



Word on the Waves

a publication of the Fisheries Observation Science Program at the Northwest Fisheries Science Center

Observer Spotlight:

Carrie Yehle
At-Sea Hake Observer
Observer At-Large

The first thing you notice about Carrie Yehle is her energy. Curly-haired and athletic, she exudes excitement:

Get her talking about observing, marine science and fish and her enthusiasm bubbles over. Her exuberance is infectious. Spend five minutes with her and you'll wonder why you're not observing too.

As with many observers, Carrie came upon the profession by happenstance. She graduated from the Rochester Institute of Technology in Rochester, New York, with a biology degree and spent six years doing research and lab work. She chafed at the regimented work scheduled; the typical nine-to-five work week didn't

suit her. When her research contract with North Dakota State University came to an end in 2010, she took the opportunity to explore new options.

Observing piqued her interest. She liked its untraditional nature coupled with its contribution to fisheries management and preservation. She started in the Alaska program in 2011 and has worked in the At-Sea Hake program since 2012. Since she stepped on a ship, she hasn't looked back. "I'm exactly where I'm supposed to be," she says. "I never take it for granted that I have an amazing life that lets me be adventurous and hard-working."

Carrie has many 'favorite things' about her work. However, the part that gives her the most satisfaction is the everyday physical and mental challenges she faces working and living

on fishing vessels. Be it lifting heavy baskets of fish on a rocking deck, maintaining focus and drive to work efficiently and accurately or functioning effectively in inclement

weather, she knows these situations teach her about herself and what she can do.

Her favorite place to work is in Alaska where she has the opportunity to work



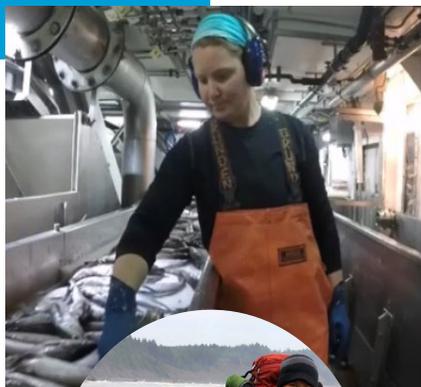
From the Program

Hello Observers!

In August, the Fisheries Observation Science (FOS) team attended the American Fisheries Society (AFS) annual meeting in Portland, OR. It was a week-long conference highlighting new research and developments in fisheries management and science. We also used this as an opportunity to have our annual FOS team meeting. As you know, we have six offices spread out from Seattle, WA to Morro Bay, CA. We're rarely in the same place at the same time. It was great to have an entire work week together, face-to-face.

Many FOS members were on the AFS speaking roster. John LaFargue discussed standardized safety training and our analyst team (Yong-Woo Lee, Kayleigh Somers, Jason Jannot) hosted talks regarding green sturgeon bycatch, effort and spatial analysis of gear switching under IFQs, and effects of observer coverage levels on bycatch estimation. Neill Riley, Cassandra Donovan, Yong-Woo Lee and Jason Jannot also exhibited scientific posters. One highlight for our program was San Francisco observer Kevin Stockman presenting on the green sturgeon tagging work that the program, other NOAA scientists, CDFW and fishers. Overall, we were very well represented at this first-ever observer symposium at AFS. I think made a great impression on all who attended. Check out our Kodak moments on page 6.

Most importantly, the week was about re-connecting and collaborating. At our team meeting, our observers were a primary focus and we touched on these topics: How can we make your data entry more efficient, more exact, and more useable? How can we keep you informed about how and



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Data Delivery Improvements

Neil Riley, Data Manager

The catch shares program was implemented in the west coast groundfish trawl fishery in 2011. The 100% observer coverage requirement nearly doubled the program's size over night. In addition to the 42 year-round and seasonal observers covering the non-catch share fisheries, 92 new catch shares observers were added. The increased coverage more than doubled the total number of covered trips. It also added new discard estimating and reporting requirements and procedures. The result was a flood of data and an increase in demand for its timely delivery.

