

James T Montonye

WRIA-1 Planning Unit Fishers Caucus

1/28/2018 8:17:41 PM

Interested in enforcement picture throughout the North Pacific as per the attached. Will come but would like to see the 1pm topic outline. Thanks!

Dragnet

A new satellite-based surveillance system will keep a sharp eye on those plundering the oceans

THE *Yongding* is something of a ghost ship, disappearing and changing her name many times, along with her flag of registration. The 62-metre vessel was last spotted on January 13th in a marine conservation area in the Southern Ocean, blatantly hauling up outlawed gill nets laden with toothfish, a catch so prized that it is known as “white gold”. Interpol is seeking information about who operates the ship and profits from its activities, as well as those of two accompanying vessels, *Kunlun* (pictured above, landing a toothfish) and *Songhua*. In the vastness of the open ocean, policing vessels like *Yongding*, *Kunlun* and *Songhua* is hard. But it is about to get easier—for with just a few mouse clicks a satellite-based monitoring system, unveiled this week, will be able to compile a dossier of evidence about even the most clandestine fishing operations.

The scale of illegal and unreported fishing is, for obvious reasons, difficult to estimate. The Pew Charitable Trusts, an American research group, has nevertheless had a stab at it. It reckons that around one fish in five sold in restaurants or shops has been caught outside the law. That may amount to 26m tonnes of them every year, worth more than \$23 billion. This illegal trade, though not the only cause of overfishing, is an important one. Stamping it out would help those countries whose re-

sources are being stolen. It would also help to conserve fish stocks, some of which are threatened with extinction. It might even (if the more apocalyptic claims of some ecologists are well founded) slow down the journey towards a wider extinction crisis in the oceans.

A global game of hide and seek

The new monitoring system has been developed by the Satellite Applications Catalogue, a British government-backed innovation centre based at Harwell, near Oxford, in collaboration with Pew. In essence, it is a big-data project, pulling together and cross-checking information on tens of thousands of fishing boats operating around the world. At its heart is what its developers call a virtual watch room, which resembles the control centre for a space mission. A giant video wall displays a map of the world, showing clusters of lighted dots, each representing a fishing boat.

The data used to draw this map come from various sources, the most important of which are ships’ automatic identification systems (AIS). These are like the transponders carried by aircraft. They broadcast a vessel’s identity, position and other information to nearby ships and coastal stations, and also to satellites. An AIS is mandatory for all commercial vessels, fishing boats included, with a gross tonnage of

more than 300. Such boats are also required, in many cases, to carry a second device, known as a VMS (vessel monitoring system). This transmits similar data directly to the authorities who control the waters in which the vessel is fishing, and carrying it is a condition of a boat’s licence to fish there. Enforcement of the AIS regime is patchy, and captains do sometimes have what they feel is a legitimate reason for turning it off, in order not to alert other boats in the area to profitable shoals. But the VMS transmits only to officialdom, so there can be no excuse for disabling it. Switching off either system will alert the watch room to potential shenanigans.

The watch room first filters vessels it believes are fishing from others that are not. It does this by looking at, for example, which boats are in areas where fish congregate. It then tracks these boats using a series of algorithms that trigger an alert if, say, a vessel enters a marine conservation area and slows to fishing speed, or goes “dark” by turning off its identification systems. Operators can then zoom in on the vessel and request further information to find out what is going on. Satellites armed with synthetic-aperture radar can detect a vessel’s position regardless of weather conditions. This means that even if a ship has gone dark, its fishing pattern can be logged. Zigzagging, for example, suggests it is longlining for tuna. When the weather is set fair, this radar information can be supplemented by high-resolution satellite photographs. Such images mean, for instance, that what purports to be a merchant ship can be fingered as a transshipment vessel by watching fishing boats transfer their illicit catch to it.

As powerful as the watch room is, though, its success will depend on govern- ▶▶

ments, fishing authorities and industry adopting the technology and working together, says Commander Tony Long, a 27-year veteran of the Royal Navy who is the director of Pew’s illegal-fishing project. Those authorities need to make sure AIS and VMS systems are not just fitted, but are used correctly and not tampered with. This should get easier as the cost of the technology falls.

Enforcing the use of an identification number that stays with a ship throughout its life, even if it changes hands or country of registration, is also necessary. An exemption for fishing boats ended in 2013, but the numbering is still not universally applied. Signatories to a treaty agreed in 2009, to make ports exert stricter controls on foreign-flagged fishing vessels, also need to act. Fishermen seek out ports with lax regulations to land illegal catches.

Preserving Nature’s bounty

One of the most promising ideas for using the watch room is that shops could employ its findings to protect their supply chains, and thus their reputations for not handling what are, in effect, stolen goods. Governments sometimes have reason to drag their feet about enforcing fisheries rules. Supermarkets, though, will generally want to be seen as playing by them. The watch room’s

developers say they are already in discussions with a large European supermarket group to do just this.

