

SCOMM

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THE POOR QUALITY OF THE ORIGINAL**

STDK

VMS Presentation

3/9/2007

AK State Leg

Vessel Monitoring System Overview

**NOAA Fisheries Office For Law
Enforcement**

NOAA Office For Law Enforcement Snapshot

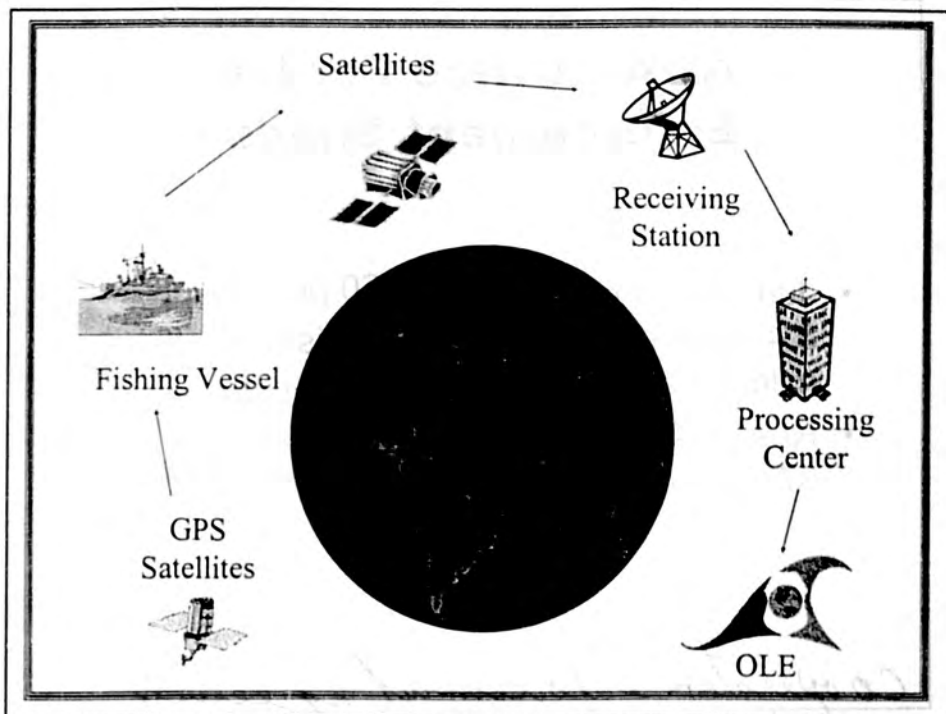
- Jurisdiction of over 3.4 million square miles of ocean
- Responsible for over 37 statutes
- 260 personnel
- 6 divisional offices
- 59 field offices

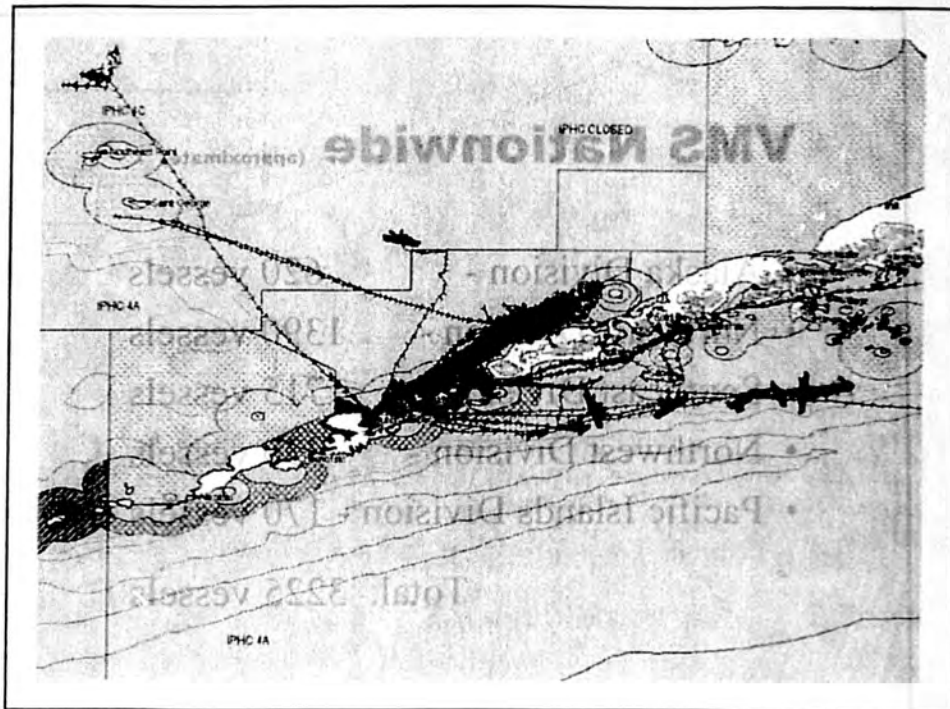
*Cooperative enforcement agreements
deputization of State enforcement for
joint enforcement of fed reg's
15 m/yr. annually ~ 1-1.7 mil.*

