

# HUMBOLDT AREA SALTWATER ANGLERS

A VOICE FOR SALTWATER SPORTFISHERS

## 2015 SUMMER NEWSLETTER

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# President's Message

By Scott McBain



I hope that the summer 2015 fishing season has been a productive one for North Coast saltwater anglers. A recent trip to Coos Bay reminded me how different our local anglers are in sharing information and supporting other anglers. When fishing is challenging and the fish aren't where they are supposed to be, whether it be for salmon or tuna, the scouts that report back finding fish share in the success with others, and hopefully are repaid by others when they struggle to find the fish. With the slow salmon and halibut start, it was the scouts that finally got us on the fish and

shared the bounty with many. This camaraderie and sharing of information is one of the many reasons that fishing on the North Coast is so much fun.

The end of the summer marks a transition as HASA's efforts shift from actual fishing to working within the political and science process to inform and support saltwater fishing opportunities in the upcoming year. These start with the September Pacific Fisheries Management Council (PFMC) meetings that address rockfish, Pacific halibut, and salmon seasons, and include the International Pacific Halibut Commission (IPHC) meetings that provide overall harvest allocation to California, Oregon, and Washington. HASA has begun the process by scheduling our volunteer representatives in attending and representing HASA's interests, as well as providing initial input on analyses to inform potential changes in 2016 rockfish and Pacific halibut regulations (see page 6 and 8). We will need your help at key times to provide input on 2016 season regulations, and will send out notices when those comments are most needed.

It appears that we have outgrown the Redwood Acres banquet venue. After considerable searching of other venues, we have chosen to host the 2016 banquet on April 30, 2016 at the Arcata Community Center. It is a much larger space, has better acoustics and sound system, and ample parking. We hope that it provides for a more comfortable space for 2016. So mark your calendars!

The success of our annual banquets has provided us with the resources to do more work to support our efforts in sustaining North Coast fishing opportunities. We will continue to fund travel expenses for our volunteer representatives, fellowships for HSU students that are improving our information on North Coast fisheries, and costs for the annual fundraiser. We are going through a brainstorming process for future HASA priorities, which may include more substantial fishery research needs, artificial reef information, more support for encouraging the next generation of anglers, and others. We will likely send out a request for suggestions soon. The Board will also be working on improving our membership process, and we will introduce a new plan shortly.

Lastly, as the summer fishing season winds down, I hope everyone is able to catch a salmon or two, or get in a successful albacore trip before winterize our boats and shift to other hobbies. The late summer and fall can have the best fishing. My best day albacore fishing was a few years ago in mid-October in 58 degree water, so keep an eye on the ocean conditions and water temps, and don't give up too soon. Best of luck!

A handwritten signature in black ink that reads "Scott McBain".

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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# Update on Pacific Halibut Age, Growth, and Maturation

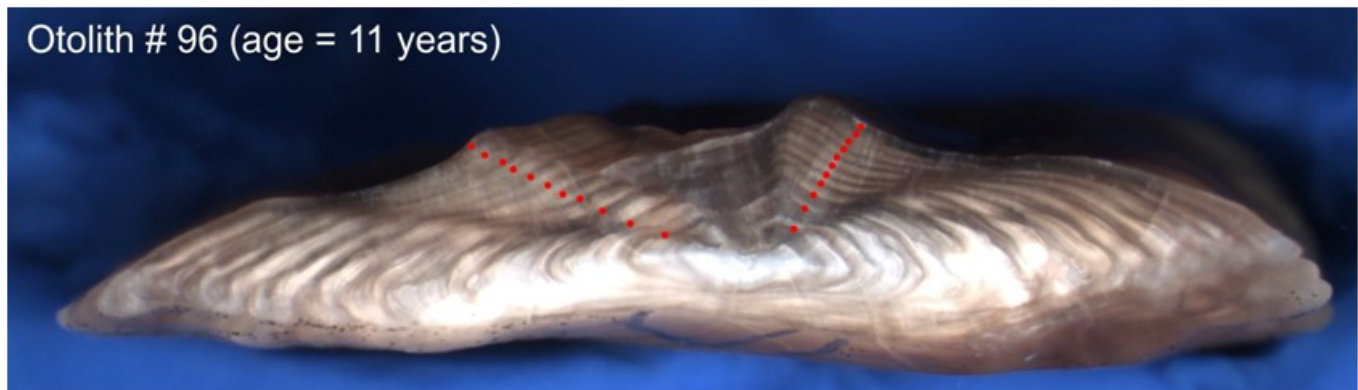
## A Thesis Project by Miki Takada



The 2015 Pacific halibut season is over in California, and thanks to the assistance of many of you, I was able to get quite few samples (268) for my thesis project from Northern California and Charleston, Oregon. In July, I traveled to Seattle, Washington, to train with Joan Forsberg, the otolith-aging expert at the International Pacific Halibut Commission (IPHC). Often called “earbones,” otoliths have annuli, similar to annual growth rings in a tree, which allow us to determine the ages of fish.



Otoliths were extracted from the fish’s blind side, stored in a thymol-glycerin solution for approximately four weeks to improve their clarity, broken in half, then baked before aging. I read ages from 100 otoliths during my training with the IPHC. Below is a photograph of one of the otoliths that we read. The red dots indicate the annuli (annual growth rings) that were counted; this fish was found to be 11 years old. Of the otoliths that I have read so far, the fish ages range between 6 and 14 years.



The next steps in my study after reading ages from the otoliths will be to analyze the size-at-age (how long and heavy the fish are for a given age) and maturity-at-age (what fraction of the fish of a given age are sexually mature and ready to reproduce). I will compare this data with that from a similar study conducted in this region in 2013 (by Liz Perkins, also supported by HASA and California Sea Grant) as well as data from the coastwide set-line survey by the IPHC. Important comparisons will be whether, as was found in 2013, the fish in our region are larger for a given age, and mature at a younger age but larger size than other parts of the coast.



I will also be able to see whether there have been any changes in the size or maturity at age since Liz’s 2013 study. Unlike her 2013 project, I have sampled in southern Oregon as well as northern California, so I will be able to compare those regions as well. Another important aspect of my project is that I will be doing histology (sectioning, staining, and analyzing samples under a microscope) on fish ovaries to verify the methods currently used by the IPHC and others to assess sexual maturity.



I am grateful to HASA and California Sea Grant for generously providing funding for this project. I would also like to thank all those who have allowed me to sample their fish or donated their carcass to my study. That includes seventeen known individual anglers as well as many anonymous donors who have left carcasses in the two halibut totes at Woodley Island Marina (one on Dock A next to the fish cleaning station, and the other by Dock D, in front of the laundry room), the bins next to the fish cleaning stations at Sylvan Harbor RV Park & Cabins in Trinidad, and from the docks at Charleston, Oregon.

# A History of Halibut Fishing

By Larry De Ridder



How difficult would you like to make your halibut fishing? Care to try it without metal hooks, without modern boats or fishing lines, no GPS, and no depth sounders? The following three paragraphs are quoted from Report No. 5 of the Halibut Commission in 1930:

“The hooks of the tribes in Southeastern Alaska were large and made of wood, two pieces being lashed together at an angle of about 15 degrees. They were sometimes much carved. To one of these pieces the line was attached, and at the end of the other a barb was lashed firmly by means of strong fibers. Another type of hook characteristic of the Cape Flattery Indians of Washington was made of splints from hemlock knots, steamed inside the bulb of the giant kelp, *Nereocystus*, shaped as desired, and allowed to cool. The barb was of bone, lashed with strips either of spruce cut thin like a ribbon or of the bark of the wild cherry... The bait was lashed back of the barb by fibers made of the sinews of animals, such as the whale. As the halibut mouth is vertical, it took the peculiarly shaped hook readily, and the upper part to which the line is attached operated as a spring to hold the barb in the flesh.

