That got my antennae up since those were the players in the Marine Life Protection Act out here in California some years back. We spent a day and a half discussing the merits of the program and what our emphasis would be and who might be interested in attending and participating in lecturing at the sessions.

The Program is strictly an educational program developed in the Maine area to try to bridge the gap of knowledge and understanding between anglers, managers, scientists and legislative types. To their credit, those attending seem really impressed, so they are branching out to other areas of the country to spread this program. They have done this for 12 years (always on the East Coast) and have about 700 people who have attended the program. The program is two sessions of about three days each. There is a module on science and another on management. The modules appear to be very informative and their purpose is to bring understanding and a more cooperative environment between the anglers and the management folks. To that end they bring all the stakeholders in the process together to meet and talk about their fishery and build relationships between them to foster better science and communication. It sounds like a laudable goal.

The meeting ended on a high note with the West Coast exhibiting a strong interest to implement the process out here. The GMRI folks are the resource staff to set the program up, but all the participants and presenters would be from the West Coast. Their long term purpose is to get new blood into the Fishery Management Council process and encourage interested persons to attend these meetings and get involved in fishery management. With that in mind they will be advertising to those interested in applying for this program in the near future. They intend to have a science session in San Diego in May and a second session on management in Portland in October of this year. The attendees will be from all the three Pacific states with a mixture of scientists, biologists, sports anglers, commercial fishers, managers, and a few other selected folks of varying interests. Their hope is to get an ongoing program started to build an alumni of about 600 folks out here to get more involvement in the Fishery Management Process in future years. They need to get new blood into the process.

If you are interested, Google the Gulf of Maine Research Institute and you can download their modules of the programs they have put on so far. They are very informational and geared to the angler. If you are interested in attending a program such as this, an invitation will be posted on their website in the near future to select participants. We were all impressed with the program and think it will be of great value to those that attend.

A Look At California's Recreational Pacific Halibut Fishery

by Melanie Parker, Environmental Scientist, California Department of Fish and Wildlife

How'd We Get Here?

So how did the Pacific halibut fishery end up the way it did in 2015? It was the culmination of work that occurred over several years by state, federal, international, and constituent input. Prior to 2008, the Pacific halibut fishery in California was fairly limited, and catches did not exceed the quota that was shared between California and part of Southern Oregon. Beginning in 2008 catches for Pacific halibut began increasing and peaked in 2013 at 43,254 net pounds [net pounds are fish that have been headed and gutted; the International Pacific Halibut Commission (IPHC) uses net pounds to manage the entire fishery]. During the time between 2008 and 2014 annual catches exceeded the federally set quota (about 6,000 net pounds), but there was no expectation for catches to remain under the quota, and no mechanism to hold catches to the quota. As a result of these increased catches and consistent quota exceedance, there was pressure for California to take action to prevent future catches from exceeding the quota. The first step in this process was to provide California with its own allocation and quota separate from Southern Oregon.

In November 2014, the Pacific Fishery Management Council approved changes to the recreational Pacific halibut fishery in California for 2015 that included an increased allocation percentage which would provide a higher quota. The agreement which resulted in an increased allocation percentage to California required decreases to the allocations for the recreational fisheries in Oregon and Washington and the commercial fishery. An integral part of reaching this agreement was the expectation that the California Department of Fish and Wildlife (CDFW) would manage the recreational fishery to ensure the quota would not be exceeded. This included changes to season dates, new inseason weekly catch tracking, and a provision for an early season closure by the National Marine Fisheries Service (NMFS) if catches were projected to reach or exceed the quota before October 31.

The California Recreational Fisheries Survey (CRFS) supplies monthly catch estimates for all marine finfish including Pacific halibut. Producing CRFS estimates requires information on catches and effort from several sources. As a result, there is a five- to eight-week lag time between when the catch data are collected and when catch estimates using angler effort are generated. In order to conduct weekly tracking of Pacific halibut, CDFW developed customized tracking by using preliminary sample information directly from CRFS weekly field reports. These preliminary CRFS reports were used to generate a Preliminary Projected Catch amount of Pacific halibut in net pounds. The weekly Preliminary Projected Catch is a "proxy" value used to approximate catch during the lag time, until the corresponding monthly CRFS estimates become available. Once CRFS estimates for a month become available this value replaces the weekly projected catch amount for that month.

How'd We Do in 2015?

Well, that depends on who you ask.

From a fishery management perspective, the inseason tracking and closure mechanism worked efficiently. Taking into consideration the varied needs of diverse constituents, season dates were chosen based on the need to keep catches from exceeding the quota. CDFW conducted outreach in person, online, and via a call hotline to educate the public about the new and very different season dates and inseason monitoring process. The new inseason monitoring process functioned as planned, with weekly preliminary catch projections being used to gauge catches prior to the CRFS estimates being produced. When the catch projections showed that the quota was close to being reached during the August fishing period, NMFS in consultation with CDFW and the IPHC determined an early fishery closure was necessary to prevent exceeding the quota. Additional outreach was conducted by CDFW to inform anglers about the early season closure, and no fishery violations were reported by law enforcement after the closure. Final season catch estimates became available in mid-November and show that 24,906 net pounds (Table 1), 99 percent of the 25,220 net pound quota, were taken during 2015.

Month	Net Pounds Accrued	
	CDFW Projection	CRFS Estimate
May	~~310~~	378
June	~~1,551~~	1,783
July	~~11,684~~	13,768
August	~~8,892~~	8,977
Total	**24,906**	
Quota	**25,220**	

Table 1. Preliminary 2015 Pacific halibut catch estimates in California by month. CDFW projection values for May through August are provided in strikeout to illustrate the process of replacing the projections with CRFS estimates when those estimates became available five to eight weeks later.

How'd You Do in 2015?

Again, that depends on who you ask. Due to the more limited open fishing dates and prevailing weather conditions some anglers may not have fished as often as they expected. The early season closure also impacted those who had planned to fish during the last few days of the August fishing period, or any of September or October. Poor weather also seemed to prevent anglers form fishing during the May and June open periods. For a week and a half in July, and August the weather was great and many anglers who were able to fish during those time periods were very successful in catching Pacific halibut.

How Did The 2015 Fishery Look Compared to Previous Years?

Unsurprisingly, changes to California's recreational Pacific halibut season length have coincided with changes in average estimated daily catches. The 57 open fishing days during 2015 was almost a 70 percent decrease compared to the annual number of open fishing days from 2008-2013 (Figure 1 and Figure 2). From 2008 to 2013, an average of 60 to 200 pounds of Pacific halibut was caught per day (Figure 2). In 2014, the season length was reduced by one month (August closed) from 184 days to 153 days, and average daily catch was just over 200 pounds per day. In 2015, when the season length was further reduced to only 57 days, average daily catch rose steeply to over 400 pounds per day (Figure 2). The abrupt increase in the average daily estimated catch from 2014 to 2015 may be an indication that the recreational Pacific halibut fishery in California is transitioning to a derby style fishery, much like many areas of Oregon and Washington's recreational Pacific halibut fisheries. In addition, it indicates that even with increased effort on open days, there are a lot of successful Pacific halibut anglers out on the water.

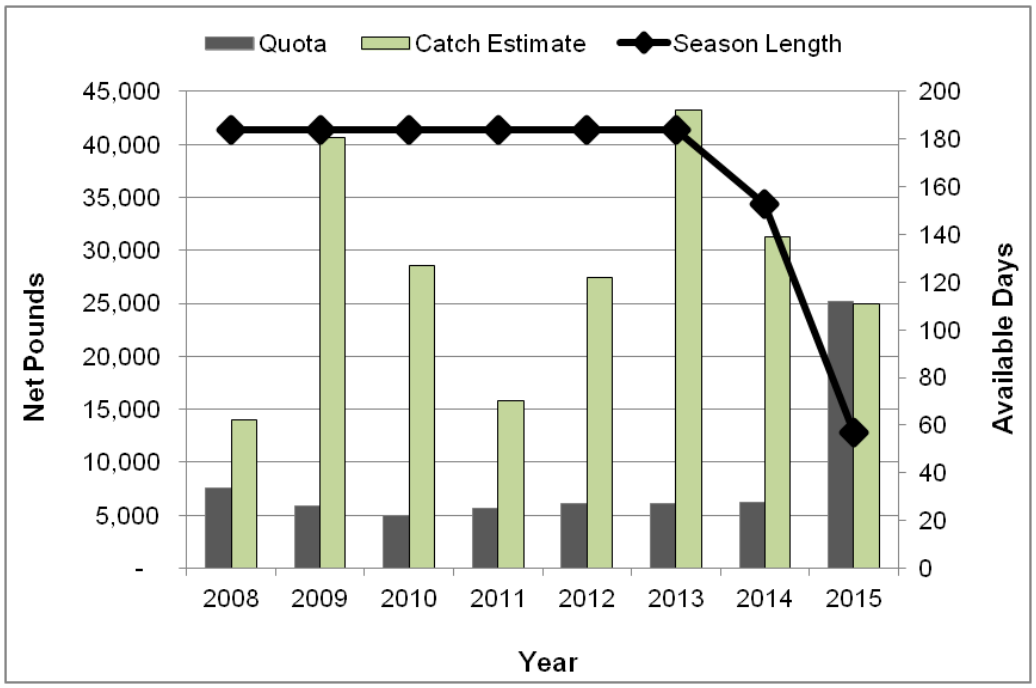


Figure 1. California allocation, catch estimates, and number of days open to fishing by year from 2008-2015. Quota prior to 2014 was shared with Southern Oregon. Prior to 2015, there was no mechanism for inseason action if the quota would be exceeded. Catch data for 2015 are preliminary.