Vessel Monitoring System Overview

What is VMS?

A fisheries monitoring system predominately utilizing secure shipboard navigation / communication hardware and satellites to provide land-based fishery managers with near real-time position and activity reports specific to individual vessels.





Where is VMS?

In use by fishery management authorities in nearly every coastal nation in the world. States, nations, sub regional and regional organizations have adopted the use of VMS as a key tool in meeting their stewardship responsibilities in protecting their ocean environment.

VMS Nationwide (approximate)

- Alaska Division - 620 vessels
- Northeast Division - 1390 vessels
- Southeast Division - 715 vessels
- Northwest Division - 330 vessels
- Pacific Islands Division - 170 vessels

Total: 3225 vessels

What Does VMS Do?

A VMS is useful for management authorities and fishing vessel operators in several ways:

***Enhance** the monitoring, control and surveillance (**MCS**) of fisheries in a **cost-effective manner**. Traditional MCS methods, such as aerial and surface patrols, are deployed randomly, or based on assessments of historical vessel activity and third party information. This is an inefficient and expensive use of personnel and equipment, and the coverage of these traditional methods is relatively limited.

*VMS **continually informs** the management authority of the location of each participant in a fishery at all times, at a **fraction of the cost** of traditional methods. The VMS database can also consolidate other information about vessels and operators (e.g. vessel characteristics, contact information, licenses and registries, etc.), making this information available in one convenient location.

What Does VMS Do?

(cont)

Deterrence of unauthorized fishing. On-board VMS equipment reminds the vessel operator that the management authorities are monitoring the vessel's activity. This may encourage operators to conform to fisheries regulations, if they believe that enforcement action will result from unauthorized activity that is detected.

VMS provides documentation of activity and alleged violations. The VMS shipboard unit automatically generates position reports from a vessel, which are then validated and compiled at the fishery monitoring centers. The system safeguards the information in a manner that complies with evidence-handling rules and guidelines for potential legal proceedings. The information may be acted upon immediately, or it may be stored for subsequent investigation.

What Does VMS Do?

(cont)

Efficient patrols can be **planned** using VMS. Allows fishery agencies to deploy patrol assets effectively. Searching and travel times are reduced because the location of the fishing fleet and individual vessels known in advance.

VMS can assist in conducting **effective dockside inspections**. Can provide advance notice to fishery inspectors of routine arrivals into port by all fishing vessels.

VMS equipment and service offers **affordable and secure communications**. The fishery management authority may authorize the use of the VMS unit as a communications device. If the equipment is capable of this function, it may provide relatively cost-effective and secure communications for many purposes (arranging for sale of fish in advance of landing the fish in port)

What Does VMS Do?

(cont)