“The lines were made of twisted fiber of the cedar, or animal sinews or intestines or of the giant kelp. The kelp lines were made by bleaching the kelp stems in fresh water, partially drying them in smoke, then stretching them repeatedly until they were the diameter of cod lines. They were brittle when dry, but exceedingly strong when wet. The twisted fiber or sinew lines were beautifully made by the women and had a uniform diameter and great strength. A line was made as long as 80 or 100 fathoms, but this length was seldom used unless the black cod was fished for, as the latter was taken at greater depth.

“In use the line was attached to a stone sinker with the hook close to it and apparently often, if not usually, suspended just off the bottom. At the other end of the line was attached a buoy made of bladders or skin and to it a float or a flag by which the strike of the halibut was signaled to the watching Indians. It was said that a canoe with two men could watch 10 or 15 such lines, but that if a larger canoe with more men was used, fishing was over the side. Fishing was commonly done in 10 to 20 fathoms of water, usually close to shore, but in the case of Neah Bay Indians most often 15 or 20 miles west from Tatoosh Island, hence well out to sea.”

The earliest written records by Europeans exploring the North American coast report an incredible abundance of halibut. Captain Cook’s 1778 records include an entry documenting the catch of 100 halibut by his crew in one hour while anchored near Shumagin Islands. In 1789 another writer noted that seven of his crew fishing from a whaleboat with hand lines could not equal the catch made by two locals fishing nearby with their native gear.

Closer to our home waters, the Yurok were known to fish halibut with lines about 50 feet long, equipped with a gorge (something which would stick in the fish’s mouth) and thrown from shore. Given the records and life styles of the fish involved, the prey in this situation was likely California halibut, rather than Pacific halibut. There is also archeological evidence that the Tolowa possessed the equipment, dugout canoes and skills to fish for halibut outside the surf near the mouth of the Smith River.

If you are interested in learning more of the history of one of our favorite fisheries, obtain a copy of *The Pacific Halibut, The Resource and the Fishery*, by F. Heward Bell, former Director of the International Pacific Halibut Commission.



# 2015 Summer Groundfish News

By Tom Marking, GAP Representative



While it's hard to accept, August is drawing to a close and with it the best part of the summer fishing season is behind us. Like last year, this summer with all the wind and warm water has favored the larger boats that can make the run to False Cape and Cape Mendocino into the chop created by south wind waves running against the Northwest swell. But, with the brief calm spells, the daily armada that makes the thirty mile run to the Cape has had mixed success.

**SALMON** has been a tough sale this year. The spring and early summer had very limited catch off Humboldt Bay in our normal areas, but then salmon finally began to show up down at the Cape in mid-July. Shelter Cove had some early success and then again lately as anglers began to mooch down in that area. Like the Cape, Shelter Cove has been on again/off again regarding salmon. The Pinnacles have been the "go to" area for the Eureka crowd and has produced erratically. Trinidad has had a dismal salmon season with very few being caught by the occasional angler. The El Nino water has the area water at about 59 to 60 degrees, and the salmon prefer a temperature much lower than that. The occasional Coho and short Chinook has been the norm, with most anglers having caught very few legal fish over the season. This has definitely been a let down from the past few years, but may portend things to come in the future as the drought impacts become more prevalent. The rivers are very warm this year and the smolts are definitely in trouble with parasites and algae. We could be in serious trouble for the next several years.

**HALIBUT** started May 1 and this season was structured to fish the first 15 days of each month until September 1. If there was still quota left then fishing would continue until the quota was met. While the season started out slow for catch, it definitely picked up and the season was closed on August 13. We harvested the 25,000 pound allocation and CDFW notified NFMS who has the authority to shut the season down when the quota was projected to be caught. The "in-season" management scheme worked as planned, and so one of the major concerns of the PFMC Council's mandate to not exceed the allocation was successfully met. Hopefully, now that we have demonstrated the CDFW can have a quick response to the allocation harvest, we will try to get some increased allocation for the 2016 season. There is no guarantee but this process will start at the next PFMC meeting in Sacramento on September 10. Preliminary proposals will be selected with a final decision made at the November meeting in Costa Mesa. We intend to ask for an additional 2% to be added to the 4% we were granted this year. If successful this would move our allocation up to about 37,500 pounds. As you are aware by this point, this is a negotiated process with our two Pacific States to the north, so it's a regulatory dance blending science and persuasion.

**ROCKFISHING** has been stellar this season. The average angler has no trouble in picking up their five blacks each day while in Trinidad, False Cape or Shelter Cove. Early on the lings were plentiful and having a limit of three made for a lot of happy bottom anglers. The pressure has slowed things down a bit, but there are still lings and blacks to be caught, with the occasional brown, china, vermillion, blue, gopher, cabezon and kelp greenling mixed in. The bottom fishing has been a savior to many who make the run to the Pinnacles, get blanked on salmon, but can count on catching some bottom fish to bring home.



## WHAT'S NEW FOR 2016?

We are in a transitional period this year. The black rockfish bag limit was reduced to five and the halibut season was substantially shortened. While there was a Black Rockfish assessment completed this summer, the results were not promising. It appears the Black Rockfish are now in the Precautionary Zone and the catch has to be further reduced. Our Annual Catch Limit for California has been 420 mt in 2015 and may have to be substantially reduced in 2016. The CDFW staff will be analyzing the catch and assessment data in the next few months and will try to provide as much opportunity for us in the north as possible. They realize how important blacks are to us and is our predominate specie to catch. One wrinkle is that the recreation sector borrowed 75 mt from the Commercial sector this year, or our bag limit would have been two blacks this year. We are seeing the impact of more boats, increased pressure and concentration of effort to the shallow near-shore as a result of the Rockfish Conservation Areas. This is known as "local depletion" where a narrow area is overly targeted.

To relieve some pressure on the near shore, we have asked the CDFW to model and analyze other opportunities such as more depth (out to 30 fathoms), allow petrale to be shifted to the "other flatfish" category so we can fish out in deeper water for them. Also, black cod, hake and a mid-water fishery was requested so that we could target yellowtail rockfish in deeper water. All these concepts will be under consideration this fall.

The salmon season is winding down, but the bottom fish will go on this year until October 31. A few boats have run out for tuna with limited success, but maybe the tuna will show up in some numbers after they winds calm down. So far, no one has been able to find any concentrations of tuna, with small scattered schools being reported so far. It has been an odd year, with few boats out in front of the "jaws" in our normal areas. When the weather allows, 40 to 60 boats a day, along with the normal 7-9 charters are making the run to the Cape. The Pinnacles, False Cape and Cape Mendocino have never seen this much fishing pressure by so many boats. The warm water is the cause, pushing the salmon south and with it the Eureka fleet. While the season lasts, enjoy the late summer and fall fishing. We may be in for some big changes next year.