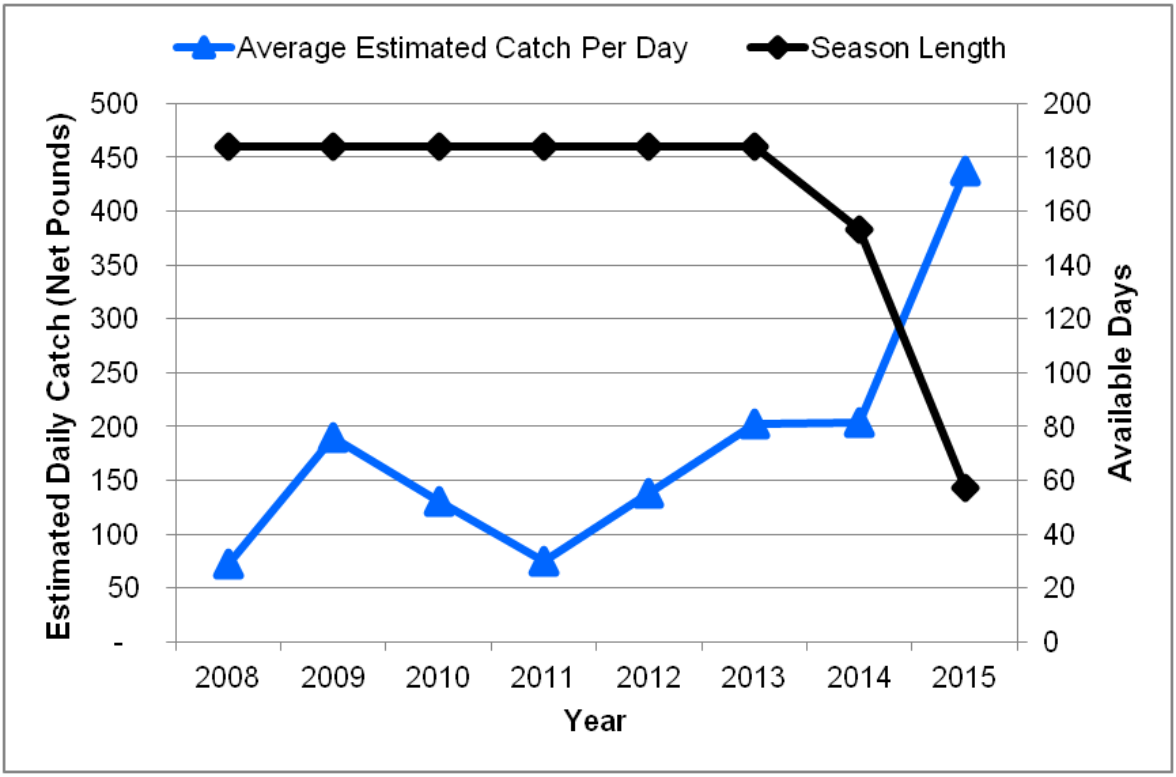
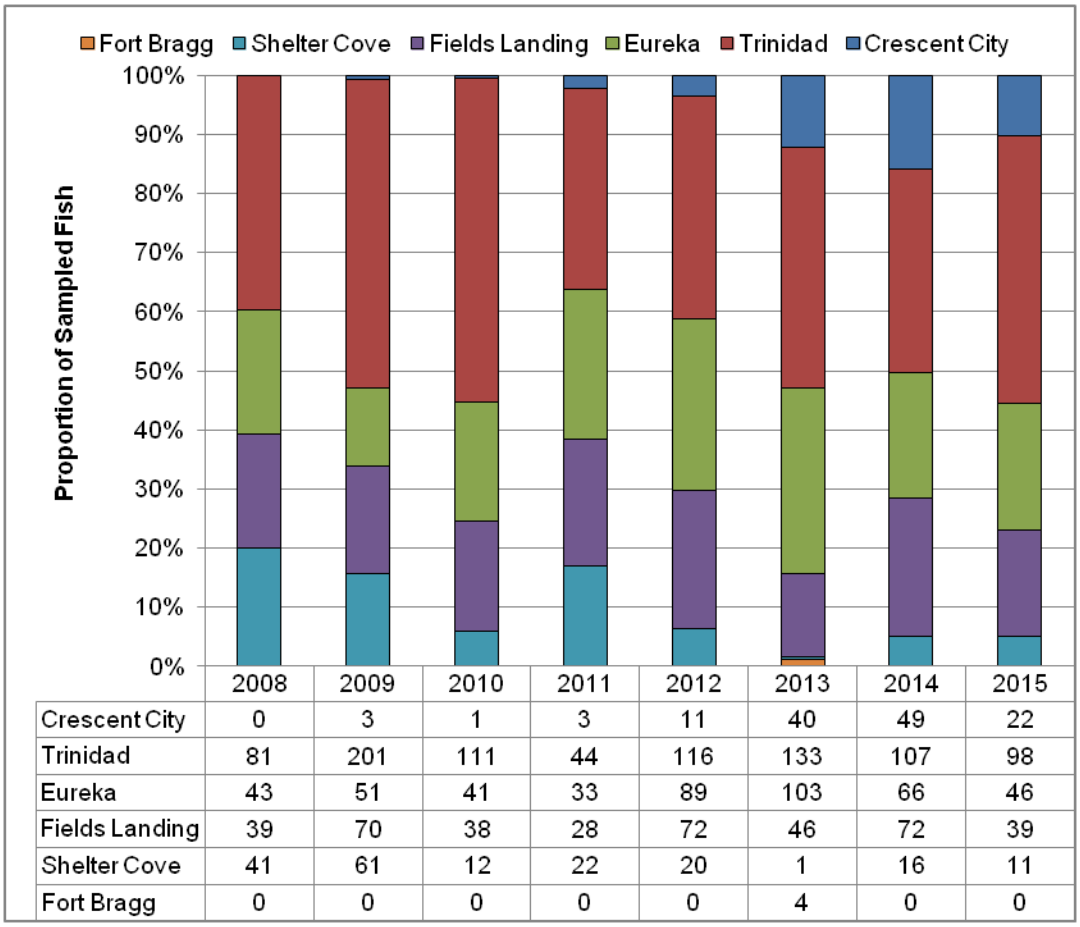


Figure 2. Average estimated volume (net pounds) of Pacific halibut caught per day and number of open days per year from 2008-2015. Data are from CDFW and CRFS. Catch data for 2015 are preliminary.

Despite the recent changes in catch and fishing effort, the proportion of fishing activity by general locations of catch in California has remained fairly steady. From 2008 to 2015, 85 percent of the sampler-examined Pacific halibut have come from three port areas: Trinidad, Eureka, and Fields Landing (Figure 3). The amount of sampling coverage in each area during each year has remained the same.



	2008	2009	2010	2011	2012	2013	2014	2015
Crescent City	0	3	1	3	11	40	49	22
Trinidad	81	201	111	44	116	133	107	98
Eureka	43	51	41	33	89	103	66	46
Fields Landing	39	70	38	28	72	46	72	39
Shelter Cove	41	61	12	22	20	1	16	11
Fort Bragg	0	0	0	0	0	4	0	0

Figure 3. Annual proportion of sampler examined Pacific halibut (chart) and number of individual sampler examined Pacific halibut (table) by port area in California. Data from CRFS.

CRFS data also provides information on sizes of fish encountered by samplers. CRFS samplers measure the length of fish they examine, and weigh the fish (time permitting). From 2013 to 2015, sampler examined Pacific halibut ranged from 20 to 58 inches long; approximately half of the measured Pacific halibut have been between 30 and 40 inches long (Figure 4). During this same time period, sampler examined Pacific halibut weights have ranged from less than five net pounds up to 78 net pounds (Figure 5); approximately half of the fish weighed each year are between 10 and 25 pounds net weight.

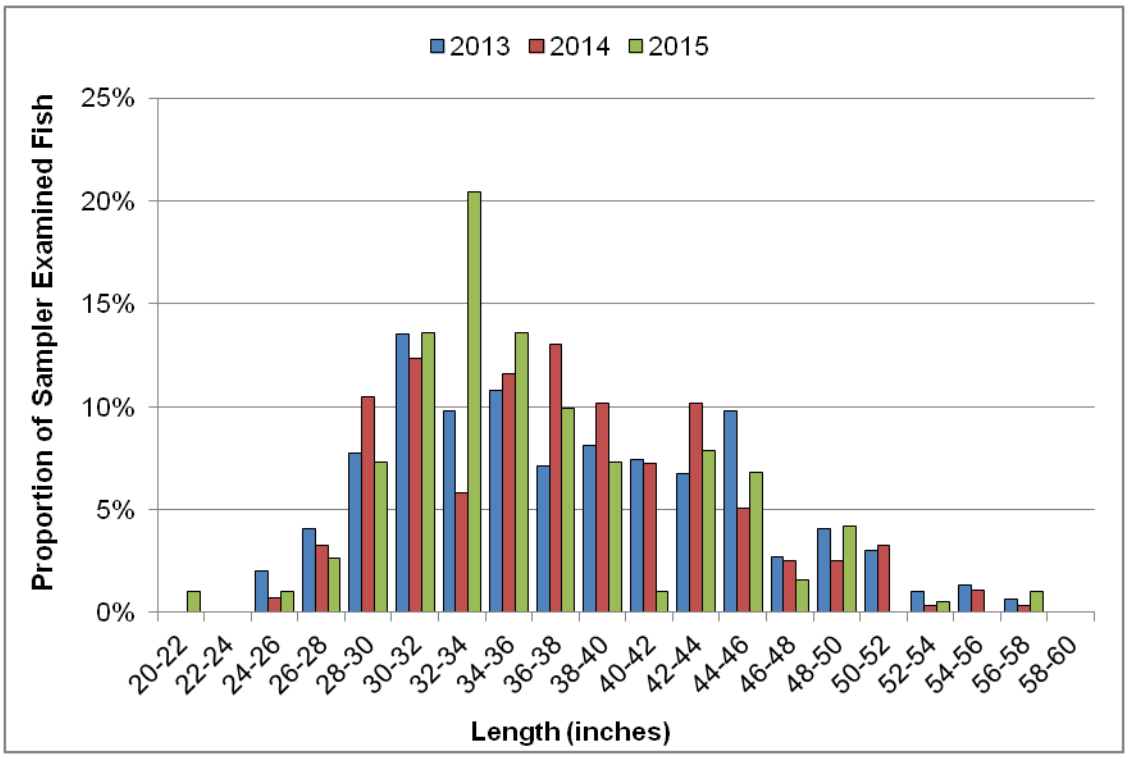


Figure 4. Lengths (inches) of sampler examined Pacific halibut by year from 2013-2015. Data are from CRFS.