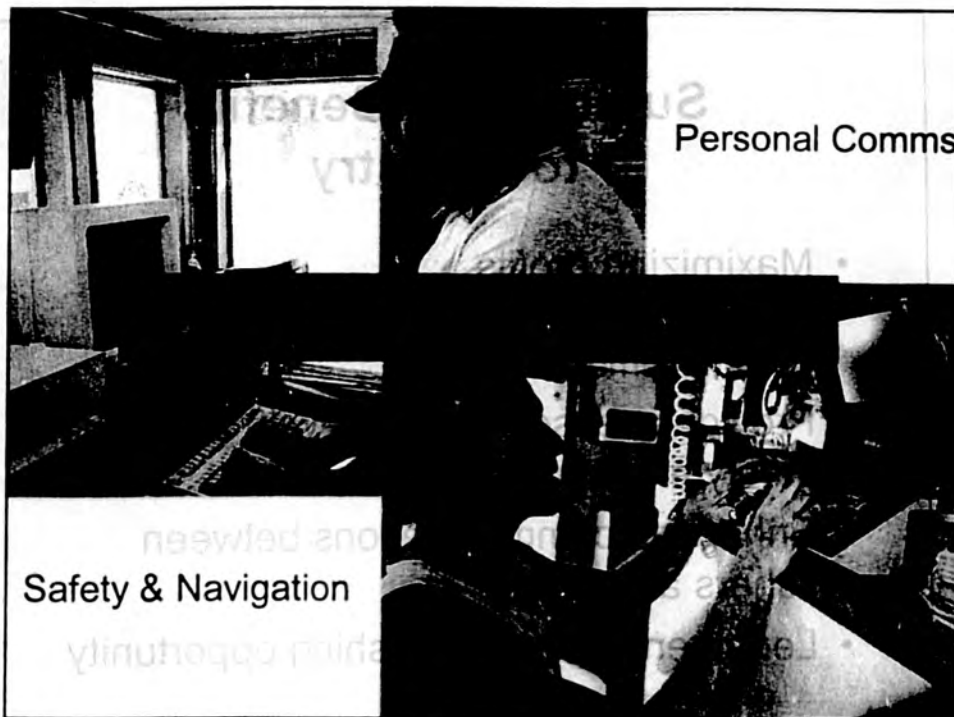
VMS can potentially free certain vessel operators from improper accusations of wrongdoing. A VMS does not decide right or wrong; it simply documents activity. If an activity is authorized under a particular management regime, the VMS will record it as such. The VMS has proven its value in situations where vessel operators have been accused of alleged illegal activity, and the VMS provided information to the contrary.

What Does VMS Cost?

- Initial acquisition cost (up to \$1,750), offset by reimbursement program
- Installation ranges from \$0 - \$500
- Approximately \$75 monthly transmission fees – more for enhanced messaging, weather reports, etc...

VMS Reimbursement Program

- Pacific States Marine Fisheries Commission coordinates the reimbursement program
- Reimbursed the purchase cost (up to \$1,750) for a single VMS transmitter per vessel
- Does not reimburse installation costs, recurring costs, or the costs of a second transmitter
- Program expected to be fully funded through at least 2009



Summary of Benefits

- **Improved Surveillance**

VMS Provides for near 100% Fleet Location Monitoring

Advanced Activity Notification

Efficient Directed Response to Suspicious Activity and Violations

- **Increased Safety**

Accurate Position Data Transferred to USCG in Near Real-Time

Summary of Benefits to Industry

- Maximizing profits
 - Can provide owners with better management control
- Provides vessel operators with additional safety measures
- Enhances communications between fishers and family
- Lengthens, broadens fishing opportunity

Surface Current Mapping in Alaska Using High-Frequency Radar

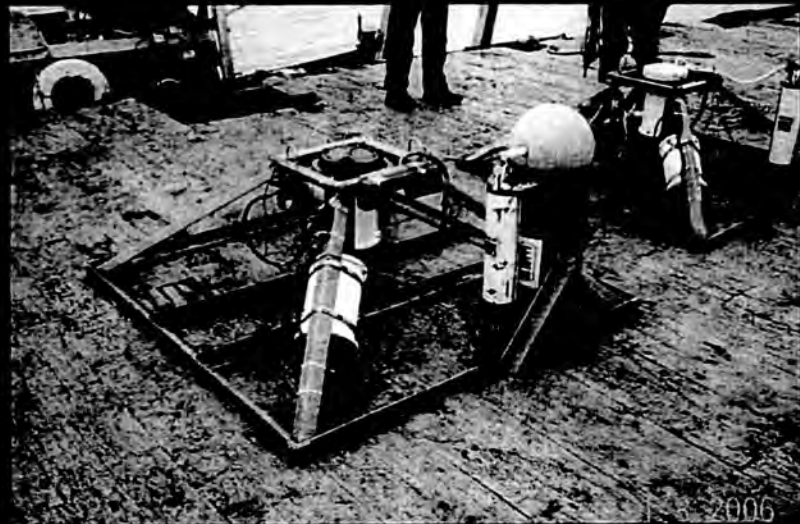
Rachel Potter and Thomas Weingartner
Institute of Marine Science
University of Alaska Fairbanks
rpotter@ims.uaf.edu