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## Buoys or lack thereof...and the local forecast

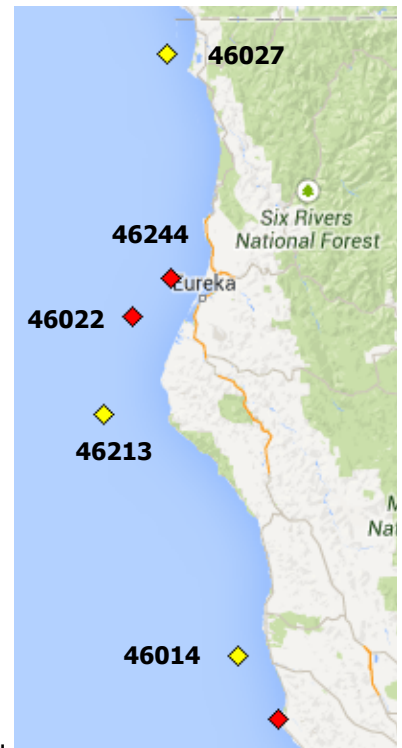
by Senior Meteorologist Brian Garcia

The Coastal Waters Forecast (CWF) issued from the National Weather Service Weather Forecast Office Eureka (NWS WFO EKA) covers the waters from Point Saint George to Point Arena in 4 separate zones.

Within these zones we typically have 4 buoys to gather data from. See inset map. These are off of Point Arena, Cape Mendocino, and 2 off Humboldt Bay. Crescent City is technically outside of our forecast waters, but we still use the data.

In February of this year buoy 46022 stopped reporting data then went adrift later in the month and was finally recovered in very early March. Then in late July the North Spit buoy 46244 went adrift and was recovered shortly thereafter. For the Humboldt Bay marine community this left a deep information void. As forecasters here in the WFO, the missing buoys also left a significant data hole.

Wind and wave models need information to start from, typically using buoy data as the initial input and supplemented by satellite derived wind fields. Considering there are not as many buoys across the waters as there are weather stations across the land, marine weather models are already at a disadvantage. Take our two buoys out of the equation and model data suffers locally. Over the past 6 months, we as forecasters have struggled to forecast winds and waves locally due to lack of model input and observable data. With no data available locally, we are left to interpolate between wind data off Crescent City and Point Arena, which is not an ideal situation. What we're left with is solely model data, which struggles due to the lack of input data. Satellite derived wind data is good, but infrequent and generally several hours old by the time it is processed and delivered. It does however provide a nice way to see how models have been handling the weather pattern.



That said the forecasts have been doing quite well this season capturing the overall pattern. There generally have only been small differences in wind strength or wave height through the summer forecast season. The pattern has been different much of this summer than is typical, causing a deviation from climatological wind regimes, which can add another layer of complexity to the forecast. Typically we have moderate to strong northerly winds across the coastal waters, depending on where you're at, due to persistent high pressure set up over the eastern pacific. This year we have been bouncing between a climatological setup and areas of low pressure sliding through. These lows break up the winds and allow for lower seas.

Regardless, the forecast should see an improvement starting as early as the last week of August. As of this writing (*June*), buoy 22, which has wind and wave data, is slated to be redeployed. We are also expecting the redeployment of the north spit buoy, which provides high resolution wave data. The redeployment of these two buoys will provide more initialization for marine model data and provide real time information to our forecasters in support of our services. Also, these buoys will again provide an invaluable asset to our local marine community.

For many marine users it has been a long tough road without data offshore of Humboldt Bay. That road should be smoothed out soon and we can all again enjoy the buoys.

Feel free to contact us through our webpage or phone if you have any questions. [www.weather.gov/eureka](http://www.weather.gov/eureka) or 707.443.6484

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Hayden Marino, Age 9, Leopard Shark, San Francisco Bay



Canyon Martin and Riley Sernas with trout caught at the 8th Annual Sky-Crest Lake Youth Fish Derby



Ian Owen's son River on his father day trip to the cape with Captain Reef Twibell on Silver Star



Grace Schmidt and her first fish..... rainbows at Freshwater Lagoon



Austin Scilacci with his first albacore tuna



Canyon Martin with a great brown trout

Please send us your youth fishing photos. Include the name of the youth, the name of the photographer, and any other pertinent information. We will be happy to print them in the next issues of the HASA newsletter. When taking photos remember to keep your back to the sun, watch out for hat shadows, and get your subject to smile! A great photo could end up on our cover, like Taggart Williams on the cover of this issue. Send to [hasa6191@gmail.com](mailto:hasa6191@gmail.com)

# Introducing the Deacon Rockfish

## A new species of *Sebastes* (Scorpaeniformes: Sebastidae) from the northeastern Pacific, with a redescription of the blue rockfish, *S. mystinus*

Benjamin W. Frable  
Department of Fisheries and Wildlife  
Oregon State University



*Editor's note: the following is from a 24 page National Marine Fishery Service bulletin. The Abstract and Implications for fisheries are included here.*

**Abstract**—The diverse predatory rockfishes (*Sebastes* spp.) support extensive commercial fisheries in the northeastern Pacific. Although 106 species of *Sebastes* are considered valid, many of the ecological, geographical, and morphological boundaries separating them lack clarity. We clarify one such boundary by separating the blue rockfish *Sebastes mystinus* (Jordan and Gilbert, 1881) into 2 species on the basis of molecular and morphological data. We redescribe *S. mystinus*, designate a lectotype, and describe the deacon rockfish, *Sebastes diaconus* n. sp. Aside from its nambiguous distinction at 6 microsatellite loci, the new species is most easily differentiated from *S. mystinus* by its possession of a solid in contrast with a blotched color pattern. *Sebastes diaconus* also possesses a prominent symphyseal knob versus a reduced or absent knob, a flat rather than rounded ventrum, and longer first and second anal-fin spines. *Sebastes diaconus* occurs from central California northward to British Columbia, Canada, and *S. mystinus* occurs from northern Oregon south to Baja California Sur, Mexico, indicating a broad region of sympatry in Oregon and northern California. Further collection and study are necessary to clarify distributional boundaries and to understand the ecology and mechanisms of segregation for this species. Additionally, fisheries assessments will need revision to account for the longstanding conflation of these 2 species.

The rockfish genus *Sebastes* is one of the most diverse and abundant genera along the Pacific coast of North America (Love et al., 2002). Rockfish biology and ecology have been well studied because of their commercial importance, yet some taxonomic limits, population boundaries, and phylogenetic relationships within *Sebastes* remain unclear (Hyde and Vetter, 2007; Orr and Hawkins, 2008) because many species are very similar and overlap in meristic counts and morphometrics. As a result, fishery managers struggle to correctly identify *Sebastes* species and sometimes lack accurate

species diagnoses to determine proper management.

Several clusters of similar species within *Sebastes* merit increased taxonomic attention. For example, the uniformly dark-colored species of *Sebastes*, such as the blue rockfish *S. mystinus* (Jordan and Gilbert, 1881), black rockfish *S. melanops* Girard, 1856, light dusky rockfish *S. variabilis* (Pallas, 1814), and dusky rockfish *S. ciliatus* (Tilesius, 1813), are among the most frequently conflated and confused when landed in the same fishery (Kramer and O'Connell, 1995; Orr and Blackburn, 2004). Even among brightly colored rockfishes, increased study has revealed cryptic species. Gharrett et al. (2005) found 2 genetically distinct forms within the rougheye rockfish *S. aleutianus* (Jordan and Evermann, 1898), and those forms were later designated as the rougheye rockfish *S. aleutianus* and blackspotted rockfish *S. melanostictus* (Matsubara, 1934) (Orr and Hawkins, 2008). The historical concept of the vermilion rockfish *S. miniatus* (Jordan and Gilbert, 1880a) was also shown relatively recently to include 2 reproductively isolated entities (Hyde, et al., 2008).