The watch room will also allow the effective monitoring of marine reserves around small island states that do not have the resources to do it for themselves. The first test of this approach could be to regulate a reserve of 836,000 square kilometres around the Pitcairn Islands group, a British territory in the middle of the South Pacific with only a few dozen inhabitants.

The Pitcairn reserve, which may be set up later this year, will be one of the world’s largest marine sanctuaries. By proving that the watch room can keep an eye on such a remote site, its developers hope other places with similar requirements will be encouraged to get involved.

The watch-room system is, moreover, capable of enlargement as new information sources are developed. One such may be nanosats. These are satellites, a few centimetres across, that can be launched in swarms to increase the number of electronic eyes in the sky while simultaneously reducing costs. Closer to the surface, unmanned drones can do the same. The watch room, then, is a work in progress. But in the game of cat and mouse that enforcing fishing regulations has become, it will give the cat an important advantage. ■

Satellites Help Reel In Fish Poachers

Dr. Public Comment
February 2018

By ROB TAYLOR

CANBERRA, Australia—Researchers in Australia and the U.S., backed by Microsoft Corp. co-founder Paul G. Allen, are using satellites to fight illegal fishing—which causes billions of dollars a year in commercial losses and depletes stocks.

With the world's third-largest fishery zone covering 3.5 million square miles, Australia is at the forefront of efforts to combat poaching. Its patrol ships have chased illegal trawlers almost as far as South Africa, a distance of 4,600 miles, to stop the plunder of prized Patagonian toothfish—sold in the U.S. as Chilean sea bass.

Australian government scientists and Vulcan Inc., Mr. Allen's private company, have developed a notification system that alerts authorities when suspected pirate vessels from West Africa arrive at ports on remote Pacific islands and South America.

The system relies on anti-collision transponders installed on nearly all oceangoing craft as a requirement under maritime law. These devices are detectable by satellite.

A statistical model helps identify vessels whose transponders have been intentionally shut off. Other data identify fishing boats that are loitering in risk areas, such as near national maritime boundaries.

"We can shine a spotlight on vessels acting suspiciously based on factors including the vessel's history, movement and whether its transmitter has been intentionally disabled," said Chris Wilcox, who helped develop the system for Australia's Commonwealth Scientific and Industrial Research Or-



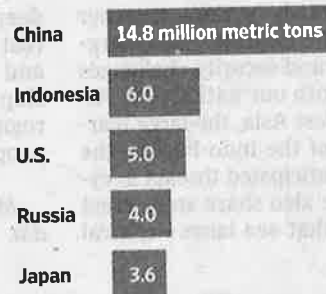
AUSTRALIAN BORDER FORCE/MINHUA/ZUMA PRESS

Australian officers prepared to board an illegal fishing vessel at Dianne Bank, 250 nautical miles northeast of Cairns, in September.

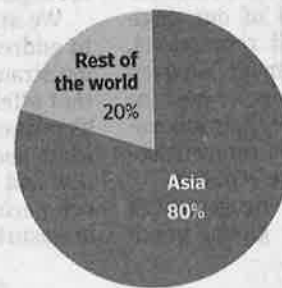
Hook, Line and Sinkers

The global fishing fleet, much of it from Asia, is expected to have nearly 10 billion mouths to feed by 2050.

Biggest fisheries catches, 2014



Motorized fishing vessels, 2014



Source: U.N. Food and Agriculture Organization

THE WALL STREET JOURNAL.

ganization.

"On one hand you can't see them [if their transponder is switched off], but on the other it means they've just flagged themselves as avoiding surveillance, and as a risk indicator, that's at the top of the list," he said.

Illegal fishing is estimated to account for 11% to 19% of the global catch, according to Australia's government and the United Nations Food and Agriculture Organization. And

one-third of all fish sold in the U.S. is believed to be caught illegally.

Seafood consumption in wealthy nations has soared in recent decades, increasing reliance on imports.

Illegal fishing can be highly lucrative because violators don't pay duties or taxes on their illegal catches. And it is nearly impossible to detect illegally caught products when they enter the global seafood market, Dr. Wilcox said.

Poachers ignore catch quotas intended to protect species from overfishing and use outlawed equipment, including nets stretching 15 miles or more that scoop up everything in their path. Illegal fishing causes commercial losses of as much as \$23 billion a year worldwide, according to the U.N.

Nearly half the world's population relies on seafood as a primary source of protein, the Commonwealth Scientific and Industrial Research Organization says, and demand is expected to grow. Fish exports were valued at about \$148 billion in 2014, U.N. statistics show.