presented to the
Alaska State Legislature
March 9, 2007

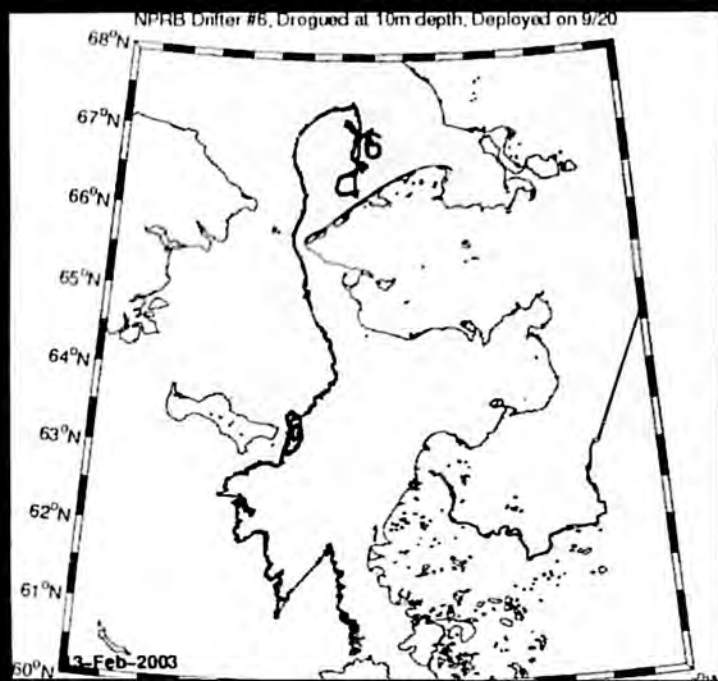
Why Measure Ocean Currents? -

1. Spill Response Planning
2. Search and Rescue
3. Marine Navigation
4. Marine Ecosystem/Fisheries Issues
5. Currents transport heat, nutrients, fish larvae, etc.
6. Currents affect climate and weather (and are affected by the same)

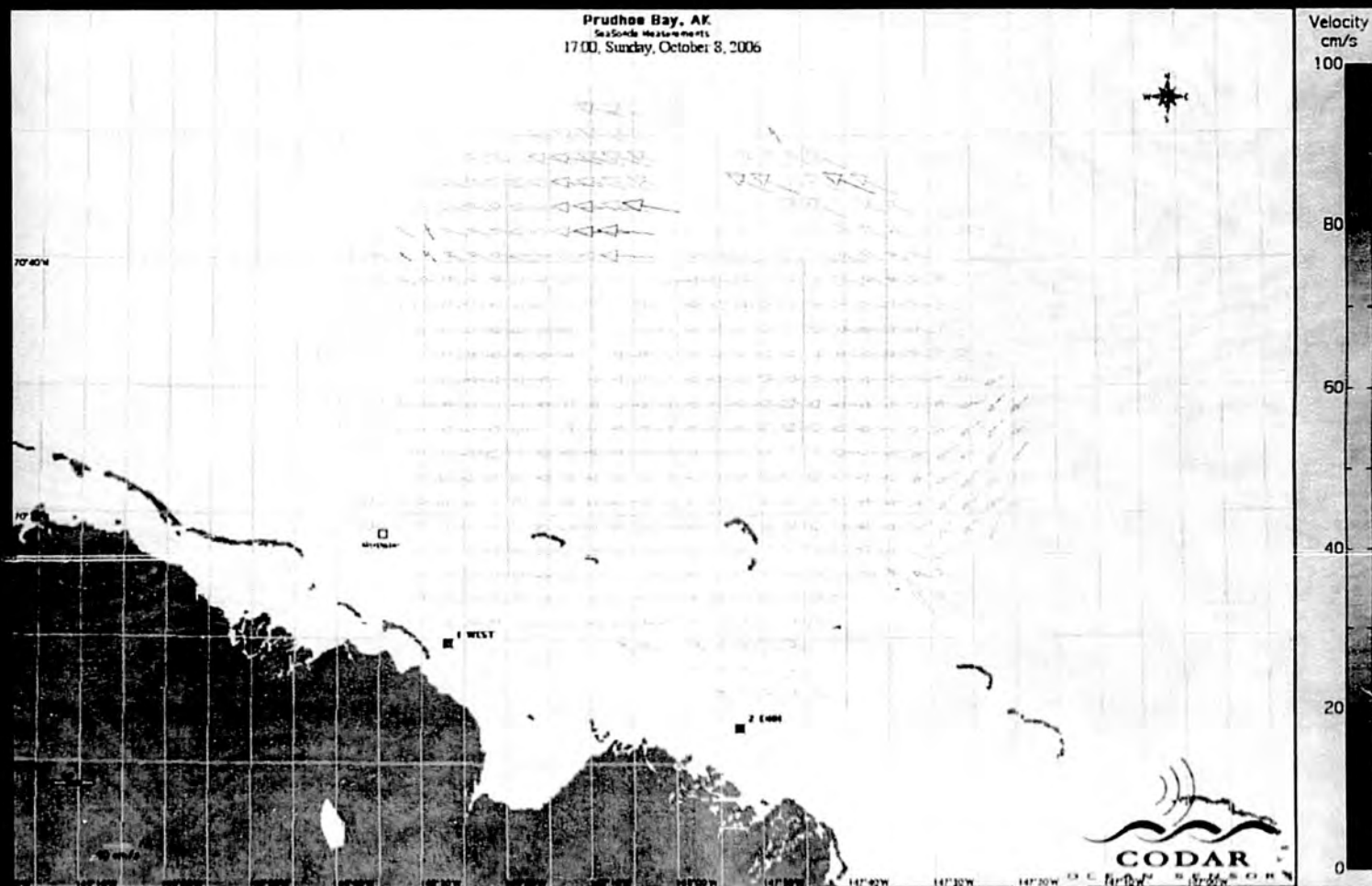
These issues require measurements in near real-time over a large area.