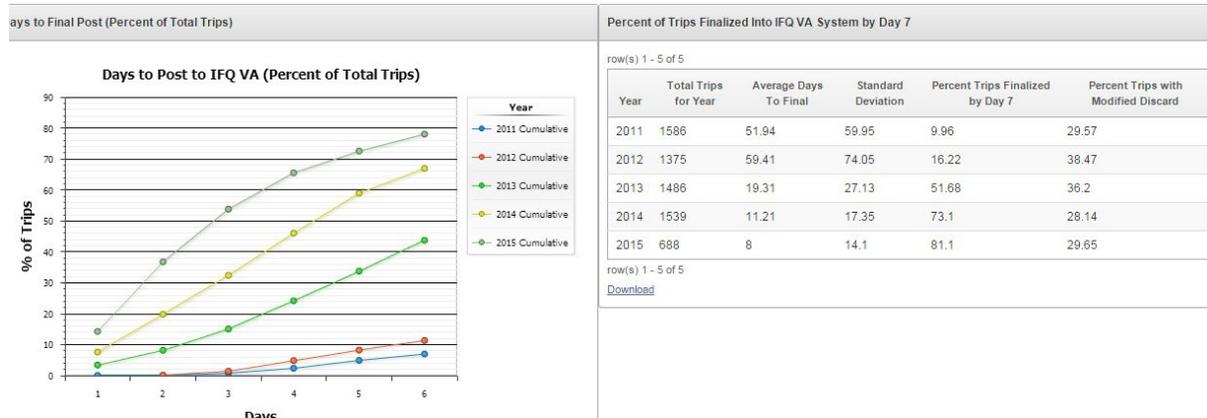
Improving data quality control measures and delivery procedures is an ongoing goal. To that end, we've developed an offline data entry appli-

cation used at-sea to provide accurate data to end-users in near-real-time. Our diligence has reduced the average time needed to report finalized observer data to the IFQ accounts (Refer to the figure below).

We strive to keep improving. Offline data entry is showing promise for faster data delivery and brings real-time data delivery a step closer. Incorporating scanners gives program staff immediate access to each observer's

raw data resulting in faster debriefings. We're exploring new technologies for direct data entry at the time of collection, i.e. tablets. This will potentially increase reporting speed, accuracy and reduce the number of paper forms used in the field.

Finally, I want to thank all of you for your dedication and hard work. These accomplishments would not be possible without all of you. Keep up the good work.



Trip Data Update

Hard to believe we're more than halfway through 2015. Here's how the year's work compares to 2014 between January 1st to August 31st.

	2015 WCGOP trips 1/1/15 to 8/31/15	2014 WCGOP trips 1/1/14 to 8/31/14
Catch Share	847	1412
Non-Catch Share	814	566
EFP*	21	7

* TNC RCA EFP trips are counted as Catch Share trips in this table

Observer with most sea days (2015): Thomas Gingrich with 127 days.

Observer with highest vessel count (2015): Russell Adams with 29 vessels.

From The Program - continued

where the data is being used? How can we educate others about observing and its role in fisheries management? These types of things are always forefront in our minds and efforts. Discussing them as a group yields good results. This year's no exception. From electronic data entry forms for the back deck to how to effectively tell the FOS story, we've got great things brewing.

A special thanks to observers Mike Lindley, Morgan Goding, Kevin Stockmann and Carolyn Yehle for joining us this year. It was great to have their participation and see their presentations at our team meeting.

As always, thank you for your hard work and dedication. If you have questions or concerns, my door is always open. Have a great fall season and stay safe out there.

Sincerely,

Jon T. McVeigh
Jon T. McVeigh
Program Manager



From the Galley

John LaFargue, CA Coordinator



Fishing for tuna off Southern California has been outstanding this year - and it shows no signs of slowing down! If you've ever wanted to catch tuna in the 30-50lb range, have a shot at 100+lb, and not spend an arm and a leg,

this is the time. A couple of friends are fishing nine miles off Dana Point as I write this. So far this morning, they've caught eleven 30-40lb yellowfin tuna. I recently returned from a trip down south with quite a bit of tuna myself. I've been experimenting with different tuna recipes, but keep coming back to poke.

Poke (POH-kay) is a Hawaiian dish meaning "cut piece" or "small piece". In essence, it's bite size pieces of raw fish tossed with a variety of seasonings. It seems every market and corner store in the islands carry several versions of poke. You can get it with different types of fish, seaweed, spicy, in kimchi seasoning or even blackened. In Hawaii, it seems like no gathering is complete without it. Every BBQ I went to while visiting had several versions.

I've been asking everyone I know for their poke secrets. As usual, there are a million different suggestions. High quality fish is the only common thread. Our Morro Bay debriefer and resident tuna hunter, Eli Coplen, suggested adding ginger juice instead of chopped ginger. Another tip comes from David Itano, a tuna researcher and Hawaiian friend. He suggests salting the chunks of fish for an hour before adding the other seasonings. This allows the salt to penetrate the fish without wilting other ingredients. I've eaten his poke and can confirm it is right up there with the best. He was generous enough to give us his family recipe.

Whatever ingredients you decide to use, make sure they are fresh and of high quality. This dish depends on it. You won't be able to hide or cover up poor quality here. Also, make more than you need. Friends always seem to stop by when poke hits the table...just ask Jon McVeigh.

Onoliscious Do-It-Yourself Poke

Adapted from David Itano's family recipe

Step #1

Cut raw fish into ½" to ¾" cubes. Tuna or marlin is commonly used. Blanched octopus, squid, marinated mussels, surf clam, or cooked/peeled shrimp are also options.