In this study, we focus taxonomic attention on *S. mystinus*, a common nearshore species found from northern Mexico to British Columbia, Canada. In the 19th century, *S. mystinus* was the most commercially important species in California; now it is mainly targeted recreationally (Love et al., 2002). Over the last decade, multiple studies have identified 2 genetically distinct groups of *S. mystinus* along the Pacific coast (Cope, 2004; Burford and Larson, 2007; Burford and Bernardi, 2008; Burford, 2009; Burford et al., 2011a, 2011b), and in several studies the presence of 2 morphologically unrecognized species have been hypothesized (Burford and Bernardi, 2008; Burford, 2009; Burford et al., 2011a, 2011b).

Cope (2004) first identified genetic distinctions between northern and southern populations of

blue rockfish while studying their stock structure. His analysis revealed numerous fixed differences in the sequence of the mitochondrial control region between samples from the Oregon–Washington region and samples from California waters. These data indicate that the genetic break occurred in the vicinity of Cape Mendocino, California.

Burford and colleagues then applied additional molecular and phylogeographic analyses to these 2 populations (Burford and Larson, 2007; Burford and Bernardi, 2008; Burford, 2009; Burford et al., 2011a, 2011b). In a combined analysis of mitochondrial (control region) and nuclear (recombination-activating gene 1 [RAG1]) markers and microsatellites for the subgenus *Sebastosomus*, Burford and Bernardi (2008) were the first to propose that the 2 populations might represent different species. Within *S. mystinus*, Burford and Bernardi (2008) identified 2 clades with higher genetic divergence ( $F_{ST}=0.120$ ) than that found between 2 well-established species (Narum et al., 2004), the gopher rockfish *Sebastes carnatus* (Jordan and Gilbert, 1880b) and the black-and-yellow rockfish *S. chrysomelas* (Jordan and Gilbert, 1881), and with much higher genetic divergence than that among populations of *S. melanops* ( $F_{ST}=0.032$ ) (Miller et al., 2005). They estimated the divergence time of the 2 lineages to be between 780,000 and 920,000 years ago, far preceding the Last Glacial Maximum (LGM) and, therefore, refuting Burford and Larson's (2007) hypothesis that the LGM caused allopatric speciation within *S. mystinus*.

Burford and Bernardi (2008) concluded that the 2 genetically distinct groups of *S. mystinus* are incipient species on the basis of the evidence presented here previously and the lack of evidence for introgression or hybridization. Burford (2009) expanded on this conclusion by directly testing hypotheses of demographic history and speciation scenarios with an expanded sampling of 6 microsatellites and the control region marker. They found evidence for a demographic contraction and rapid expansion near the time of genetic coalescence and far earlier than the LGM (Burford, 2009). Burford (2009) concluded that the 2 lineages speciated allo-

patrically much earlier than the LGM and that they have subsequently expanded ranges to form an area of sympatry from central Oregon to northern California.

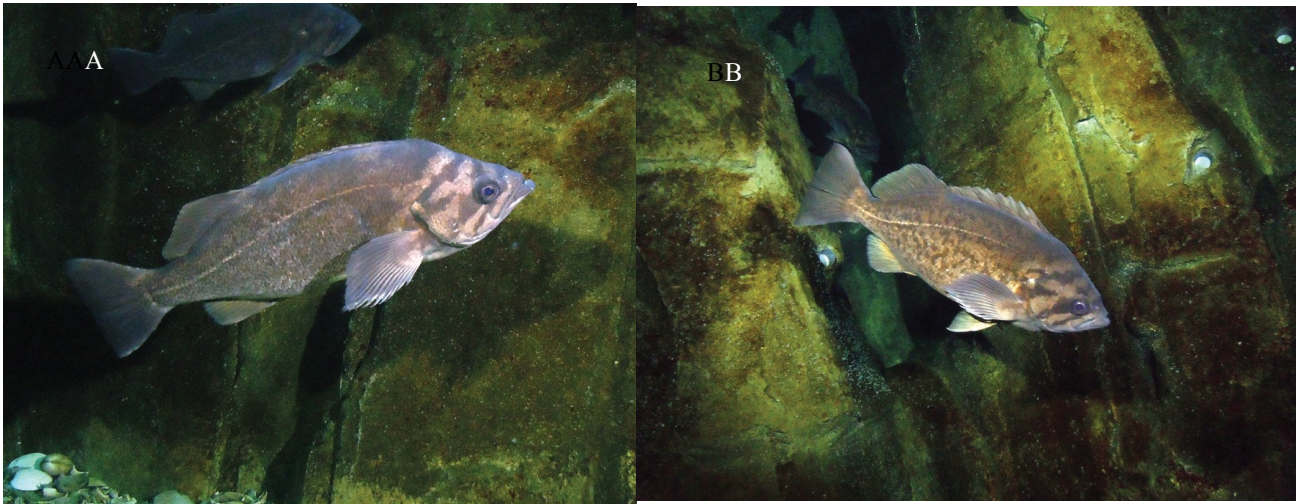
Finally, Burford et al. (2011a, 2011b) examined microsatellite data from 466 type-1 (northern group) and 1752 type-2 (southern group) specimens collected from Fort Bragg, California, south to Santa Cruz Island, California, to determine rates of hybridization (Burford et al., 2011a) and year-class compositional and ecological differences (Burford et al., 2011b). Burford et al. (2011a) found no hybridization in northern localities with higher co-occurrence, but they identified low levels in Southern California (highest rate of hybridization=4.1%). This finding, combined with the identification of a Wahlund Effect (i.e., lower heterozygosity than expected at random between the 2 populations), indicates that reproductive isolation helps maintain the segregation, especially in areas of overlap (Burford et al., 2011a). Burford et al. (2011a, 2011b) considered their results to provide sufficient evidence that the 2 genetic lineages are cryptic rather than incipient species.

Despite the accumulating detail on genetic differentiation, no study provided a complementary physical description of the 2 types. Because of the lack of physical descriptions or defining characteristics, precise field identification of Burford's genetic lineages (type 1 and type 2) has eluded biologists and fishermen alike.

Meanwhile, fisheries biologists acknowledged 2 different trunk pigmentation patterns in *S. mystinus* from near the Oregon, Washington, and California shores: the "blue-sided" (Fig. 1, A and C) and "blue-blotched" rockfishes (Fig. 1, B and D) (Love, 2011), which, as the authors of the earlier genetic studies have indicated, match the type-1 and type-2 genetic lineages, respectively (Burford1). That difference in color pattern indicates that these lineages may be more morphologically distinguishable than originally thought.

The wealth of recent genetic work on *S. mystinus* and the discovery of a color polymorphism that is congruent with the major genetic break indicate that a formal taxonomic reevaluation is overdue. In this study, we 1) test whether the morphotypes correspond with the types of Burford and Bernardi (2008), 2) characterize the morphological features of the 2 genetic types, 3) use genetic and morphological data to evaluate species status, and 4) clarify the geographic ranges of the 2 forms. In doing so, we confirm the genetic separation of the 2 color morphs and provide a formal





Photographs of live (A) *Sebastes diaconus* (deacon rockfish) and (B) *S. mystinus* (blue rockfish) in the Oregon Coast Aquarium, Newport, Oregon

description of the type-1 or blue-sided form as a new species, *S. diaconus*, the deacon rockfish. The type-2 or blue-blotched form matches most of the original syntype series of *S. mystinus*, from which we designate a lectotype and redescribe the species. This study provides information essential to proper population monitoring and management of these species in Oregon and the northeastern Pacific.