Moored Current Meter

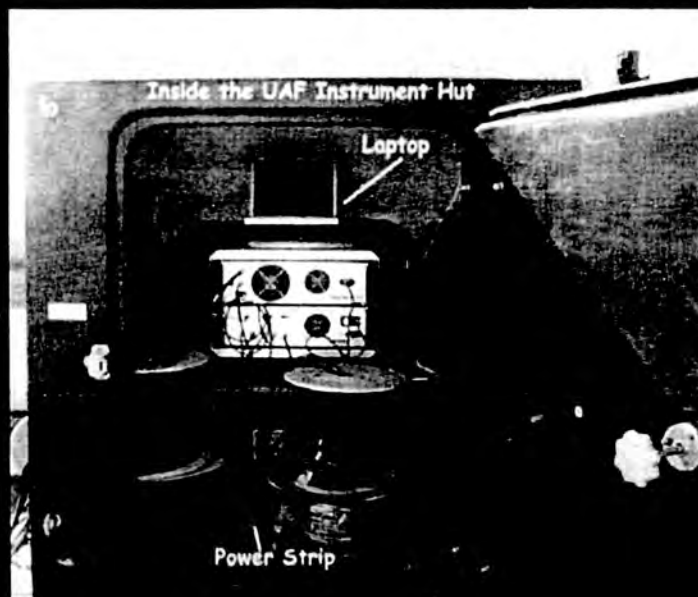
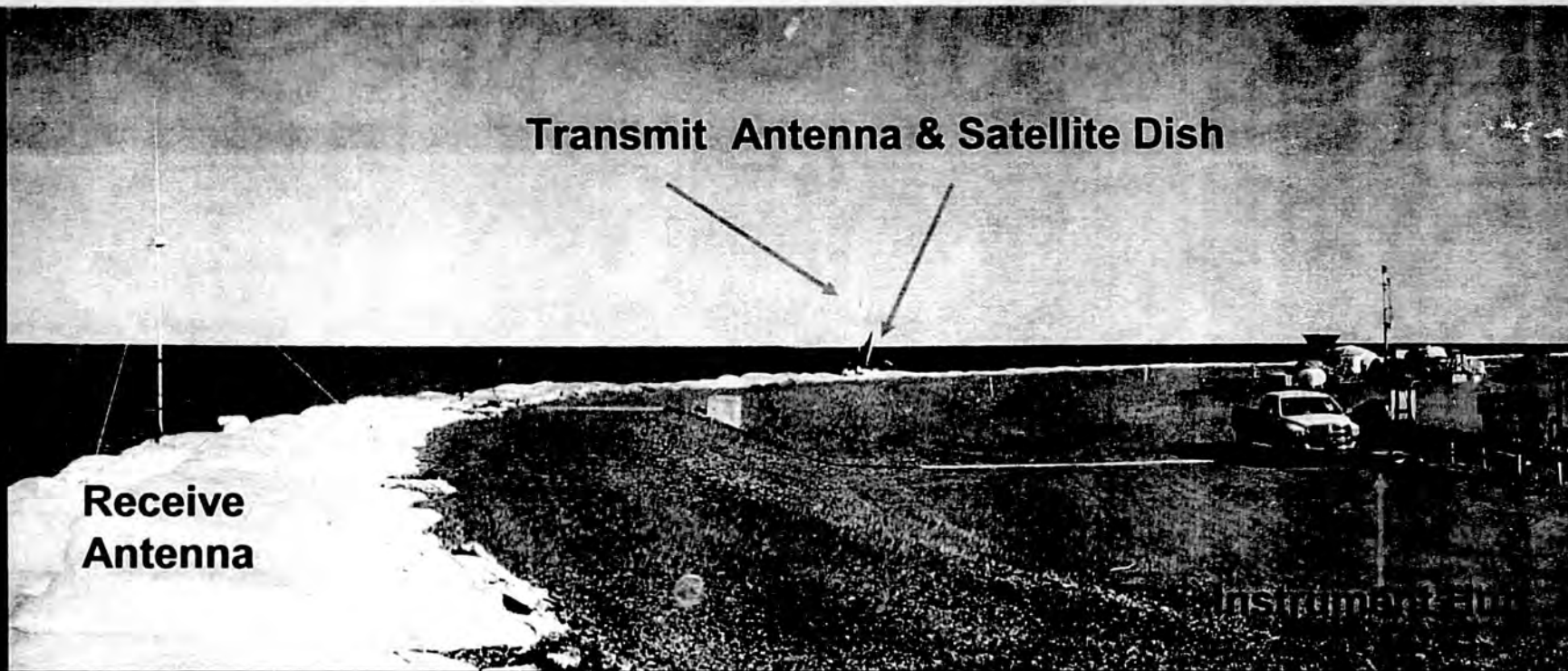