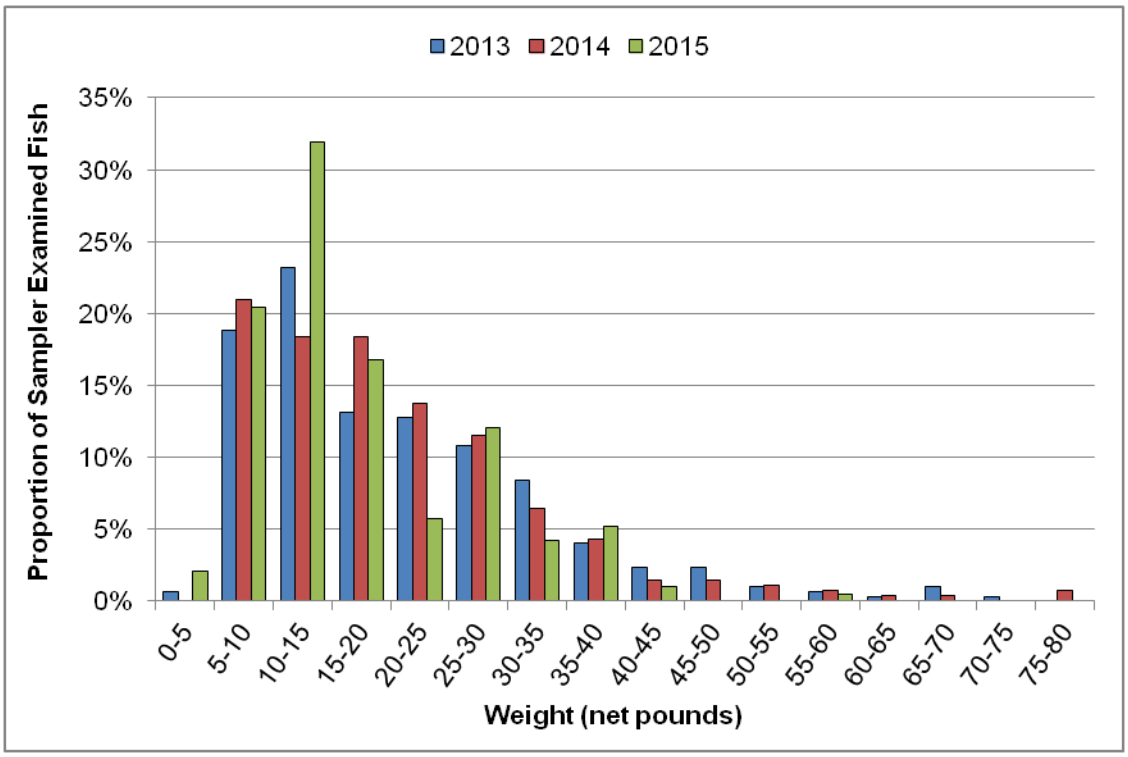
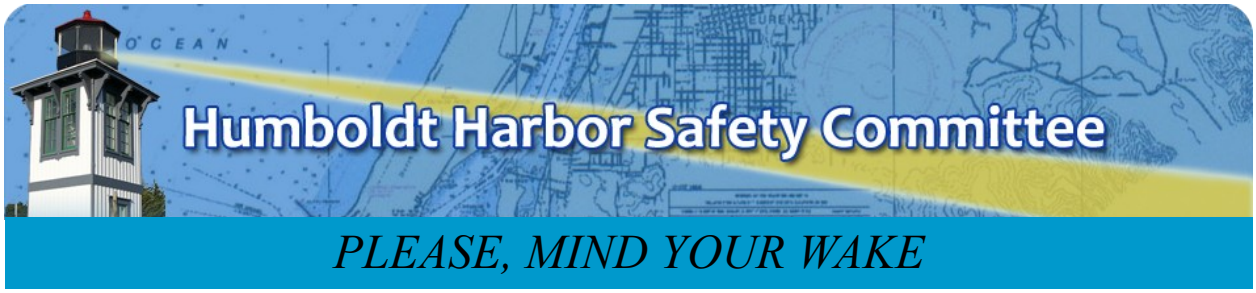


Figure 5. Weights (net pounds) of sampler examined Pacific halibut from 2013-2015. Data are from CRFS.

Where Are We Going?
On January 29, 2016, the IPHC set the Area 2A (Washington, Oregon, and California) catch limit at 1,140,000 net pounds, which resulted in a 2016 California recreational Pacific halibut quota of 29,640 net pounds – an increase of about 4,000 pounds compared to the quota in 2015. However, based on previous years' fishing effort, CDFW predicts that the 2016 quota did not increase enough to allow for any meaningful increase to the season length. Therefore, the season dates in 2016 will be the same as in 2015, with the same inseason tracking and monitoring and provisions for early season closure if the quota is projected to be attained.

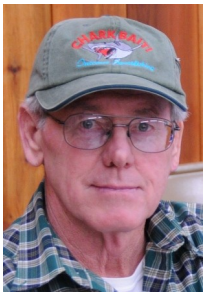
While continued limitations to season lengths and fishing opportunities are not pleasant, CDFW knows that holding catches to the quota will continue to demonstrate a commitment to responsible management of the fishery now and in the future. This commitment should result in greater opportunities at the Pacific Fishery Management Council to bargain for continued increases to our allocation and work towards receiving a more fair and equitable allocation.

For more information about the Pacific halibut fishery in California, and weekly catch updates during the season, please visit CDFW's Pacific halibut webpage at: https://www.wildlife.ca.gov/Conservation/Marine/Pacific-Halibut.



ROCKFISH AND HALIBUT SEASON 2016

By Tom Marking GAP Sports Rep



HALIBUT:

The North Coast will see a slight increase in Halibut this summer. At the IPHC meeting in Juneau last week, the Commission yielded to the pressure put on them by the advisory bodies and the Tribes and again gave us an increase over the Science recommended amount. It's an interesting process and it goes on all week. The Staff first modeled all the survey results from the summer. Then they prepared a Risk Table that is based upon harvest intensity, population biomass, spawning biomass and the probability of where any given amount of harvest poundage will likely cause an increase or drop in one and three years of biomass based upon their decision. It's a composite table blended with four different models, two short term and two long term models. Why four? Because none of them by themselves is accurate for any extended period of time; hence a blended model to lower the risk of the decision making process.

Based upon the current Harvest Policy Regulations the staff recommended the harvest intensity to be at 51%, or a fishery harvest level (FCEY) of 26.2 metric tons (mt) for 2016. The total mortality would be at 38.7 mt when research, by-catch kill and commercial fishery wastage is all added in. But that is just a starting point. The advisory groups all meet and lobby with each other and hammer out what they think should be the allocation for all the different sectors, based upon what they are seeing on the fishing grounds, the past harvest levels and of course the politics of the process (and that is an interesting sideline). Not to belabor this discussion, the Conference Board (CB) consisting of all the harvesters (commercial, longline, charters, recreational and subsistence fishermen) made recommendation for 31.7 mt for the fishery harvest. The Processors Group (PAG) recommended 32.6 mt for the FCEY. On the risk table, these higher harvest levels would suggest about 70% chance that we would be overfishing and the stock would drop in both a one year and three year period. The Commission listens to all these recommendations and goes behind closed doors and announces Friday morning what they have all agreed upon. The Commissions divides the baby (so to speak) and modifies the request of the CB, the PAG with the Risk Table and decided upon a level a few million pounds more, namely 29.89 mt for the FCEY. That would put the total mortality about 42 mt, which is pushing the Risk Table above the 50% recommendation. That relates to about a 63% chance that we will harvest more than we should. The Risk Table shoots for 50% as their target, so that you have a 50% chance of being over or under the science suggested amount of harvest. Realize that because the annual recruitment is not known for about 7 years until they grow big enough (26 inches) to be picked up in the survey, it's a decision in the blind. Is there science involved? Yes, of course, but it's definitely NOT an exact science. There are many unknowns is this process due to migration, recruitment, by-catch mortality and unknown mortality.

The wrinkle in all of this is Canada, the 2B region. Canada doesn't like the assessment decisions, doesn't agree with the allocation (15.3%) of the harvest biomass and votes as a block against all the other sectors; and they have 50% of the voting power at the Commission. Effectively, they can stonewall the process and extort more than their fair share, and that's exactly what they do. They bully the USA commissioners into giving them a few more million pounds than the science suggests they should get and that creates heartburn for the Alaskans to the north of them. It's not a friendly process when all is said and done.

2A Allocation and harvest amounts: The Pacific States were well represented with Tribes and California having a goodly number of folks sitting at the table. The Tribes have Consultation Rights with the Commission, since they are a Nation unto themselves, and put the pressure on the Commission that 2A is not getting a proper share of the fish. Additionally, the survey in 2A had some very high poundage results, surprisingly so in fact. Additionally, the California area below the 39 line was increased to add 2,000 square nautical miles to the 2A area, so that our density multiplier provides more poundage. The Risk Model suggested 2A for a 1.02 mt allocation (FCEY), the Tribes wanted 1.32, the CB suggested 1.33mt and the PAG suggested 1.42 mt. The Commission settled upon 1.14 mt, a 170,000 lb increase over last year. **The California portion of that comes to 29,620 lbs (25,220 lbs was the 2015 allocation), so we will get about 4200 lbs more this year.** This is based upon the 4% of the non-tribal allocation formula. The 2A harvest allocation has increased from 2.1% to 2.4% to the current 2.88% of the survey biomass amount due to the new surveys and area extension into California. We are headed in the right direction, but we still have more work to do to get our 4% elevated to 7-8% of the non-tribal portion.

The Season Structure will stay the same as last year with the 1st to the 15th of May, June, July and August open for Pacific Halibut. If there are still halibut to be caught after August 15th (not likely), upon September 1st the season is open until the allocation is harvested or October 31.

ROCKFISH SEASON AND BAG LIMIT:

The rockfish season dates and bag limits should stay the same as last year from a brief conversation I had with CDFW Staff at

the time of this writing. The black rockfish biomass is still a concern to them, based upon the Stock Assessment done in 2015. It's probable that they may reduce the harvest level from last year's 400 mt amount (that is sports and commercial). With the reduction from 10 to 5 black rockfish in the bag limit for 2015, the harvest was reduced from well over 230 mt to about 184 mt according to the rec-fin harvest levels. Considering in 2014 we harvested 186 mt over the sports share of the allocation (about 230+186 mt) the restriction in bag limit had a dramatic effect in harvest reduction. Bear in mind in 2015, we "borrowed" 75 mt of black rockfish from the commercial sector, but I don't think that will happen again this year. CDFW is preparing for the March PFMC meeting currently, and it's unknown if they will hold a meeting up here in late February or early March to speak with us about the season structure and bag limit. I suspect that for 2016, it will be the same as 2015, but there may be some reductions in the 2017 season. That's all I can tell you at the moment.