### Implications for fisheries

The molecular analyses of Cope (2004) and of Burford and colleagues (Burford and Larson, 2007; Burford and Phillips, J. 2013. Personal commun. Hatfield Marine Science Center, Oregon State Univ., Newport, OR 97365. Bernardi, 2008; Burford, 2009; Burford et al., 2011a, 2011b), combined with our morphological results, indicate definitively that 2 types of blue rockfish differ sufficiently to merit recognition as distinct species. We concur with Burford et al.'s (2011a, 2011b) argument that fisheries management must recognize that distinction, because the 2 species may react differently to varying ocean conditions and may experience drastically different levels of fishing pressure. In the known area of sympatry (from Newport, Oregon, south through northern California), these 2 species hold substantial recreational importance and, to a lesser degree, commercial value. In northern California, blue rockfish (likely both species) are the most commonly caught species of rockfish by recreational fishermen and are the second largest recreational rockfish fishery after *S. melanops* in Oregon (Love et al., 2002). Cen-

tral and southern California populations of blue rockfish (either *S. mystinus* or both species) have declined drastically and many of the fish currently being caught are juvenile, indicating stock depletion in these areas (Love et al., 2002). In response to the known decline, most of the fishery and life history research on blue rockfish has focused on southern California populations, likely *S. mystinus* (VenTresca et al., 1995; Laidig et al., 2003; Key et al. 6), and very little appears to be known about *S. diaconus* from Oregon and Washington. Moreover, it is unknown whether fishing pressure in the zone of overlap affects 1 of the 2 species more than the other.

Our study provides fisheries managers the crucial diagnostic tool needed to answer these questions: namely, the characters that readily distinguish the adults of the 2 species, *S. mystinus* and *S. diaconus*, in the form of color pattern, size of the symphyseal knob and lower jaw, ventrum shape (rounded versus flat), and potentially ovary color. Although pelagic, young-of-year and early settled juveniles are more difficult to distinguish, as is the case with many young *Sebastes* (Love et al., 2002), genetic analysis or collection locality can help assign those individuals to these 2 species. Additional sampling and observational studies may also be able to elucidate ecological and habitat differences. Even with some gaps in our knowledge, formal recognition of these lineages as distinct species permits the development of proper management regimes for these important groundfishes along the Pacific coast of the United States.

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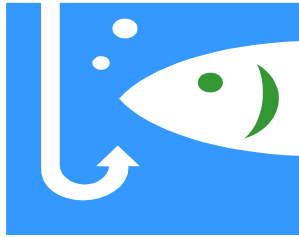
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# Humboldt and Del Norte MPA Collaborative

Provided by Jennifer Savage

The Humboldt and Del Norte MPA Collaborative met July 24 at the Requa Inn to discuss the next steps of the planned video project with Humboldt State University, MPA enforcement trainings scheduled to take place in October, hosting a North Coast regional forum later in the year and developing logos for each Collaborative. In attendance were Calla Allison and Paul Hobi, director and community coordinator for the MPA Collaborative Implementation Project, representatives from the Bureau of Land Management, HSU, Tolowa Dee-Ni' (formerly Smith River Rancheria), the Humboldt Harbor, Recreation and Conservation District, the Northcoast Environmental Center, Humboldt Office of Education and the Northern Region Water Quality Control Board.

## **Baseline Monitoring Studies**

Before any of the planned agenda items could be addressed, however, Harbor District Commissioner Pat Higgins brought to the group's attention the importance of ensuring results from the ongoing MPA baseline monitoring projects. He wants to see "the info disseminated and the community stay connected," he said. Allison explained that Ocean Science Trust and the related Monitoring Enterprise will coordinate the data gathered during the baseline studies – which have one year left – and then that data will be shared with the community through a regional forum. Continued collection of data will be encouraged. Higgins stated that the Harbor District would continue to take the lead on dissemination and ongoing partnerships between area fishermen and scientists.

## **Enforcement Training**

The enforcement trainings for Humboldt and Del Norte counties are scheduled to take place October 14 and 15. The trainings are designed to include all law enforcement personnel who may have site authority. The hope is that each county's district attorney will attend as well – the Humboldt Collaborative is tasked with reaching out to D.A. Maggie Fleming.

## **North Coast Regional Forum**

To better share information and accomplishments, an all-day North Coast Regional Forum is planned for Tuesday, Nov. 17. This will include the Sonoma, Mendocino, Humboldt and Del Norte Collaboratives, all of which are creating videos as outreach tools. Ocean Science Trust will facilitate the forum, but will be there primarily in a "listening and supportive" role, according to Allison. Key topics will be outreach, education and enforcement.

## **North Coast Video Project – Concept**

The Humboldt Marine Protected Area Collaborative is requesting a grant of \$13,000 to engage diverse audiences in the North Coast community via the creation and distribution of a short, interview-based video. Through engaging local students and top notch filmmaking in the production of this video, we will offer a fresh perspective from previous videos that we believe will resonate with a local as well as statewide audience. We will work on incorporating tribal perspectives into the video with the Del Norte Collaborative, which has agreed to contribute \$3,000 towards the project for a total request of \$13,000.

## **North Coast Video Project – Details**

Using a combination of HSU student filmmakers, high school film classes and paid crew, the collaborative will shoot original footage in diverse locations that focuses on telling two to three stories over approximately 10 minutes that explore students' perceptions of what makes a healthy ocean and the roles marine protected areas play. Students will interview local fishermen, tribal elders, researchers and community members involved in the creation and management of marine protected areas. Interviews and footage will ultimately determine the content of the final product.

What makes this project unique is that the actual production of the video will concurrently serve as an excellent outreach tool itself. The plan is to bring students to coastal habitats where monitoring is taking place – tide pooling field trips to Patrick's Point State Park near Trinidad, for example – and asking fishermen and other committed collaborative players about their understanding and points of view about ocean health and marine protected areas. Filmmakers will also work closely with tribal representatives to incorporate their perspectives, including interviews with tribal elders. Currently, the collaborative is pursuing formal authorization to interview tribal members as part of this project.

Utilizing existing contacts, collaborative members will work with students and teachers at multiple Humboldt County Schools.

Scheerer expects to film at multiple locations throughout the fall of 2015, and in addition to that original footage will also acquire footage from the North Coast MPA ROV survey and other available sources for both underwater and aerial views of our local MPA(s) with the assistance of Lighthawk.

Beginning in Spring, 2016, the video will be available for screening on two local access channels: APT Channel, and Access Humboldt. The video will be distributed online by the collaborative member organizations, and a local premiere will be planned at an Ocean Night film event in spring of 2016. It will be available to be shown in classrooms by local and statewide agencies. The Collaborative will submit the video to appropriate film festivals, including the San Francisco Ocean Film Festival and Beneath the Waves Film Festival.

Scheerer will make an effort to incorporate these videos into his larger projects that may be broadcast on PBS and other nationally distributed channels (researching rocky intertidal habitats and fish assemblages on nearshore rocky reefs). The fiscal sponsor will be Humboldt State University.