The researchers' satellite-based tracking tool will begin operating in October and will be free to access. It was set up in response to a treaty aimed at eradicating illegal fishing that came into force last June. The Agreement on Port State Measures had agreement from 29 countries, including African nations previously linked to illegal fishing.

"Countries that use this new tool will now be able to reverse the tide of illegal fishing and help rebuild depleted fish stocks," said Mark Powell, illegal fishing program officer for Vulcan.

China is the world's largest seafood producer, followed by Indonesia, the U.S. and Russia. The most critical area for poaching is off the coast of West Africa, where illegal, unauthorized and unregulated fishing accounts for an estimated 40% of fish caught, according to the World Ocean Review. Other areas of concern include the western and southern Pacific and the southwest Atlantic. Illegal trawlers contribute to overfishing that threatens marine ecosystems and food security in some of the poorest countries.



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Feb 2, 2018

RE: Agenda Item D-2

Chairman Hull and Council Members,

A great deal of consideration has been put into the Fee Analysis Update and is appreciated. As we are all dedicated to making the best data-informed decisions possible, we would like to draw the attention of the Council to the following items:

In the analytical considerations in the Fee Analysis Update, we appreciate the use of the OAC approach to base the analysis on reference points to inform the fee levels, and would also like to stress the importance of allowing for some variability and not necessarily constricting management to a minimum coverage rate reference point. Until these criteria and reference points are analyzed, we caution against any emphatic statements of the necessity of an across the board observer fee increase and eliminating flexibility in funding in response to fishery management objectives.

We respectfully request that the Council continue to prioritize evaluating and developing strategies to increase coverage rates in the partial coverage observer program. We recommend continuing to partner with the Observer Advisory Committee subgroup established Summer 2017 that is dedicated to exploring the issue of low coverage rates with Council and Agency staff. On the Fee Analysis Update timeline, the production of a document for review by the OAC is tentatively scheduled for May/June of 2018. In order to provide enough time for review and further discussion by the OAC that may be useful in the development of the 2019 Annual Deployment Plan, we ask that the progress report be made available to the OAC subgroup prior to the May 16 OAC meeting.

We would also like to caution against the utilization of a budget based on a single stock projection, especially when 2018 is likely to be anomalous (Please see Methodology section of the Fee Analysis Update).

Respectfully,



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President, North Pacific Fisheries Association

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February 1, 2018

Mr. Dan Hull, Chair
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NOAA Fisheries, Alaska Region
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RE: Agenda Item D2 Observer and Electronic Monitoring Projects

Dear Chairman Hull, Dr. Balsiger and Council Members:

Thank you for taking comments on prioritization of the North Pacific Observer Program and Electronic Monitoring (EM). More observer coverage is needed in the Gulf of Alaska (GOA) trawl stratum. The GOA trawl bycatch management plan would have implemented full coverage through a catch share system, and while 100% observer coverage was widely accepted (list of public comments attached), the entire program was tabled. No solution has been introduced to alleviate the concerns that motivated discussion for a bycatch management plan, including providing mechanisms to control and reduce bycatch, and creating accountability measures when utilizing target, secondary, and Prohibited Species Catch (PSC) species.¹ **The Council should therefore reopen this discussion and initiate a separate management strategy for full observer coverage in the GOA trawl fleet.**

Fisheries throughout Alaska are managed with both target species limits and with PSC caps. The majority of those with PSC limits are monitored with 100% observer coverage to accurately identify and measure bycatch species. For example, Amendment 80 Fisheries in the Bering Sea and Aleutian Islands (BSAI) have PSC limits for Pacific halibut mortality, herring bycatch, Tanner crab (*C. opilio* and *C. bairdi*) bycatch, and red king crab bycatch; full observer coverage is part of the Amendment 80 groundfish catch share program. Amendment 80 was implemented to reduce bycatch and minimize waste by reducing discards, and required full observer coverage to collect bycatch data and monitor compliance.² The GOA trawl fisheries have PSC limits and should have full observer coverage, however instituting a catch share program should not be the only mechanism through which 100% observer coverage is employed.

Pacific halibut is a PSC species and its bycatch sometimes nears, reaches, or exceeds 100% of the limit. Last year the deep water species complex trawl fishery caught 96% of its PSC limit (766 metric tons of the 800 metric ton limit).³ Seasonally, the fleet caught 100% of its PSC limit during each of the first two seasons of 2017. Similarly, the shallow water species complex trawl fishery caught 101% and 100% of the halibut PSC limit in the first two seasons of the year. This highlights the critical need to monitor

¹ NPFMC meeting, October 9, 2012, D-1(a) Council Motion - GOA Trawl PSC tools

² <https://www.federalregister.gov/documents/2007/05/30/E7-9828/fisheries-of-the-exclusive-economic-zone-off-alaska-allocating-bering-sea-aleutian-islands-fishery>

³ https://alaskafisheries.noaa.gov/sites/default/files/reports/car150_goa_halibut_mortality2017.pdf

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halibut bycatch in trawl fisheries that are managed as much based on their bycatch limits as their target catch limits to ensure the bycatch caps are being upheld.