Salt to taste, judiciously. You'll be adding soy sauce later. Hawaiian pink salt is highly recommended.

Mix thoroughly. Let stand for an hour in the fridge. After an hour, add chili pepper flakes or diced fresh chilies to taste and mix thoroughly. Hot chili garlic sauce also works.

Step #2

In a separate small container, combine:

- 2-3 Tbsp of sesame oil. Not too much!
- good dash of chili pepper
- water to dilute and mix **or** 1/4 cup shoyu. Be cautious with the shoyu if you used the Hawaiian salt. Aloha Shoyu or Kikkoman Lite are good choices.

Set aside.

Step #3

Prepare add-in ingredients. Many pokes are based on green onions, or special seaweeds like ogo (*Gracilaria* spp), inamona (prepared kukui nut) sweet Maui onions, or Kimchi flavored with hot Kimchee paste added. Use your imagination and whatever you have on the shelf or in the cupboard.

Here are some suggestions. Use in them various combinations.

- Diced green onions
- Slivered Maui or sweet onions
- Grated or crushed ginger root
- Diced celery
- Diced tomatoes (remove soft centers)
- Slivered sweet red bell pepper
- Ogo seaweed (sometimes you can find it dehydrated or even fresh in Asian markets)

The Finale

A half hour before serving, pour the liquid onto the fish and mix.

Add inamona (kukui nut) or toasted white sesame seeds. (optional)

Add prepared vegetables and toss. Green onions should be put in last as they are very delicate.

Let it stand to blend flavors.
Serve and enjoy!



Green Sturgeon Tagging Studies Underway

Kevin Stockman, West Coast Groundfish Observer stationed in San Francisco

The anadromous green sturgeon occurs in the nearshore Pacific Ocean from Alaska to Mexico. Green sturgeon are known to spawn in only three rivers: the Sacramento and Klamath Rivers in northern California and the Rogue River in southern Oregon. After juveniles leave their natal river and estuary at about age four, they spend at least ten years widely roaming the ocean before reaching sexual maturity and returning to spawn. Green sturgeon can be encountered anywhere along the Pacific Coast.

In 2001, NOAA Fisheries conducted a biological review and determined that the species (*Acipenser medirostris*) should be divided into a two distinct population segments for conservation purposes. Fish that spawn in the Klamath and Rogue Rivers are the northern Distinct Population Segment (DPS) and the fish that use the Sacramento River are the southern DPS. In 2006, the southern DPS was listed as Threatened under the Endangered Species Act. NOAA Fisheries manages the northern DPS as Species of Concern.

The retention of green sturgeon is not permitted in any federal or state fishery. Fisheries bycatch in the West Coast trawl fisheries is one of several known threats to these long-lived, late-maturing fish. WCGOP observers have an important role in collecting data to help improve the science and conservation management of green sturgeon. Observer data is the primary source for estimating the frequency and impact of fisheries bycatch. Genetic analysis of fin clips taken by observers has helped elucidate the ranges and migration patterns of each population segment. Length data from observers has contributed to life-stage population modeling.

In 2014, Observers in the San Francisco Bay area began implanting PIT tags into all bycaught green sturgeon. The purpose of this study is to determine re-capture rates. As part of our sampling, all sturgeon are scanned to determine whether they have been previously caught. So far, there

have only been a couple of re-captures, over time we expect to develop a re-capture rate estimate that will help with management of the species. Two fish that have been re-captured were caught on consecutive hauls. If you are releasing a sturgeon on a trawler, you should alert the skipper that you'd like to release the fish in a way to minimize the likelihood that it is recaptured in the subsequent tow.



In 2015, NOAA Fisheries West Coast Region, Protected Resources Division, launched a satellite tagging program in collaboration with WCGOP, the California halibut trawl fisherman and the California Department of Fish and Wildlife. The primary goals of this research study are to develop an estimate of post-release mortality for green sturgeon bycatch and to bring the fishing fleet and NOAA fisheries together in a way that will support conservation measures that may be necessary for the sustainability of the California halibut

trawl fishery. Fisherman and observers were trained to attach satellite tags to sturgeon by threading a monofilament line through the flesh below the sturgeon's dorsal fin. The tags record depth and acceleration for thirty days before separating from the fish and transmitting data. As of the end of August, twenty eight tags have been deployed, mostly by observers. The estimated post-release mortality rate from this study will inform NOAA Fisheries' recovery and take-reduction efforts for green sturgeon and for other ESA-listed sturgeons (Atlantic, shortnose, Gulf) impacted by trawl fisheries.

Few people will have the opportunity to see and handle a green sturgeon. If you are observing where green sturgeon may be encountered, make sure you are prepared to sample and release a green sturgeon properly. The information you collect will help these fish survive into the future.

photo compliments of
Kevin Stockman.