OTHER GROUNDFISH:

Lingcod fishing was terrific last year, and that should be the same for this year. For those with some patience and skills, there are other rockfish to be caught off our coast other than blacks, if you develop the methods to catch them. Coppers, gophers, china, vermilion, blues, greenling and cabezon are healthy and are available, if you can avoid the blacks to get to them. **REMEMBER TO CARRY AND USE A DECSENDING DEVICE IF YOU RETURN ROCKFISH TO REDUCE BAROUTRAUMA MORTALITY.** Hopefully, we can fish petrale at all depths this year, and black cod and whiting will be added to our all depth group. I'm not sure of the status on the petrale, black cod and whiting, but those management changes are in the pipeline for action. With all the changes at the Fish and Game Commission happening over the past few months, I'm not sure of the progress of these requests.

SALMON SEASON?

I wish I could give you some news, but I don't know what is happening yet. The 1st Salmon Report to the PFMC March meeting has yet to be published, but the last two years of smolt mortality can't be of any help. I don't have high hopes for a good season, but we'll know in about another month. The PFMC will set some alternatives for ranges of harvest at the March meeting and send these choices out to the public for review and comment. The final harvest values and season structure will be adopted at the April meeting. CDFW will announce the State meeting fairly soon, that I think is going to be held in Ft. Bragg this year, but don't hold me to that one. I'm basically a groundfish guy, but I thought you might like a head's up on the salmon status.

Update on Pacific Halibut Age, Growth, and Maturation Thesis Project

By: Miki Takada

In the summer 2015 HASA Newsletter, I reported that I had collected 219 Pacific halibut samples, from Northern California and Southern Oregon. Thanks to the assistance of many of you, I ended up with 268 samples by season's end! With such a short season, I was definitely excited that I was able to obtain so many samples.

In the summer 2015 newsletter, I also mentioned that I had traveled to Seattle to learn from the International Pacific Halibut Commission (IPHC) staff how to age Pacific halibut otoliths. This past fall and winter, I aged all the otoliths I collected (Figure 1), and then sent them to Joan Forsberg, an IPHC scientist who reread them, double-blind, to verify my aging. I then used length measurements from the Pacific halibut I sampled to calculate their length-at-age. Comparing Pacific halibut landed in Northern California versus those caught in Southern Oregon, we learned that length-at-age for these two areas was similar, as you can see in Figure 2. For this reason, I pooled the data for these two bioregions for all subsequent analyses.

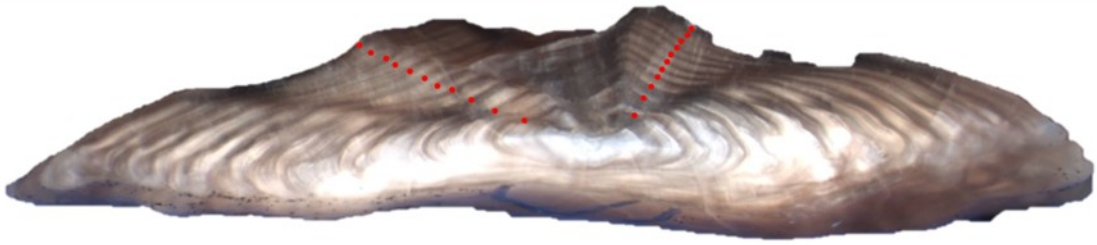


Figure 1. Otolith aged using break-and-bake method (11 years).

We also compared the Pacific halibut caught in 2015 in N. California and S. Oregon with those caught in 2013 and 2014. For 2013, we utilized the data from the HASA-sponsored project conducted by Liz Perkins, another HSU student who completed her Masters thesis last year; for 2014, we used setline data from the IPHC. Our findings show that fish from the 2015 survey were smaller for a given age than those from both the 2013 and 2014 studies, as shown in Figure 3. The two most likely explanations for this finding are that either unfavorable ocean conditions resulted in little growth between 2014 and 2015, or that slower-growing fish from other areas migrated in to our area over the past year. The fact that the outermost annulus (growth ring) of otoliths from fish in 2015 was not spaced more closely than other years suggests that migration rather than ocean productivity may be behind the reduced size-at-age. A very informative next step to verify this would be to investigate the migration patterns of Pacific halibut from our region, potentially using archival pop up satellite tags. After a preset period these tags release from the fish, pop up to the surface, and send data via satellite about the location of the fish at that time as well as the path it took to get there.

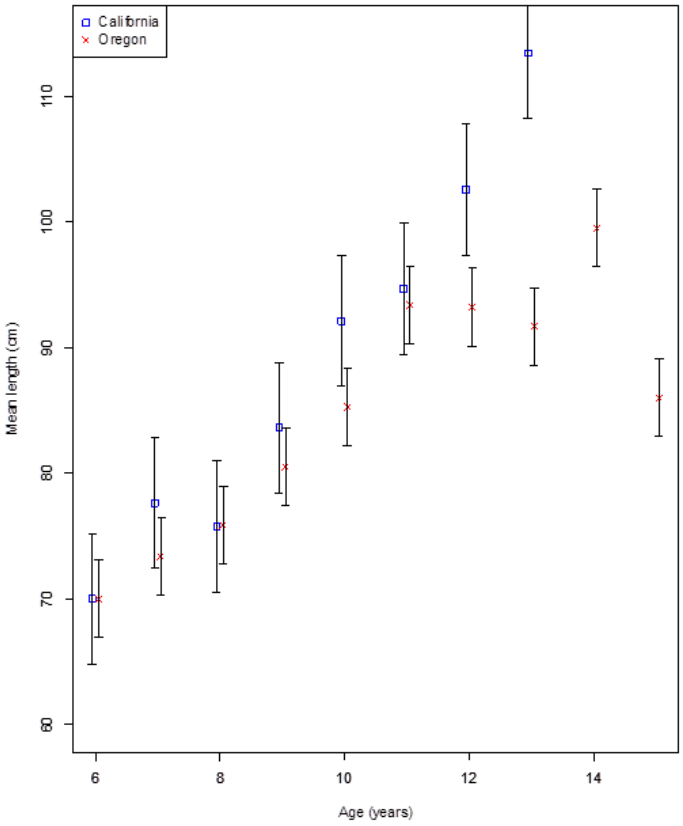


Figure 2. Mean length versus age of Pacific halibut in Northern California and Southern Oregon

Lastly, we compared Pacific halibut caught in 2015 in N. California and S. Oregon with those caught in Washington, the Alaska Peninsula, and the Bering Sea. Again, data from Washington, the Alaska Peninsula, and the Bering Sea were from setline surveys conducted by the IPHC. Results show that fish from the 2015 study were still larger (for a given age) than those from the Alaska Peninsula and the Bering Sea, but similar to those from Washington (Figure 4).

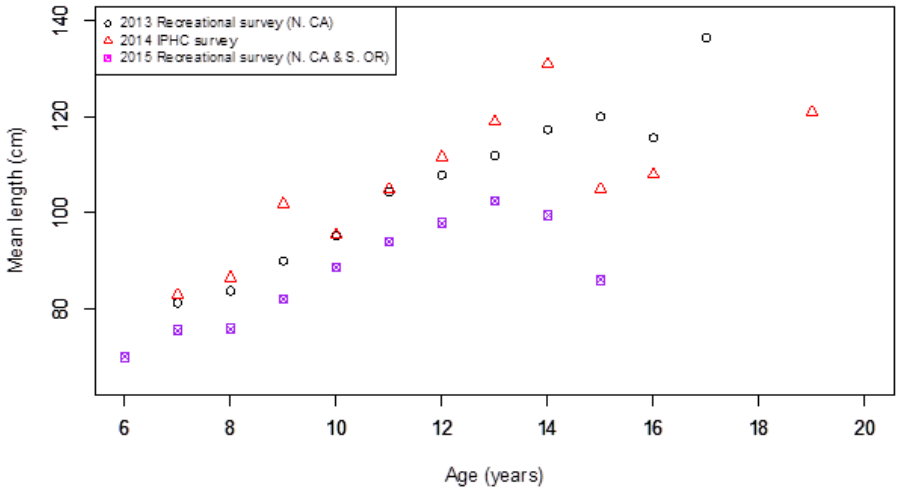


Figure 3. Mean length versus age of Pacific halibut landed in California

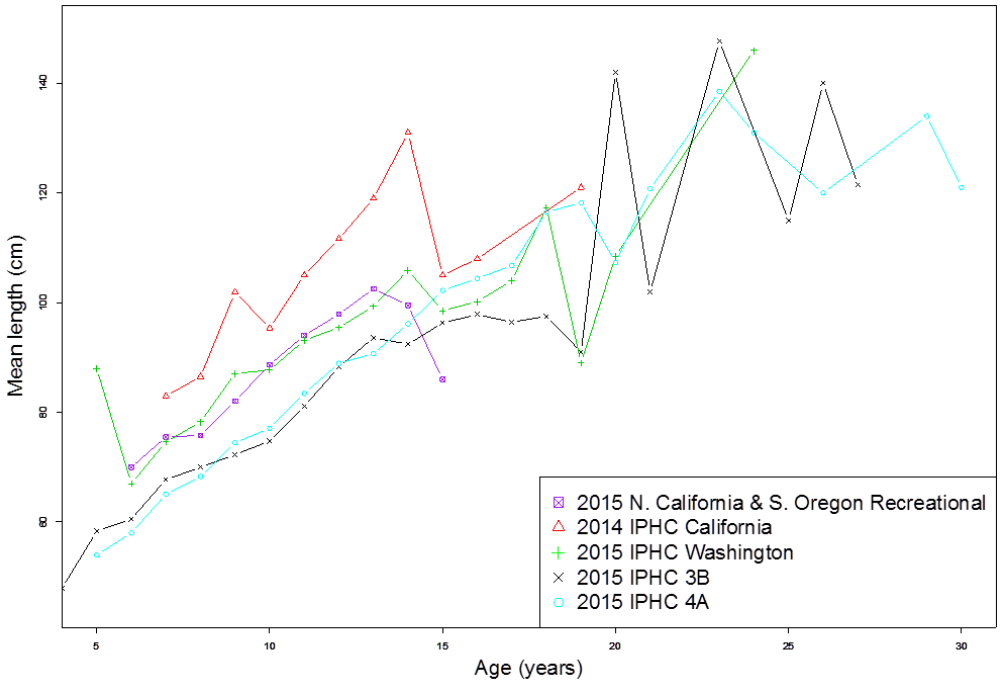


Figure 4. Mean length versus age of Pacific halibut landed in different IPHC areas

I also collected gonad samples from Pacific halibut last year as part of the study, and analyzed them macroscopically (by eye) for sex and maturity. I am now analyzing the ovary samples of females histologically (looking under a microscope at stained, thin sections I have prepared) for maturity to validate the macroscopic staging methods currently used by the IPHC and others. I plan to complete this analysis in the next few months.