Determining and applying discard mortality rates (DMR) to Pacific halibut in different fisheries is an important component of halibut bycatch management. A PSC limit is not managed by the amount of halibut caught but by the amount of halibut killed. To calculate the DMR, halibut need to be assessed by observers for injuries, viability, and the likelihood of survival. Collecting halibut viabilities is an important observer task, however, in 2015 NMFS recorded viabilities for only 0.2% of estimated halibut caught on sampled hauls of GOA trawl vessels.⁴ That means 1 halibut was assessed by an observer for every 500 caught during 2015 in GOA trawl fisheries. Of the 3,828 hauls sampled for the GOA trawl fleet in 2015, halibut viabilities were collected on 97 hauls (while halibut lengths were collected on 1,112 hauls).⁵ The most recent DMRs accepted for GOA pelagic trawl vessels are 100% and non-pelagic trawls between 62-84%,⁶ but these numbers are based on a small fraction of halibut caught in trawls, handled by fishermen, assessed by observers, and released back to the ocean. Higher observer coverage can yield more halibut data, and better DMRs could be calculated and applied to trawl fisheries to monitor PSC caps.

Chinook salmon are another PSC species which can directly affect trawl fisheries in the GOA. Just as there are concerns over sampling a representative number of halibut, NMFS has been unsuccessful at meeting its goal of a representative sample of salmon bycatch in the GOA pollock trawl fleet.⁷ Potential solutions to increase salmon bycatch monitoring and decrease any possible biases from observed trips delivering to tender vessels were discussed during the October 2017 Council meeting.⁸ A straightforward solution is 100% observer coverage on trawl vessels delivering to tenders, an option proposed in the 2016 Observer Annual Report. Opposition to that solution argues that it is difficult to predict which trips will deliver to tenders, therefore making it difficult to know if an observer is needed for that trip and offload; a straightforward solution is 100% observer coverage on all GOA pollock trawl vessels.

There is public support for full observer coverage of the GOA trawl fleet. During discussion of the trawl bycatch management plan, thirty companies, non-profits, vessel owner/operators, and Alaska citizens

⁴ Armstrong, J., J. Cahalan, L. Chilton, D. Evans, M. Fey, M. Furuness, J. Gasper, B. Leaman, C. Rilling, and I. Stewart. 2016. Halibut Discard Mortality Rates for the Alaska groundfish fisheries, Discussion draft, April 2016 (Agenda Item C7). NPMFC, Anchorage, AK, 46 p.

⁵ Id.

⁶ December 2017 NPFMC meeting agenda item C5: GOA Groundfish SAFE Report and 2018/2019 Harvest Specifications

⁷ See Chapter 3 concerning the coverage rates for dockside monitoring and tendering activity and Chapter 5 concerning Observer Program complaints on Gulf of Alaska salmon bycatch: Alaska Fisheries Science Center and Alaska Regional Office. 2017. North Pacific Observer Program 2016 Annual Report. AFSC Processed Rep. 2017-07, 143p. AFSC, NOAA, NMFS, 7600 Sand Point Way NE, Seattle, WA 98115

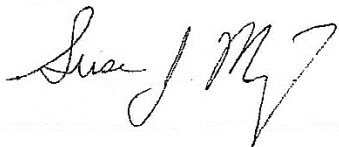
⁸ October 2017 NPFMC meeting agenda item C5: Observer issues associated with delivering to tender vessels, draft scoping paper for the Observer Advisory Committee

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offered public comment⁹ in support of plan alternatives that included 100% observer coverage. Those groups include GOA coastal city councils, fishermen, conservation organizations, and Native Alaskan tribal councils.

Observer coverage is fundamental to effective fisheries management. More coverage yields more data which results in better management. A goal of the proposed GOA trawl bycatch management plan was to include measures for improved monitoring and reporting. Tabling the discussion of a catch-share program for the GOA trawl fleet does not remove that need and should not hinder the Council and NMFS from implementing a full coverage management strategy.

Sincerely,

A handwritten signature in black ink, appearing to read "Susan J. Murray". The signature is written in a cursive style and is positioned above a horizontal line.

Susan Murray
Deputy Vice President, Pacific
Oceana

⁹ C5 GOA Trawl Bycatch Management – Discussion Paper Public Comments, June 2016
http://legistar2.granicus.com/npfmc/meetings/2016/6/939_A_North_Pacific_Council_16-06-06_Meeting_Agenda.pdf