Fisheries News

NOAA recently released the [Status of Stocks 2014](#) report. The good news is over-fishing and overfished stocks are hitting record lows.



The White Abalone lives off the California coast and has been an endangered species since the 1970's. NOAA recently spotlighted the invertebrate in its *Fish News* publication. [Here's](#) their article. They also

have a [podcast](#) about breeding the White Abalone in captivity. This is part of NOAA's *Species in the Spotlight* series. Click [here](#) for the complete feature.

There's a new blue! Blue rockfish that is. Researchers have concluded that the popular Blue Rockfish (*Sebastes mystinus*) is actually two species. Here's an [article](#) from Oregon State University with details.

As climate and ocean health are intricately linked, we thought you'd be interested in this [article](#) on a record-setting toxic algae bloom currently infesting the north Pacific. The bloom houses toxic species that are harming fisheries stocks along the west coast.

And finally, National Public Radio (NPR), recently released three fish-related segments. The first is about a [huge fish farm](#) planned near San Diego. The second discusses a [new model for chefs and fishermen](#) to connect. The third piece explores the [fine art](#) of *gyotaku* or "fish rubbing".

Octopus print compliments of Heather Fornter via National Public Radio's website.

We wanna know!

Contracts will be ending and exit debriefings will take place soon. Please remember to complete an end-of-year/exit survey. We take your comments and ideas to heart. We use them to gauge our effectiveness and improve the program. Please don't skip them! Thanks.

Featured Observer - continued

on longliners. She likes their smaller crew size which promotes a team atmosphere. They also afford her more deck time where she can fully enjoy being at sea. Fair weather or foul, day or night, she loves being out there.

When not at sea, Carrie's on the go. She's hiked all over the U.S., including Alaska and Hawaii, spent two months trekking in Patagonia and has been to the summit of Kilimanjaro. She rode her bicycle from New Orleans to Minnesota last year and plans to ride from Seattle to San Diego in 2016. She's also preparing to complete a thru-hike of the Appalachian Trail next year. In between these trips, she travels and road trips around the country visiting family and friends.

She confesses her bucket list is ever-expanding. She'd like to ride her bike in Europe, climb to Mt. Everest's base camp (elevation 17,600ft) and run foot races in all 50 states. The biggest item on her list is her most ambitious: to inspire others to make their dreams a reality so they can experience positive change in their lives and by extension, the world.

We hear "live your dream" all the time. It's rare to come across someone who actually does. Carrie is one of those people. Happily for the Fisheries Observation Program, her dream includes putting her abundant energy into going to sea and collecting fisheries data. Thanks for your time, commitment, hard work and especially your passion, Carrie. We are very grateful and deeply inspired.



2015 Annual Fishery Society Meeting: Kodak Moments

The week at Annual American Fisheries Society (AFS) meeting was a busy one. Posters to view, talks to attend, people to catch up with. There wasn't a lot of time for pulling out the cameras and phones, but there were a few. Here are some Kodak moments.

Again, many thanks to Mike Lindley, Morgan Golding, Carrie Yehle and Kevin Stockman for joining us. Their input was invaluable.

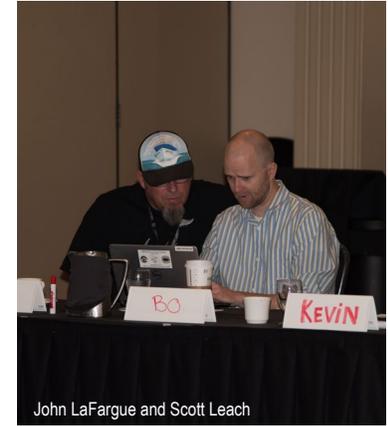
If you'd like to know more about the event or are interested in attending next year's meeting, please talk to your debriefer or contact Rebecca Hoch: rebecca.hoch@noaa.gov.



Bo Whiteside, Kevin Stockman, Scott Leach and John Bieraugel



Mike Lindley



John LaFargue and Scott Leach



Carrie Yehle



Yong-Woo Lee, Kayleigh Somers and Jon McVeigh



Ryan Shama, Neil Riley, Kate Guthrie, Vanessa Tuttle, John Bieraugel



Neil Riley, Jason Vestre
John Bieraugel,
John LaFargue



Jon McVeigh and
Farin McVeigh



Carrie Yehle, Morgan Golding, Kevin Stockman, Mike Lindley



Taylor Howe, Carrie Yehle, Phillip Bizzel, Jen Cramer



Eli Copen, Phillip Bizzel, Jason Vestre,
Alex Perry, Eric Brasseur



FOS Team and guests



Toby Mitchell, Ryan Shama, John LaFargue,
Rebecca Hoch, Taylor Howe