The Humboldt Collaborative will work with Del Norte Collaborative chair Rosa Laucci on interviewing tribal members from the Tolowa Dee'ni tribe and with Leisyka Parrott, an interpretive specialist at the Bureau of Land Management's Arcata Field Office, who has been recognized nationally for excellence in her work educating youth about the public lands.

Scheerer has been producing, directing and writing award-winning internationally broadcast science and natural history documentaries for decades and teaches filmmaking at Humboldt State University. His credits include The California Environmental Legacy Project, Headwaters to a Continent, and Yellowstone: America's Eden, among dozens of other nationally broadcast films.

#### **Collaborative Co-Chairs**

The Collaborative is co-chaired by Beth Chaton, Joe Tyburczy and Jennifer Savage, and is comprised of a cross-section of experts and stakeholders in Humboldt coastal issues representing a diversity of agencies, tribes, ocean businesses, fishing interests, and non profit organizations. Beth Chaton is the Humboldt County Office of Education Coordinator, After School Programs/ Redwood Edventures and coordinates the annual Redwood Environmental Education Fair. Joe Tyburczy is a marine ecologist with California Sea Grant based in Eureka and is a co-principal investigator on two North Coast MPA Baseline Monitoring projects.

*Jennifer Savage served on the Regional Stakeholder Group during the MLPA design process and continues to work on MPA-related issues and outreach.*

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# Humboldt Currents

By Casey Allen



This issue's excellent cover photo, provided by **Garth Williams**, is of **Taggart Williams** fishing the break at Shelter Cove for redbait perch. Perch fishing has been great all along the North Coast this year and it could be because of the abundance of sand crabs. There are literally millions of them when just a few years ago they were hard to find.

I attended a conference call with SeaGrant's **Joe Tyburezy** who was being evaluated by national Sea-Grant officials. Joe gave a presentation on the projects he is working on highlighting the Pacific halibut studies by Humboldt State students **Liz Perkins** and **Miki Takada**. The studies were jointly funded by SeaGrant and HASA. I was able to explain our working relationship with Joe and the importance of the halibut studies to our fishing community. At the end of the call Joe and I were very pleased to hear one official state, "this is a perfect example of what we are trying to accomplish."

**Scott McBain**, **Cliff Hart**, and I met with members of the California Coastal Commission, the Army Corps of Engineers, and the California Department of Fish and Wildlife to discuss the artificial reef project. The meeting was a regularly scheduled review of local projects hosted by **Adam Wagschal** who is back with the Humboldt Bay Harbor Recreation and Conservation District.

After our presentation, the Coastal Commission's **John Dixon** said the reef project needs to fall under Coastal Act Section 30233:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

1. New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
2. Maintaining existing, or restoring previously dredged depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
3. In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetlands, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.
4. In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
5. Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake or outfall lines.
6. Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
7. Restoration purposes.
8. Nature study, aquaculture, or similar resource dependent activities.

Mr. Dixon was unsure whether our reef project fell under any of these 8 categories, but remains open, saying his staff will give him recommendations based on our revised project description. He is concerned that the reef modules will not stay put and he questions its value in fish production. These are similar concerns that we have heard before, just at a higher level. The Corps of Engineers did not ask questions. When CDFW's local marine biologist **Rebecca Garwood** was asked about the Department's position on artificial reefing she said the Department currently does not have an artificial reef policy in place, but is currently working on one, and until that policy is in place, they do not support artificial reefing in California. She acknowledged there were multiple reef project inquiries up and down the coast. I considered this good news that CDFW is at least working on a plan. I also maintain we have the answers to all those hard questions. We have received much needed support from HSU and need to solicit political support. We need to resubmit our State Lands application then create a CEQA document which can be very expensive. We now have a much clearer picture of what is required to make this project successful.

The HASA Board of Directors met August 5th and the highlights of the meeting included a report from **Ben Doane** that the salmon on the Klamath River could be in serious trouble. He said this year's smolts are dying in the warm water and the adults

coming upstream will likely get the warm water disease ick. Hopefully the recent increased flow from Trinity Lake will alleviate the adverse conditions.

**Jimmy Yarnall** reported changes under consideration in sport Dungeness crab regulations

- Increase the recreational bag limit in District 10 (south of us) from 6 crabs to 10 crabs, which is consistent with our bag limit
- Requiring self-releasing mechanisms on crab pots (cotton that rots over time) to eliminate long-term killing of crabs from derelict pots
- Labeling of crab trap floats with owners ID
- Prohibiting setting gear for “rock crab” fishing 7 days prior to the opening of Dungeness season

HASA wrote a letter of support for these regulation changes. Jimmy also warned there could be more regulations from the upcoming whale entanglement meetings.

The board discussed hiring a professional bookkeeper. Our assets have grown to over the past few years and tax ramifications from our activities are becoming more complex. Membership continues to be a hot topic. We are working on a database to track membership and an easy method for folks to become members. We feel we represent all anglers and there are a few thousand registered on the HTC discussion board, but we have a much smaller number of paying members. Dues remains \$20 per year.

The Humboldt Bay Harbor, Recreation and Conservation District Commissioners have three seats up for election this November. 5th District incumbent, **Pat Higgins** will be challenged by **Susan Rotwien** and **Kyle Visser**. The 2nd District seat will be vacated by **Aaron Newman** and will be contested by **Larry Doss**, **Hezekiah Allen** and **James L. Roberts**. 1st District will pit incumbent **Greg Dale** against **Nick Angeloff**. 3rd District Commissioner **Mike Wilson** is running for County Supervisor but his seat is not up until 2017. If he wins the Supervisor election, his seat will become available. Although the HASA board has not endorsed any political candidates, we urge everyone to educate themselves on who they are and vote for those who are best qualified to support the harbor community without personal agendas. I personally would like to see the District more involved in recreational improvements like the artificial reef, improved boat access, winter boat storage, and on the water fuel pumps.



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# Winds Nearshore: What to look for in the summer months

By Brian Garcia

Senior Meteorologist, National Weather Service

The vast majority of ocean bound recreational fishing is done within a couple miles of the immediate coast. Over these coastal waters the winds can easily react to the coastal geography of the land, creating speed maximums and flow reversals. These can occur over limited areas, making it challenging to capture in a broad forecast. The following will discuss how to look for signatures in the forecast and how to decide on your own if these will happen during the summer months. The discussion will focus on the summer months.

Typically in the summer winds along the NW California coast are northerly (coming out of the north) with peak wind speeds in the late afternoon and early evening, and with lulls in the early morning. The reason behind the timing of these peaks and lulls has to do with the daytime heating across the interior.