I am grateful to HASA and California Sea Grant for their generous support of this research. It is clear that the HASA organization and its members care enormously about the local fish stocks and the health of these fish stocks. This study would not be possible without all the support of HASA and the community of anglers who let me sample their fish.

The Klamath River – Past and …Future? (Part 2)

By Larry De Ridder

In our last issue we looked at some of the issues surrounding the proposed removal of four large dams on the Upper Klamath River, particularly at what an actual dam removal might look like. The government is continuing to hold meetings to gain input from various parties, such as the meeting in Eureka last month.

Though the most recent compromise proposal for dismantling the dams is temporarily dead in the water due to congress' lack of action in 2015, the issue is far from settled. PacifiCorp has resumed work on their re-licensing application while simultaneously negotiating with the federal and state governments for permission to dismantle the dams. The environmental review process has to a large extent been done, and addresses both options plus intermediate alternatives. Since the issue remains active, the following is a look at the various alternatives which have been considered, and which will dominate discussions going forward. Given the 50-year license period at stake, this could be the only opportunity in most of our lifetimes to restore the river and its historic salmon runs. Also, bear in mind that this could be a preview of Eel River options next time the Potter Valley Project is up for review.

Alternative (1) is "No Action/No Project". Essentially this option would have PacifiCorp continuing to manage current operations under successive annual licensing agreements while working through the Federal Energy Regulatory Commission (FERC) long-term re-licensing process. PacifiCorp would continue to coordinate with Reclamation to operate the Klamath Hydroelectric Project in compliance with existing NOAA and USFS opinions issued for the current Operational Plan, likely for the next 50 years. PacifiCorp would continue to fund the operation of Iron Gate Hatchery. This option forces the various managerial agencies to deal with issues independent of FERC, such as new regulations affecting the Total Maximum Daily Load (TMDL) provision of the Clean Water Act issued by the Oregon Department of Environmental Quality (ODEQ), and California North Coast Regional Water Quality Control Board (CNCRWQCB) for impaired water bodies. The expired long-term license didn't address fish passage or downstream water quality. In recent years water quality requirements have become stricter and we better understand how blocking access to upper river basin spawning grounds affects salmon. Legal pressure on those agencies which manage various aspects of the Klamath water storage and delivery system are therefore increased because it probably isn't possible to fully comply with newer environmental laws under the "No Action" option. The water stored upstream of Iron Gate dam would continue to experience annual toxic algae blooms. Seasonal warm flows and a high density of fish carcasses immediately below Iron Gate dam would continue to contribute to fish diseases. Periodic water shortages and water rights disputes would continue.

Alternative (2) is "Full Facilities Removal of Four Dams (Proposed Action)". This option is the goal for most downstream stakeholders, but adversely affects many Upper Basin users. As described in the title, it proposes a complete removal of all four impoundments. It proposes 8 months for site preparation and a partial drawdown of Copco 1, followed by a 12-month period for full drawdown of all four lakes plus facility removal. Removal would include not only the dams, but also power generation facilities, water intake structures, canals, pipelines and buildings. The stated goal is full removal to be completed by December 31, 2020. This option would include full implementation of the Klamath Basin Restoration Agreement (KBRA) and the transfer of a 5th dam (Keno Dam, in Oregon) to the Department of the Interior (DOI). Subsequent activity would include substantial habitat restoration to the previously submerged portions of the watershed, fish reintroduction and management, fisheries monitoring, and actions needed to improve water flow and conditions for fish. Full attainment of the plan would result in long-term water quality improvements and implementation of the KBRA and TMDL goals. Water diversion limits on Reclamation's Klamath Project would be enforced, and deliveries to Tule Lake and Lower Klamath Lake would be formalized. For parties with water rights there would be a voluntary Water Use Retirement Program in the Upper Basin intended to increase flow to Upper Klamath Lake, and various negotiated agreements to resolve outstanding water right contests in the Klamath Basin Adjudication process. And finally, this would require Federal funding of various County and Tribal economic developments to help local governments offset the adverse economic impacts that dam removal would create. The Klamath/Trinity system is California's second largest salmon-producing watershed, and current estimates are the salmon and steelhead runs could increase 81%. Costs to PacifiCorp would be capped at $200 million, and thus taxpayers would have to ante up the majority of the costs. PacifiCorp would be granted immunity from various potential lawsuits.

Alternative (3) is "Partial Facilities Removal of Four Dams". This option would entail removing enough of all four dams to allow free-flowing river conditions and allow for fish passage over each of the remaining partial dams at all times. Under this al-

ternative many of the ancillary structures such as buildings, tunnels and pipes would remain in place. This would require a permanent presence by PacifiCorp or a government agency to prevent unauthorized entry and negate safety hazards. The proposed schedule of completion by the end of 2020 remains the same as Alternative (2). This option is believed to be sufficient to attain the various environmental and water quality requirements.

Alternate (4) is "Fish Passage at Four Dams". This option provides for the construction of fish ladders at each dam. Hydropower generating facilities would remain, though the power generation schedule would change substantially to comply with DOI mandatory flow conditions. Overall power output would be substantially reduced. This alternative would require major changes to both the upstream and downstream sides of the dams to ensure fish are directed away from the power generation structures and toward the ladders, and major spillway modifications to prevent fish taking a "wrong turn" going downstream. This alternative does not satisfy the conditions of the Klamath Hydropower Settlement Agreement (KHSA), and thus assumes the transfer of Keno Dam to DOI would not take place. Most of the adverse conditions described for Alternative (1) would remain. It's estimated that PacifiCorp would lose as much as $20 million per year operating under these conditions.

Alternate (5) is "Fish Passage at J.C. Boyle and Copco 2, Remove Copco 1 and Iron Gate." This plan proposes removal of the two largest dams and fish-ladder modifications to the remaining pair. This option would provide for fish passage, while still retaining some hydropower generation. Since the two largest dams would be gone, it's believed the warm water toxic algae issue would be resolved. This option would still require PacifiCorp to complete the re-licensing requirements it currently faces, but would not meet KHSA requirements to restore a free-flowing river.

There are too many primary and secondary effects listed in the EIR/EIS to cover all of them here, but I'll list a few, followed by the Alternatives with which they are associated. You will see that some of them have the potential to seriously affect the river during the time the condition lasts.

Suspended sediments. The release of 27 million cubic yards of sediment will cause increases to suspended material in the water from the upper reaches all the way to the estuary. This is considered a short-term issue, which in context means less than two years. (Alternatives 2, 3, 5)

Dissolved oxygen. Increases in the sediment load could result in reduced dissolved oxygen throughout the river and into the near-shore marine environment. This is considered a short-term issue. (Alternatives, 2, 3, 5)

Critical and Essential Fish Habitat. Reservoir drawdown and dam removal could adversely affect what are called "Critical" and "Essential" habitats, particularly for coho salmon. Other species affected would be steelhead, pacific lamprey, green sturgeon, freshwater mussels and numerous aquatic macroinvertebrates (insects and crayfish). Proposed mitigation includes trying to protect mainstem spawning, assisting out-migrating juveniles, fall flow pulses, and manually relocating mussels. Short-term issue. (Alt 2, 3, 5)

Algae. Conversion of the reservoir areas to a free-flowing river could cause substantial increases in nutrient levels and nuisance algae levels in low-gradient channel margin areas. Short term issue. (Alt 2, 3, 5)

Air Quality. Vehicle exhaust and blown dust emissions from dam removal activities would dramatically increase numerous regulated emissions, likely beyond Siskiyou County's legally permitted thresholds of significance. Proposed mitigation includes using only model-year 2010 or newer vehicles, and MY 2015 or newer heavy equipment for certain off-road portions of the job. Short term. (Alt 2, 3)

Other considerations include: greenhouse gas emissions/climate change, cultural and historic resources, scenic quality, Yreka water supply pipeline changes, fish collection facilities construction, recreation disruption, noise and vibration, operating and management changes to dam operations, property value changes, local government lost tourism-related revenues, and environmental justice.

For all the details, visit www.klamathrestoration.gov.

Klamath River Basin Fall Run Chinook Salmon Update

Bob Smith (aka RBob) – HASA Salmon Representative

While it's still too soon to really know for sure how the 2016 ocean salmon season will shake out, we are beginning to get a clearer picture of last fall's Klamath River Basin fall-run Chinook (KFRC) return and its potential impact on the upcoming season. Individual "stocks" are one of the ways that Chinook salmon are managed by the Pacific Fishery Management Council (PFMC). Stocks are typically divided up by watershed basins but may include geographic regions (such as Northern California Coastal Chinook). The Klamath stock utilizes the main stem Klamath and all of its tributaries below Iron Gate including the Trinity River Sub Basin. Its contribution to overall ocean abundance plays a critical role in our ocean salmon resource.

For the purposes of this article, we are going to look at two important statistics used to assess the overall well-being of the Klamath stock. The first is the "conservation floor" or the minimum natural area spawner objective. This is the minimum annual escapement of natural spawning fall-run fish that is targeted for maintaining a healthy stock. If a stock fails to meet the minimum spawner objective for three consecutive years, an overfishing review can be triggered. At that point, the stock is considered overfished and additional conservation measures may be implemented. The PFMC attempts to design the fishery to achieve a minimum escapement of naturally reproducing spawning adults.

While not yet official, we do know that the number of returning 2015 KRFC spawners fell well below the conservation floor number of 40,700 fish. How this will affect the upcoming season is unknown at this time. It may trigger some additional "tweaks" to our salmon season in order to ensure adequate spawner escapement next fall.

The other important statistic is the age composition of the returning 2015 fall run. Ocean abundance forecasts for the upcoming season are derived from the composition of returning 2, 3 and 4 year old fish. The most critical number is the returning 2 year olds, or "jacks". Jacks are typically young males, and fall-run jack abundance is a harbinger for 3 year old abundance the following year. Three and four year old Chinook make up the bulk of the Klamath fall-run. While numbers are not yet official, we do know that fewer jacks returned this past fall, and the overall adult Chinook returns fell well below the 2015 USFWS forecast of 120,000 fish. How much less? If 2015 fall age composition numbers are to be used as an estimate, then we would expect the forecasted ocean abundance of 3 and 4 year old fish for 2016 to be roughly 1/3 of what was predicted in 2015. This is obviously not good news, but it doesn't necessarily mean that we won't have a salmon season on the North Coast.