High Frequency Radar allows us to measure currents in the coastal ocean at hourly intervals, over a broad spatial area (20 - 70 miles offshore) and at a resolution of 1 - 4 miles. Plus the data are available in realtime!!



Transmit Antenna & Satellite Dish

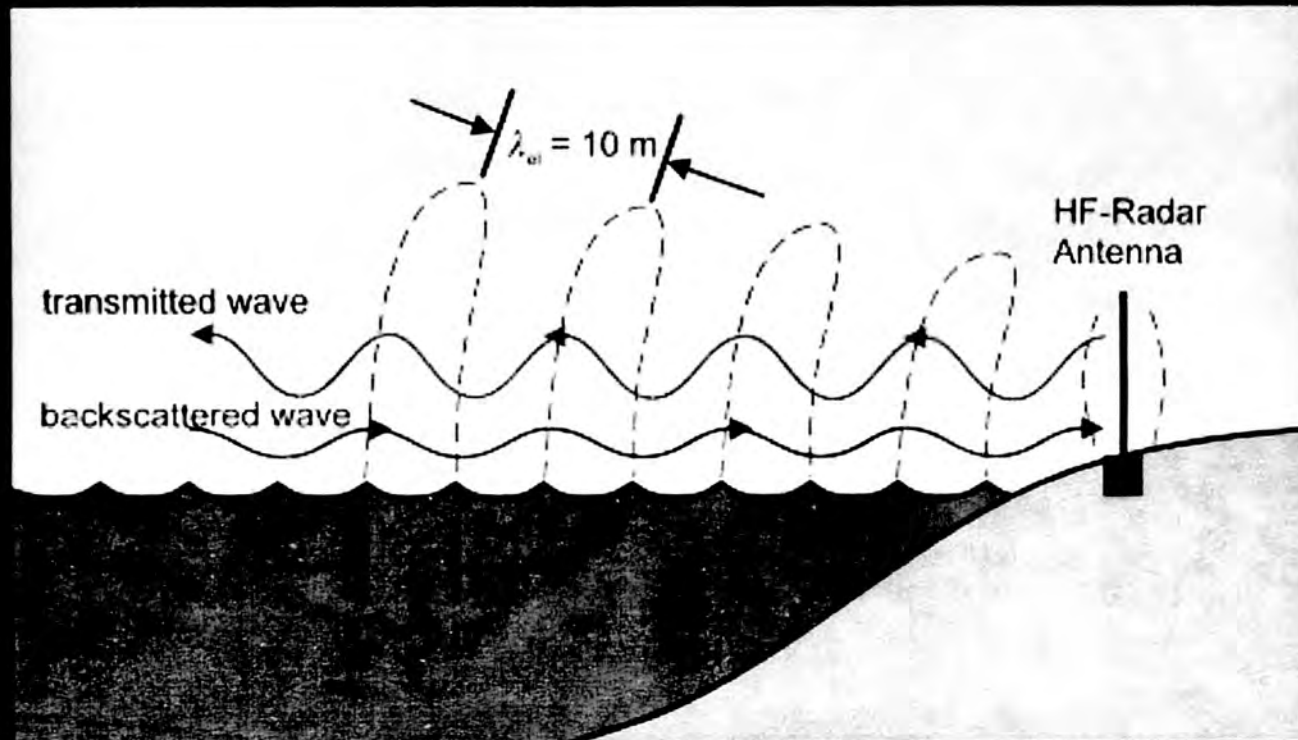
**Receive
Antenna**



**High-frequency Surface
Current Mapping Radar: Shore-
based velocity measurements**

HF Radar Theory

Transmit a frequency, which bounces back off of waves of a specific wavelength in accordance to wave dispersion theory.