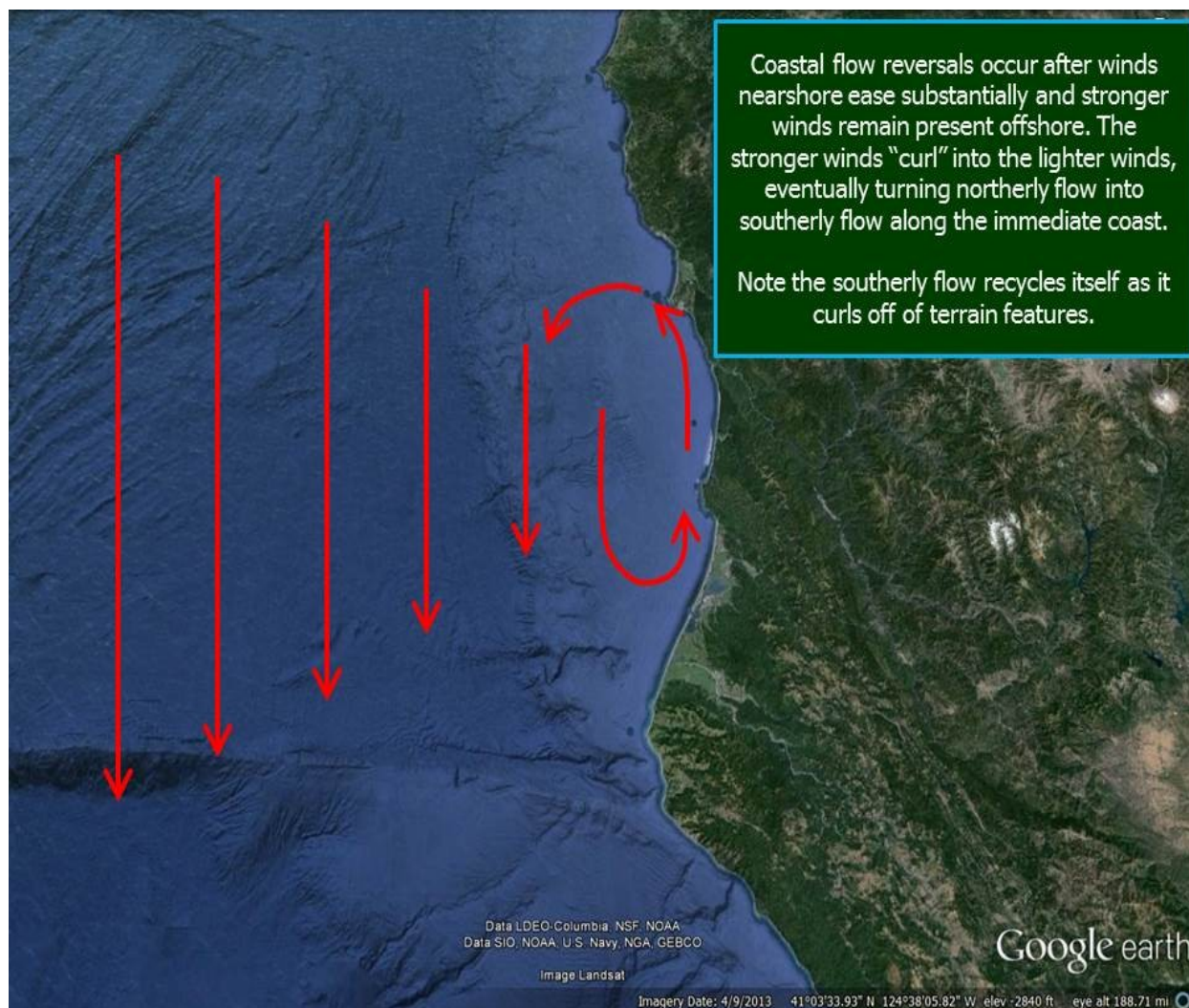


During the summer months the jet stream typically pushes to the north allowing for an "upper ridge" of high pressure to develop over the west coast. This causes heating at the surface across the interior and since hot air rises, the pressure at the surface decreases causing what is known as a thermal trough (or low pressure). See graphic. Peak heating generally occurs during the late afternoon, thus the lowest pressure at the surface is recorded at this time. Meanwhile over the coastal waters, the heating of the day does not have the impact on the ocean as it does land. While heating peaks during the day, the ocean temperatures do not heat and cool as rapidly as the land, so the surface pressure over the waters remains much more constant. Therefore, during the peak heating of the day the pressure difference (or gradient) between land and ocean is the strongest. It is this pressure difference that gives rise to the winds. The stronger the pressure difference, the stronger the winds. Generally the strongest winds occur in the late afternoon and early evening hours, but a compounding factor can be that of coastal terrain. Mountains along the coast, such as Cape Mendocino's King Range, can cause a pinching of the wind between the

land barrier and strong high pressure offshore. In these areas and downstream of these points, winds can accelerate to higher speeds than what is typically experienced. Imagine a river flowing through a narrow channel, the water would pile up on the upstream side and rush out on the downstream side. This is precisely what occurs in the lee of points, capes, and headlands during typical summer afternoons. While it is most pronounced around the great Capes such as Blanco and Mendocino, the same dynamics are at play around Point Saint George and even Trinidad Head. Knowing how this works can save you from a bumpy and dangerous afternoon ride.

Flow (or wind) reversals can be related to stronger winds offshore, especially in the overnight and early morning hours during typical summertime patterns. Though the inland thermal trough weakens in the evening hours and overnight, the strength of the East Pacific high does not, meaning that winds continue to flow at a near constant rate away from the coast. In this type of pattern winds can be blowing 20 knots at around 40 nautical miles out, while winds are beginning to ease immediately adjacent to the coast due to a weakening pressure gradient. As this occurs frictional forces begin to take over. The northerly flow of 20 knots offshore begins to "feel" the slower winds nearshore

and starts to turn toward them. Again, imagine a river where the flow is moving along just fine, but off to the edge of the flow is an inlet of nearly still water. With the flow moving along next to the inlet, it will eventually develop an eddy in that inlet. The same thing happens with the winds. These eddies can be rather compact and only extend a mile or two out from the coast, or they can be large and look like a hurricane south of areas like Cape Mendocino. Wind speeds can even match those of the winds offshore, but from the opposite direction.



How can you tell if either of these will occur? To determine the strength of the afternoon winds, look at the forecast temperatures inland and the strength of East Pacific high. These can be found on our webpage, [www.weather.gov/eureka](http://www.weather.gov/eureka) and the Ocean Prediction Center at [www.opc.ncep.noaa.gov](http://www.opc.ncep.noaa.gov), respectively. The higher the temps and stronger the high pressure, the stronger the winds will be in the afternoon. Flow reversal you'll want to look at the same items, but you'll also need to look at the wind direction over the outer waters (10 to 60 nm out). True north winds are most prone to flow reversals, while northwest winds will generally make it all the way to the coast.

These are rules of thumb and tend to work out more often than not. The best course of action is always to know your limits and remain within those. It's better to miss a day of fishing and live to see another day.

# Testing fish descenders

by Casey Allen

I felt fortunate to be invited to fish with NOAA Fisheries Research Assistant, Sabrina Beyer and her crew to test deep water release devices. Her funded project includes seven chartered rockfishing trips in Central California to determine which devices available on the market are most effective. I joined a trip out of Ft Bragg with Anchor Charter Boats aboard the Trek II with Captain Rick Thornton. We fished off Laguna Point at Mackerricher State Park north of Noyo Harbor.

If you follow HASA you might know that we have been promoting the use of fish descenders for a number of years. Because of their use the mortality rate of released endangered yelloweye rockfish was lowered by fisheries managers. The result was a lower bycatch mortality that allowed our rockfish season to remain open. In the past we had reached our yelloweye bycatch quota and rockfishing was closed early. The release devices allow fish suffering from barotrauma to reach a depth where the symptoms are reversed. Without the devices fish pulled from the depths cannot swim down by themselves because they are too buoyant from the expanded gas in their swim bladders. This leaves them vulnerable to predation. Poking holes in the swim bladder to release the gas causes damage to the fish and their survival is doubtful. But the ingenuity of fishermen has come up with an answer.