Our North Coast ocean Chinook salmon are made up of a mixture of many stocks. The health and well-being of these stocks have a great deal to do with our season length and bag limit. For the North Coast, the Sacramento River fall-run Chinook (SRFC) abundance forecasts will play a critical role in how much of a season we'll see in 2016. Protecting endangered or imperiled stocks also plays an important role. The Sacramento River winter-run is in serious trouble and will play an important role in harvest opportunity where it's known to occur (south of Point Arena).

Over 20% of all 2015 Klamath River Basin fall Chinook natural spawners returned to the Shasta River

All of the official numbers for Chinook salmon stocks will be presented on March 2nd at the Salmon Informational Meeting in Santa Rosa (see: http://humboldttuna.com/smf/index.php?topic=12417.0) The California Department of Fish and Wildlife will be hosting this public meeting to review preseason Chinook salmon abundance projections, along with a range of probable fishery options. There will be two other important PFMC meetings in this year's regulation process. The first will be in Sacramento on March 9-14 when the season options will be outlined, and the second in Vancouver, WA on April 9-14 where the final seasons will be established. HASA will be represented in the salmon regulation process by veteran Jim Yarnall and myself (the rookie in training). We'll be attending all three meetings and will do everything in our power to ensure that we get an equitable piece of the salmon harvest pie. We'll post updates on the Humboldt Tuna Club (HTC) discussion board throughout this process. Fingers crossed and tight lines!

Spawning Shasta River fall Chinook

Reading Nautical Charts

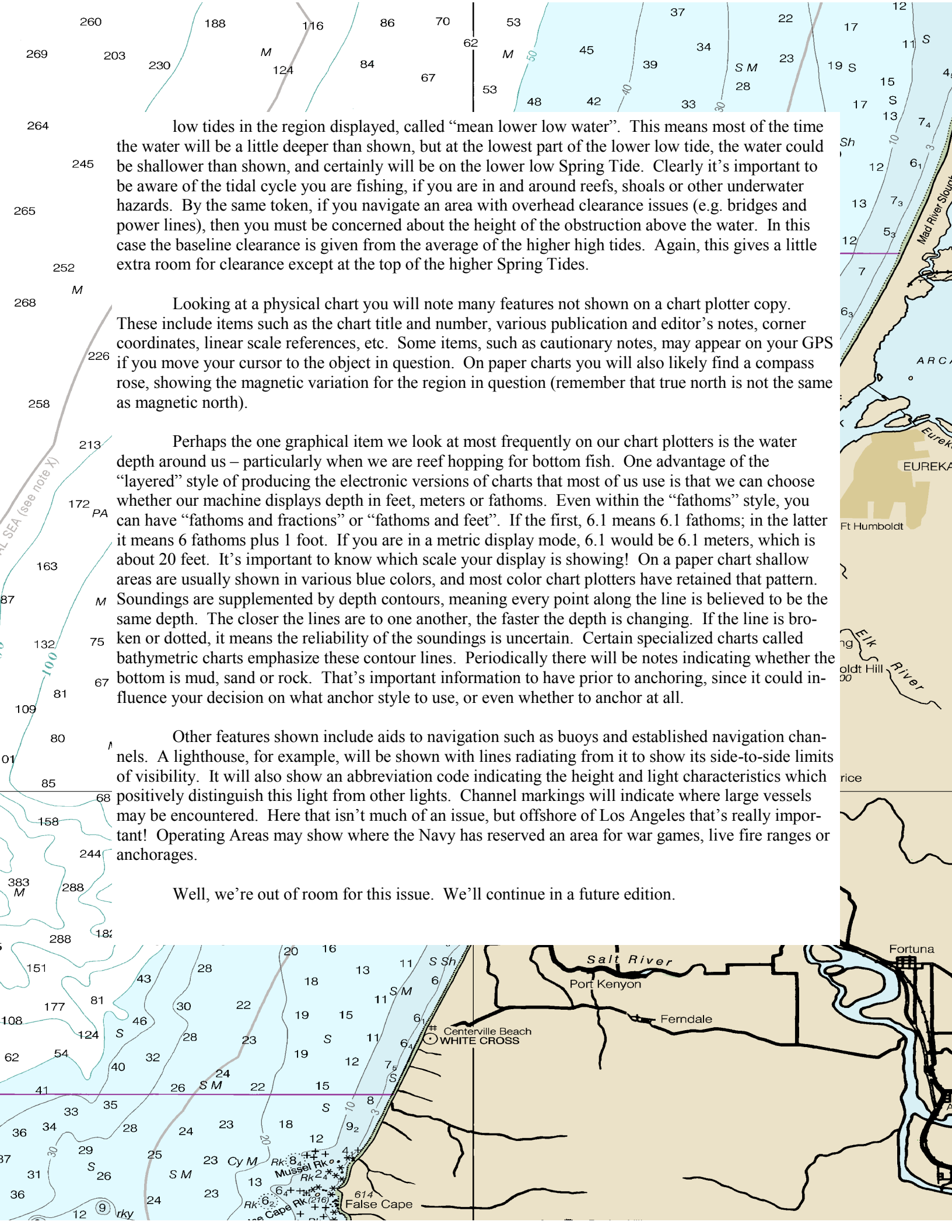
By Larry De Ridder

We've received a couple of requests recently for information to help boaters interpret what their charts display. So, here goes. First off, there are four different types of charts, classed primarily by the area size they cover and the level of detail displayed. They start with Sailing Charts, which generally are drawn to a scale of 1:600,000 or smaller. The shoreline and topography are generalized and really they're only useful if you are navigating offshore for extreme distances (e.g. leaving Eureka and headed for Honolulu). As a practical matter most of us will never need a Sailing Chart. The next level is General Charts. These are intended for coastwise navigation well offshore of most hazards, and are drawn on scales from 1:150,000 to 1:600,000. This level of detail would be useful if you were leaving Eureka and headed for San Francisco, and staying well offshore. Third is Coastal Charts, designed for inshore coastwise navigation, entering and leaving harbors, and navigating large inland waterways. The scales range from 1:50,000 to 1:150,000. The last type, providing the most detail and the smallest area of coverage are Harbor Charts. These provide a great deal of detail intended for navigation and anchorages in harbors and small waterways. The scale is generally larger than 1:50,000.

To provide some sense of size, 1:600,000 means one inch on paper represents 600,000 inches of real world, which equals 50,000 feet, or about 8.23 nautical miles per inch of chart. Note: a nautical mile is 6,076 feet, but for quick math navigators pretend it is 6,000 feet. Thus a Harbor Chart at the 1:50,000 scale means that one inch on paper = about 0.68 nautical mile, or about 0.79 statute mile.

On our GPS/chart plotters, government paper charts have been copied onto a computer chip. The accuracy of your chip display depends on the accuracy of the chart it was derived from, the way it was copied and the number of pixels in your display. Generally, nearshore stuff is very accurate, as it was taken from Harbor and Coastal Charts, but what you see 50 miles out tuna fishing is less accurate, because it was taken from a General Chart. In areas where the coastline changes regularly (say, due to storm-driven sand bars), the government is always playing catch-up with underwater changes, so you can't take your GPS chart's accuracy for granted. There are two basic ways in which chart plotter manufacturers display their data on-screen. One technique is to very carefully exactly copy the chart as a whole. The primary advantage is that nothing is missed or misplaced. However, this can result in a slower scroll, and uses a great deal of memory. It also means that nothing on the chart can be modified without a complete memory update, because everything is one large file. The alternate method is to break the chart data down into "layers" of detail. This allows the user to omit displaying features deemed unnecessary, which speeds the display. For example, if you don't want shoreline navigational features shown, or you are irritated with the horizontal and vertical latitude and longitude lines, you can opt not to display them. However, there is a flip side to this type of display. If there is a "box" displayed somewhere (for example the dump site off Eureka), instead of exactly drawing the box as on the original chart, the computer goes to a particular place with instructions to draw a box of a particular dimension. This is much faster than exactly copying the original paper chart "box". But a side result of this type of reproduction is that sometimes the display isn't as accurate on fine details, because of how the data was stored. Remember also that a chart is a 2-dimensional representation of part of a 3-D world. Thus at the fringes of the chart there will be some distortion. The larger an area the chart covers, the greater the peripheral distortion. And finally, remember that your GPS position isn't always spot-on. The key issue here is never trust your GPS display if it directly contradicts what you can see! Just because a GPS says the reef is 30 feet to the side, if your depth sounder indicates it is below you, exercise extreme caution.

Speaking of depth, it's important to know how that is measured. With the tide continually cycling, clearly the depth to underwater hazards is continually changing. In most 24-hour days we have two tidal cycles, and thus two high and two low tides. One high tide is higher than the other, and one low is lower than the other. So, in a typical day we have a higher high tide, a lower high tide, a higher low tide, and a lower low tide. The baseline for underwater depths is based on the average of the lower



low tides in the region displayed, called "mean lower low water". This means most of the time the water will be a little deeper than shown, but at the lowest part of the lower low tide, the water could be shallower than shown, and certainly will be on the lower low Spring Tide. Clearly it's important to be aware of the tidal cycle you are fishing, if you are in and around reefs, shoals or other underwater hazards. By the same token, if you navigate an area with overhead clearance issues (e.g. bridges and power lines), then you must be concerned about the height of the obstruction above the water. In this case the baseline clearance is given from the average of the higher high tides. Again, this gives a little extra room for clearance except at the top of the higher Spring Tides.

Looking at a physical chart you will note many features not shown on a chart plotter copy. These include items such as the chart title and number, various publication and editor's notes, corner coordinates, linear scale references, etc. Some items, such as cautionary notes, may appear on your GPS if you move your cursor to the object in question. On paper charts you will also likely find a compass rose, showing the magnetic variation for the region in question (remember that true north is not the same as magnetic north).

Perhaps the one graphical item we look at most frequently on our chart plotters is the water depth around us – particularly when we are reef hopping for bottom fish. One advantage of the "layered" style of producing the electronic versions of charts that most of us use is that we can choose whether our machine displays depth in feet, meters or fathoms. Even within the "fathoms" style, you can have "fathoms and fractions" or "fathoms and feet". If the first, 6.1 means 6.1 fathoms; in the latter it means 6 fathoms plus 1 foot. If you are in a metric display mode, 6.1 would be 6.1 meters, which is about 20 feet. It's important to know which scale your display is showing! On a paper chart shallow areas are usually shown in various blue colors, and most color chart plotters have retained that pattern. Soundings are supplemented by depth contours, meaning every point along the line is believed to be the same depth. The closer the lines are to one another, the faster the depth is changing. If the line is broken or dotted, it means the reliability of the soundings is uncertain. Certain specialized charts called bathymetric charts emphasize these contour lines. Periodically there will be notes indicating whether the bottom is mud, sand or rock. That's important information to have prior to anchoring, since it could influence your decision on what anchor style to use, or even whether to anchor at all.