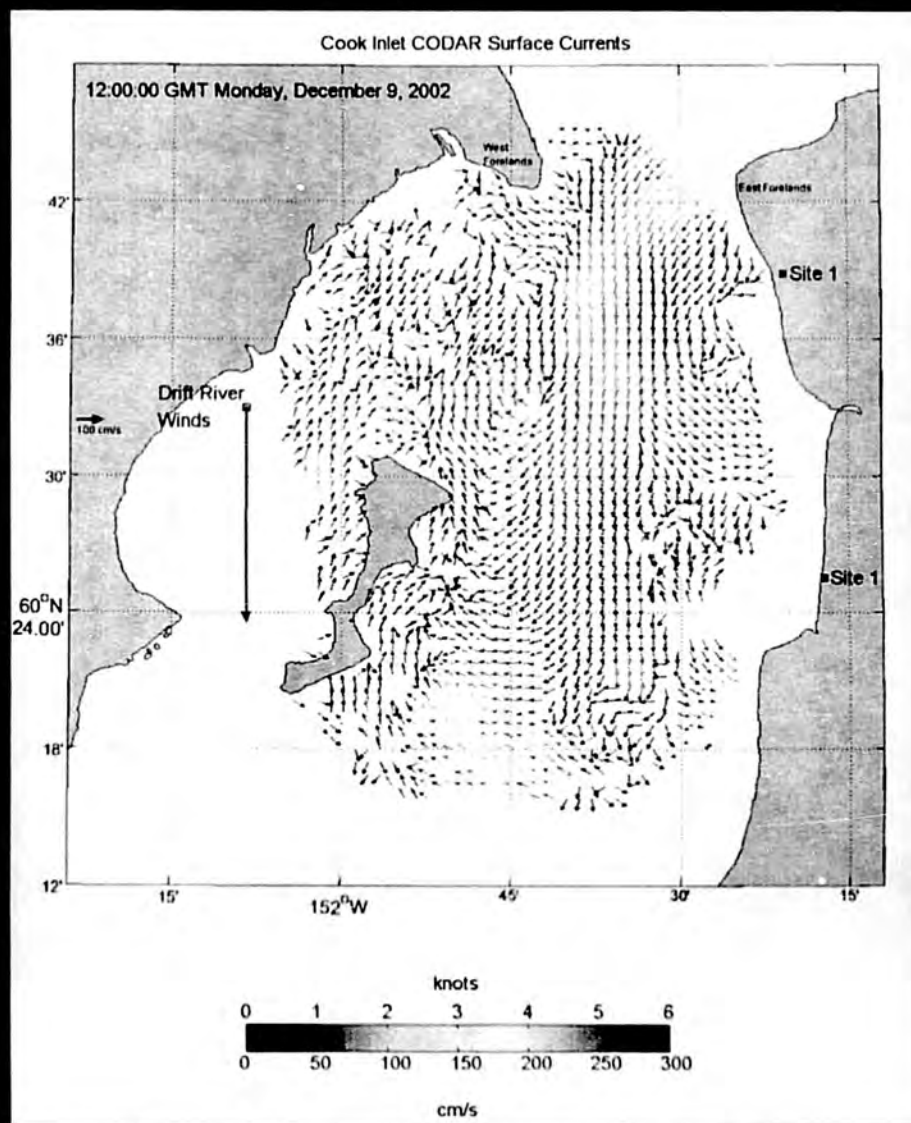


Upper Cook Inlet

2002-2003

Located on
Privately
Owned Land

Funded by the
Coastal Marine
Institute