We tested 5 devices:

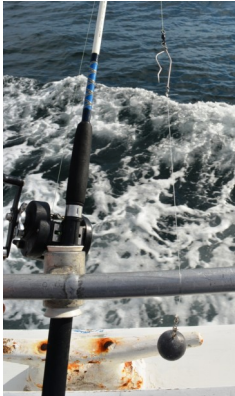
Shelton Fish Descender- simple inverted hook

Roklees- lip gripper design

SeaQualizer- pressure release programmed to release at either 50-100-150ft

Blacktip Catch-and-Release tool- large silver lip gripper that we set-up on a rope

Weighted milk crate – with rope



The Shelton Fish Descender can be rigged above your bait or lure or on a separate rod with weight below. It is around \$8.00



The RokLees Fish Descender is rigged the same as Shelton's. Cost is \$35.00 and requires a weight



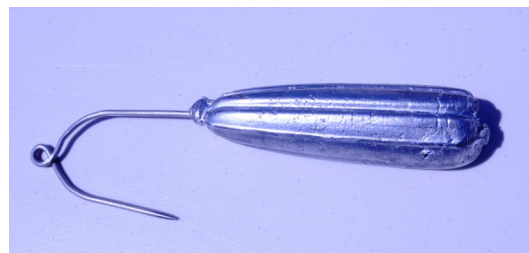
The SeaQualizer can be programmed to automatically release at 50, 100, or 150 feet. Cost is \$50.00 plus weight



The Blacktip Catch and Release Recompression Tool can be rigged on a rod or a rope and needs a weight. Cost is \$35.00



The milk crate with rope. Mostly home made, I could not find a supplier or price



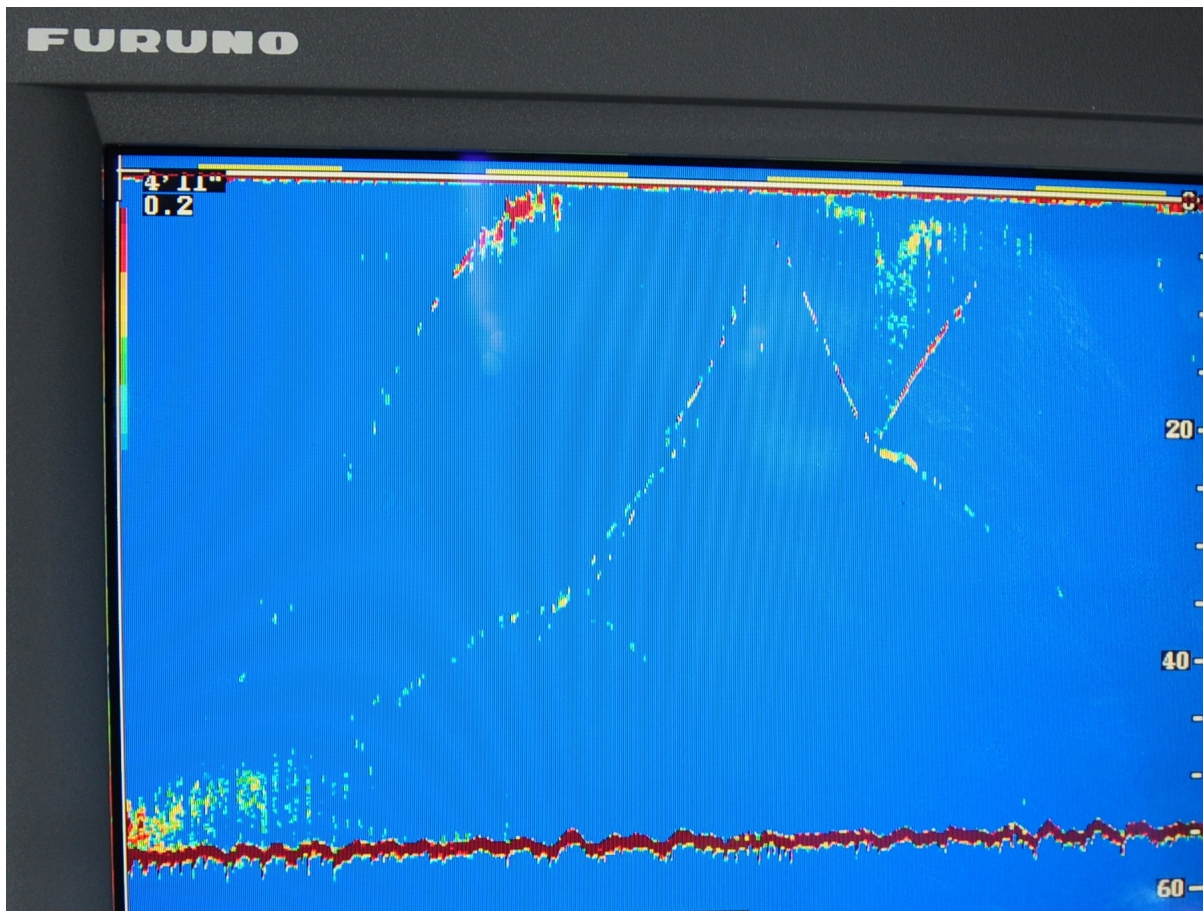
We did not test this home made release device but it works very well. Rigged on rod and reel it is easy to hold the lead while placing the fish in the water. This was made by Captain Phil Glenn using his wife's cast iron corn cooker.

The official results of the testing and the angler survey will be released at the end of this year. I liked the Shelton most because it was inexpensive and relatively easy to use. Rigged above your jig you can release your own fish and once down there you are fishing again. With a very large fish you may have to add weight to get down to depth. With this device, as well as the RockLees, it can be hard to tell if the fish was actually released. I reeled in one fish three times before it finally came off. You must jerk up on the rod like you are hooking a fish to get them off the device.

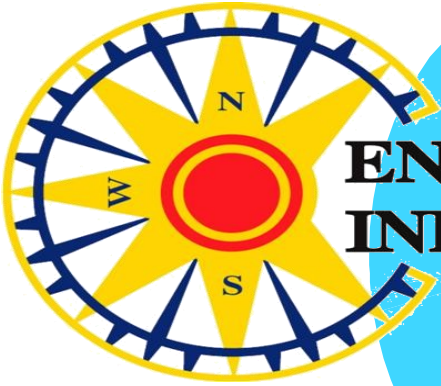
The SeaQualizer releases automatically at the chosen depth but is large and expensive. The RockLees is also large and will likely require a rope or heavy rod and line. The rope takes up space and is easily tangled. The milk crate will allow you to release multiple fish at once but still requires rope skills. Also dropping it into the water without spilling the fish out requires some skill.

Whichever device you use, it is my opinion the best method is to rig a separate rod for the release device. You do not need a large reel for this purpose. We often designate one angler to work the deck, unhooking fish, bleeding and placing them in the fish box. They also release the protected fish suffering from barotrauma. This eliminates chaos on the deck, gets the fish back in the water quickly, and keeps the anglers fishing.

Many thanks to Sabrina Beyer, Morgan Arrington and the crew at NOAA National Marine Fisheries Service who are looking for answers so we can protect our resource and keep fishing into the future.



I took this photo a few years ago aboard Reel Steel while fishing for science with Captain Tim Klassen. The orange on the bottom left is a wreck full of rockfish. The traces leading to the surface are fish being reeled in. The V shaped trace on the right is a fish being released on a fish descender and the trace at the bottom if the V is the fish swimming to the bottom. I cropped out the coordinates on the fish finder, it is too deep to sport fish anyway.



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