Other features shown include aids to navigation such as buoys and established navigation channels. A lighthouse, for example, will be shown with lines radiating from it to show its side-to-side limits of visibility. It will also show an abbreviation code indicating the height and light characteristics which positively distinguish this light from other lights. Channel markings will indicate where large vessels may be encountered. Here that isn't much of an issue, but offshore of Los Angeles that's really important! Operating Areas may show where the Navy has reserved an area for war games, live fire ranges or anchorages.

Well, we're out of room for this issue. We'll continue in a future edition.

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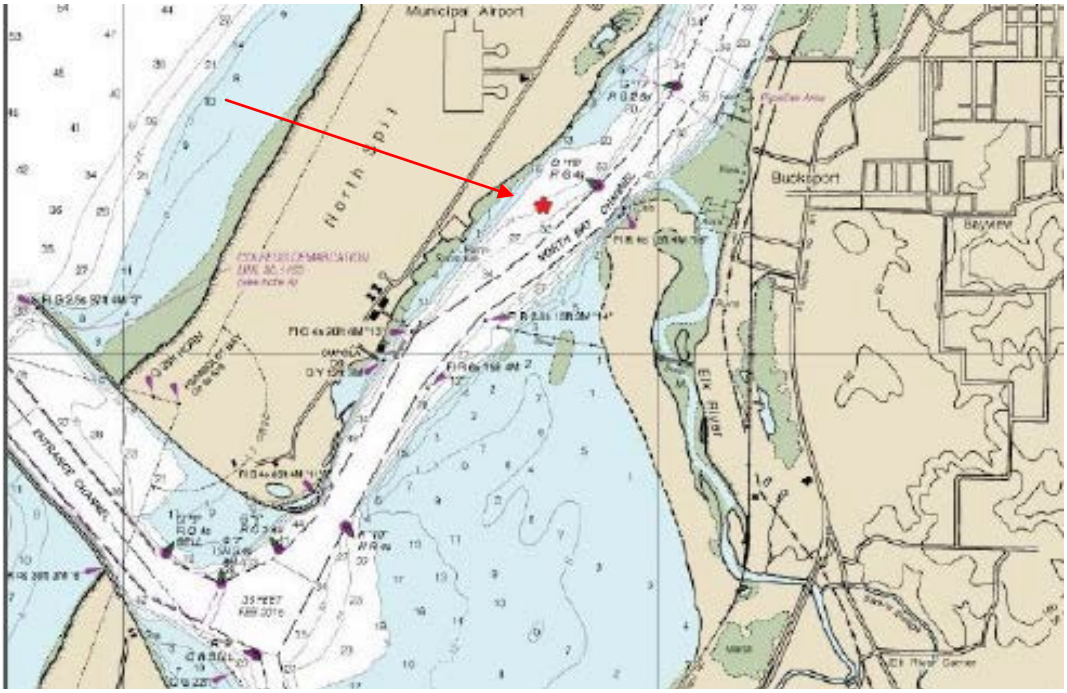
Humboldt Currents

by Casey Allen

Once again, local photographer and HASA member **Rick Urban**, "the fishing mortician," provided another great photo for this issue's cover. It's one of my favorites of the Coast Guard Life Saving Station with the winter moon, a gale warning flag, and a flock of black brant heading south. You can see more of Rick's photography work on his Facebook page, Majestic Encounter Photos.



The USCG installed a mooring buoy for their patrol boat just north of the Samoa boat ramp and off the eucalyptus trees (40-46-23.760N, 124-12-24.960W). It is technically out of the shipping channel, which swings east near the oil docks. It was placed to reduce the response time for the cutter. But it is directly in the path of every recreational and commercial fishing boats who take the shortest route south to the entrance of Humboldt Bay. The buoy is white with a blue stripe and reflective tape but only throws a scant radar reflection. The cutter is moored there 5 or 6 days each month. Someone is going to run into the buoy. Please don't let it be you.

The USCG is also going to implement a bar closure when the waves reach 20'. This is because their motor life boats are not safe to operate in these conditions. HASA supports this decision as we don't believe any recreational anglers will object. The USCG maintains they will come save you regardless of the conditions and the closure is another layer of warning. It is up to us to not put them in that position. For commercial vessels the closure will require a conversation with the USCG before crossing the bar. It is recognized that conditions can change quickly. But if someone crosses the bar and gets into trouble under the closure they could be fined or billed for the USCG services.

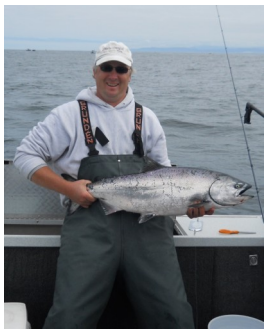
HASA's Annual Fundraising Dinner and Auction has moved this year. After a great run at Redwood Acres we have outgrown the facility. The next dinner, on Saturday, April 30th, will be held at the Arcata Community Center. The dinner will be catered again by **Brian Ferguson** and **Berit Meyer**, owners of Ramone's Bakery and Catering. This promises to be our biggest dinner yet, organized by **Cliff Hart**. The cost this year is $25 and includes a HASA membership. This is a good deal as membership at any other time is $25 and includes a free HASA tee shirt. We are focusing on increasing our membership rolls as a large, paid membership carries a strong voice. If you want to be a part of HASA's success stories come enjoy the great food and a chance at prizes, raffles, and auction items. Bring the kids; there will be plenty of great prizes for them too! Supporters and donors of goods and services will be exposed to a large crowd and receive recognition in our newsletter and our new website. We will promote your business every chance we get.

Darrel Primrose of Ballyhood Top Gun Lures sent this photo of a giant marlin caught by John Jones in the Azores. There was no scale to weigh it. You can only dream….

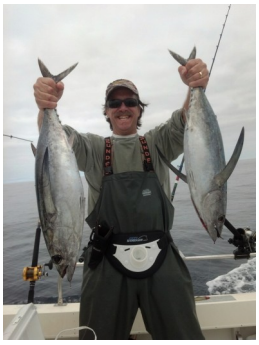
Yes, we are getting a new website. It is under construction by **Mark McGowen** and should be open to the public very soon. We love the Humboldt Tuna Club discussion board and will remain present there, but we need the new site so viewers can search our archives by topic or author. We will have an online store for our branded apparel, membership, and other stuff. The website will help us land bigger sponsorships. And by popular demand, we will keep the quarterly newsletter.

At the last Humboldt Harbor Safety Committee meeting we learned the series of storms in December moved enough sediment to change the depth of the entrance channel from 47 feet to 32 feet. Bar pilots, **Tim Petrusha** and **John Powell** reported this could be disastrous for shipping and a safety hazard for recreational and commercial fishermen. The shoaling will restrict the size of ship that can enter Humboldt Bay and how much cargo can be loaded aboard. It will also create conditions for larger, steeper waves when the outflow from the bay meets the ocean swell. The sediment comes from the Eel River and is carried north on ocean currents that can reach 5 knots. It then enters the bay on an incoming tide. There are aerial photographs showing this happening. The outflow of the bay is not strong enough to move the sediment away from the entrance and the summer ocean currents that flow south are not strong enough either. The dredge Yaquina is in Portland for repairs and is scheduled to work in Hawaii before coming to Humboldt Bay in April. The Yaquina's schedule is so strict that there will not be enough time or money to clear the excess sediment from Humboldt Bay. We have a "Catch 22" situation where ships won't come to Humboldt Bay because of the shoaling and we can't find money to dredge the bay without ships scheduled to arrive. Discussions on how to alleviate this situation are underway and if ship commerce is not enough to warrant the expenditure, then the safety of the recreational fleet may play an important part. The idea of extending the south jetty would be extremely expensive and the fear is that it will only last around 100 years before the same shoaling problem returns. I am sure a massive letter writing campaign to the Corp of Engineers and our elected officials will be needed to continue dredging. In the meantime, if anyone has any ideas, I will be happy to pass them along.

Meet our new HASA Board Members



Dirk Pedersen
I learned to cast at a young age and have been an avid fisherman ever since. My fishing adventure started in the Bay Area and expanded across California. Fate then brought me to Missouri, and then NJ, before returning to the Bay Area during high school. I moved to Humboldt in the mid-80s to study fisheries at HSU. Since graduating from HSU over 20 years ago, I have been working as a fish biologist/aquatic ecologist in the private sector. Trinidad was my home port for 15+ years, and Eureka has been my home port for the past 10 years. I'm happily married and have a 10 year-old son. Boat: 22' Boulton "Teleost"



Jed Douglas
Jed has loved fishing since he was a young boy, when his father taught him to fish on the northeast coast, catching flounder and giant spider crabs. After a brief stint in Florida and Arizona as a young adult, he found his way to Santa Barbara, where he acquired college degrees in Marine Biology and Geology. During his college years, he learned to spearfish and abalone dive to provide food for the table for himself and his girlfriend (now wife). In those days, you could harvest multiple species of abalone using scuba gear. Working his way up the coast over the years, he has had the opportunity to fish in the San Francisco bay area for 15+ years, and in the Eureka area for 8 years.
After fishing on both coasts for most of his life, he had the opportunity to observe the changes to fishing regulations and fish populations, neither of which are good. Joining the board for the Humboldt Area Saltwater Anglers will provide a way for Jed to give back to the community, help ensure fishing rights are maintained for future generations, and assist with the opportunities for young people to learn about fishing. Jed is sometimes seen on the ocean in his old Boston Whaler named Chilkat, after the Chilkat river in Alaska, translated from the native Tlingit as "Basket of Fish". A self-serving reason for joining HASA is to prod him into getting out and doing more fishing!

Michael Davies-Hughes was born and raised on the northwest coast of Wales where he fished from the rocky bluffs of the Irish Sea. He moved to California in 1989 to attend Long Beach State University. The next 18 years found him slowly migrating north, finally landing in the Freshwater area in 2001. Michael is currently the Assistant Superintendent of Educational Services at Eureka City Schools. He and his wife, Tami, have three children. His eldest daughter, Seren, is an avid tuna chaser and was featured in a 2007 article in Pacific Sportfishing Magazine for her tuna-chasing exploits at age six. Michael (AKA "Welshman") is serving on the HASA Board because of his interest in securing a bright fishing future for the next generation.

Eric Stockwell
Some know me as Abking, and others will recognize my other name: Loleta Eric. I've always been a water person and ocean lover . I'm entering my 17th year of paddling the ocean, fishing and diving from my kayaks along the Humboldt County coastline. I've owned seven sit-on-top kayaks that I bought from 5 different local dealers, and I still have 6 of them. I've caught tons of rockfish and lingcod, several dozen salmon, quite a few big adult steelhead on the Mad and Eel, a 9' thresher shark and a 43" Pac Halibut - both on barbless 20 pound leaders, and I've cultivated a passion for doing all of this from the kayaks. . I'm an outdoor guide specializing in kayak fishing. I want to take people on an adventure, and I plan to tell the story, show the pictures and hopefully publish a video showing the best of times. . I'm also working closely with Eel River Recovery Project and am on the Board there, and I'd love to share some of what we're working on that relates to salt water angling in Humboldt , notably, Eel River salmon runs.

Editors note: Larry De Ridder and Chris Hays were re-elected to another 2 year term. Scott McBain, Casey Allen, and Cliff Hart have one more year on their terms. Election of officers, including vice president (who will be president elect the following year), will take place at the next Board meeting. It will be held Wed. March 2nd at Scott's office, 980 7th St. Arcata at 6:30. Everyone is invited to attend the Board meetings.

SB-941 Vessel operator cards

Bill Text
The people of the State of California do enact as follows:

SECTION 1.
Article 1.4 (commencing with Section 678) is added to Chapter 5 of Division 3 of the Harbors and Navigation Code, to read:
Article 1.4. Vessel Operators' Education and Certification Cards

678.
(a) On or before January 1, 2018, the division shall develop a vessel operator card to be issued pursuant to this article.
(b) The division shall issue, or cause to be issued, a vessel operator card to a person who provides the division with proof that the person has passed a vessel operator examination approved by the division or a vessel operator course that includes an examination and is approved by the division pursuant to Section 668.1 or 668.3.
(c) A vessel operator card shall be valid for the life of the person to whom it is issued.

678.3.
(a) (1) The division shall determine the fees required under this section in amounts sufficient to cover the reasonable costs of the development, establishment, and operation of the program. The fees shall not exceed those costs.
(2) The division shall charge a fee not to exceed thirty dollars ($30) for the initial vessel operator card issued pursuant to subdivision (b) of Section 678.
(3) The division shall charge a fee not to exceed ten dollars ($10) for a duplicate vessel operator card issued pursuant to subdivision (b) of Section 678.
(b) In determining the amount of the fees imposed pursuant to this section, the division shall establish, and consult with, a technical advisory group consisting of interested persons, including, but not limited to, representatives of the boating community. The director shall appoint the members of the advisory group.
(c) The fees collected pursuant to this section shall be deposited in the Vessel Operator Certification Account, which is hereby established within the Harbors and Watercraft Revolving Fund.
(d) The division may expend the moneys in the Vessel Operator Certification Account, upon appropriation by the Legislature, for purposes of implementing this article.

678.5.
(a) The division may develop and provide a vessel operator examination on the division's Internet Web site. The division shall provide links from the division's Internet Web site to other vessel operator examinations approved by the division that are available through a provider whose course has been approved by the National Association of State Boating Law Administrators.
(b) If the division contracts for the provision of vessel operator examination services with test vendors, the division shall conduct a formal competitive bid process and shall contract with more than one vendor for those services.
(c) A vessel operator examination developed or approved by the division shall be consistent with the National Association of State Boating Law Administrators' National Boating Education Standards, as applicable to basic vessel operations, rules of navigation, and boating safety only.

678.7.
(a) An amount not to exceed four million dollars ($4,000,000) shall, upon appropriation in the annual Budget Act, be transferred from the Harbors and Watercraft Revolving Fund to the Vessel Operator Certification Account in the form of a loan to be used by the division to develop and establish the program under this article.
(b) The division shall repay the loan described in subdivision (a) from fees received pursuant to Section 678.3 within eight years of the effective date of this article.
(c) If the division has not repaid the loan within the time period specified in subdivision (b), the division shall notify the Joint Legislative Budget Committee.
(d) The loan shall not impair the intended expenditure purposes of the Harbors and Watercraft Revolving Fund.

678.9.
(a) On or before April 1, 2019, and on or before April 1 annually thereafter, the division shall prepare a report that includes all of the following information with respect to the prior calendar year:
(1) The total number of vessel operator cards issued pursuant to this article.
(2) The fees collected, and the costs incurred, by the division pursuant to this article.

(3) The correlation between vessel operator cards issued and the number of accidents, injuries, and fatalities related to the operation of vessels in the state that are reported pursuant to Section 656.
(4) The number of violations of this article reported to the division.
(b) The report shall be posted on the division's Internet Web site.
(c) On or before April 1, 2023, and again on April 1, 2028, the report prepared by the division and posted on its Internet Web site shall include recommendations, developed by the division, in consultation with the technical advisory group established pursuant to subdivision (b) of Section 678.3, relating to any program changes to improve boater safety in California or, alternatively, reasons why the program should not be continued.

678.11.
(a) Subject to the schedule in subdivision (b), a person shall not operate on waters subject to the jurisdiction of the state a vessel that is propelled by an engine, regardless of whether the engine is the principal source of propulsion, unless the person has in his or her possession a vessel operator card issued by the division pursuant to subdivision (b) of Section 678.
(b) A person is subject to subdivision (a) according to the following schedule:
(1) On and after January 1, 2018: A person 20 years of age or younger.
(2) On and after January 1, 2019: A person 25 years of age or younger.
(3) On and after January 1, 2020: A person 35 years of age or younger.
(4) On and after January 1, 2021: A person 40 years of age or younger.
(5) On and after January 1, 2022: A person 45 years of age or younger.
(6) On and after January 1, 2023: A person 50 years of age or younger.
(7) On and after January 1, 2024: A person 60 years of age or younger.
(8) On and after January 1, 2025: All persons, regardless of age.
(c) This section does not apply to any of the following:
(1) A person who is a resident of another state or a foreign country who is operating a vessel and meets either of the following requirements:
(A) The person is temporarily using the waters of this state for a period not to exceed 60 days, and meets the applicable requirements, if any, of his or her state of residency.
(B) The person is temporarily using the waters of this state for a period not to exceed 90 days, and meets the applicable requirements, if any, of his or her country of residency.
(2) A person operating a vessel while under the direct supervision of a person 18 years of age or older who is in possession of a vessel operator card issued pursuant to subdivision (b) of Section 678 or who is not required to possess a vessel operator card pursuant to paragraph (6).
(3) A person operating a vessel in an organized regatta or vessel race, or water ski race.
(4) A person operating a rental vessel.
(5) A person who is in possession of a current commercial fishing license.
(6) A person who is in possession of a valid marine operator license, for the waters upon which the licensee is operating, issued by the United States Coast Guard, or who is in possession of a valid certificate issued pursuant to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.
(7) A person who has successfully completed a boating course approved by the Commission on Peace Officer Standards and Training.

678.15.
(a) A violation of this article is an infraction.
(b) A person convicted of an infraction for a violation of this article shall be punished as follows:
(1) For an initial conviction, by a fine of not more than one hundred dollars ($100).
(2) For a second conviction, by a fine of not more than two hundred fifty dollars ($250).
(3) For a third or subsequent conviction, by a fine of not more than five hundred dollars ($500).
(c) A fine imposed on a vessel operator pursuant to subdivision (b) shall be waived, if the vessel operator provides proof that he or she had a valid vessel operator card at the time of the citation.
(d) (1) In addition to the fines imposed by subdivision (b), the court shall order a person convicted of violating this article to complete and pass a boating safety course approved by the division pursuant to Section 668.3.
(2) If a person who is ordered to complete and pass a boating safety course pursuant to paragraph (1) is 18 years of age or younger, the court may require that person to obtain the consent of a parent or guardian to enroll in that course.
(3) A person who has been ordered by a court to complete a boating safety course pursuant to paragraph (1) shall submit to the court proof of completion and passage of the course within seven months of the date of his or her conviction. The proof shall be in a form that has been approved by the division and that is capable of being submitted to the court or a state or local agency approved by the division through the United States Postal Service or another certified means of transmission.

The Saber Tooth Salmon

Recently a couple of new fossils have emerged which shed light on an extinct salmon species. Known to biologists as *Oncorhynchus rastrosus* today, but previously known as *Smilodonichthys rastrosus* to scientists, it has the more easily remembered common name sabertooth salmon. Known originally from fossils recovered from a quarry near Madras, Oregon, another from near the town of Worden in Oregon, and in California from Pinole and Turlock Lake, it was clearly widespread along the north coast. Early artists' renditions generally show a salmon with upper jaw fangs resembling those of a saber-toothed tiger. Recently two more fossilized remains have been recovered from the Madras quarry. They indicate that the "fangs" were about the size of the last section of a man's thumb, and stuck out more sideways than down. Thus the tooth configuration of the fish probably would have reminded us more of the hammerhead shark look than a saber-toothed tiger. As is common with fossil remains, there are lots of missing details. It isn't clear if the protruding teeth were used for feeding, defense against predators, some kind of male show-off spawning-season appendage or moving rocks from spawning redds. It also isn't clear whether the fish had other teeth which disappeared during the spawning run, or if these two were its only teeth. The lack of proof for other teeth has been interpreted by some as evidence that the fish was a filter feeder similar to sockeye salmon. In any case, this would have been a remarkable catch. Estimates of adult spawning size range from six to ten feet long, matched with adult body weights upwards of 400 pounds. Now all we need is wire leader, stand-up billfish gear and a time machine. ~ *Larry*

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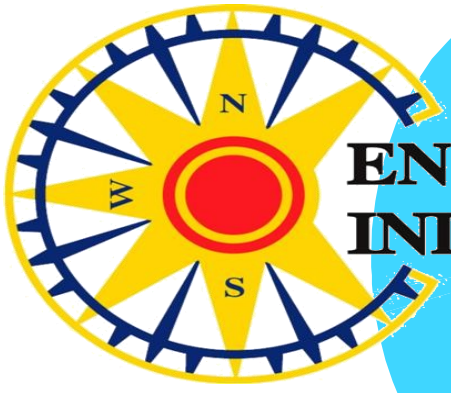

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