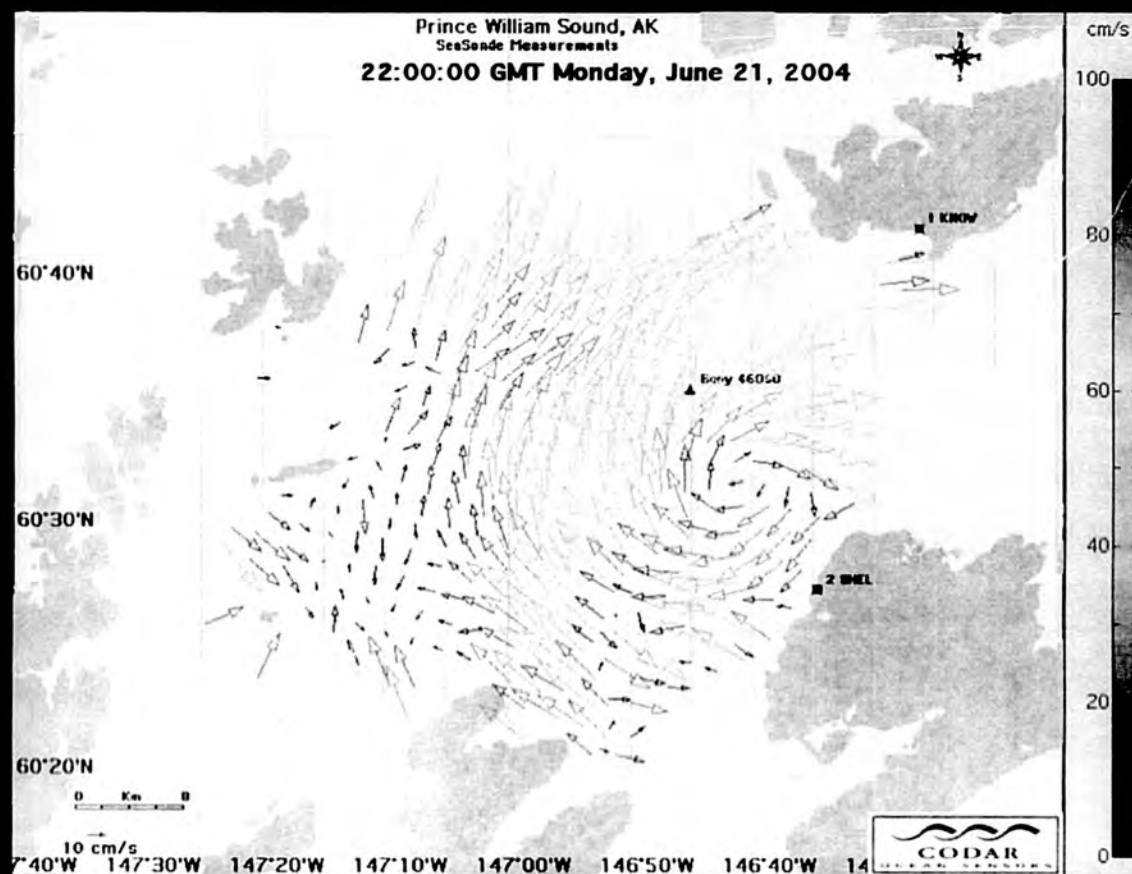
Prince William Sound

2004-2006

Remotely Powered

Located on
USFS lands

Funded by:
NASA/NOAA
PWS RCAC
OSRI
AOOS



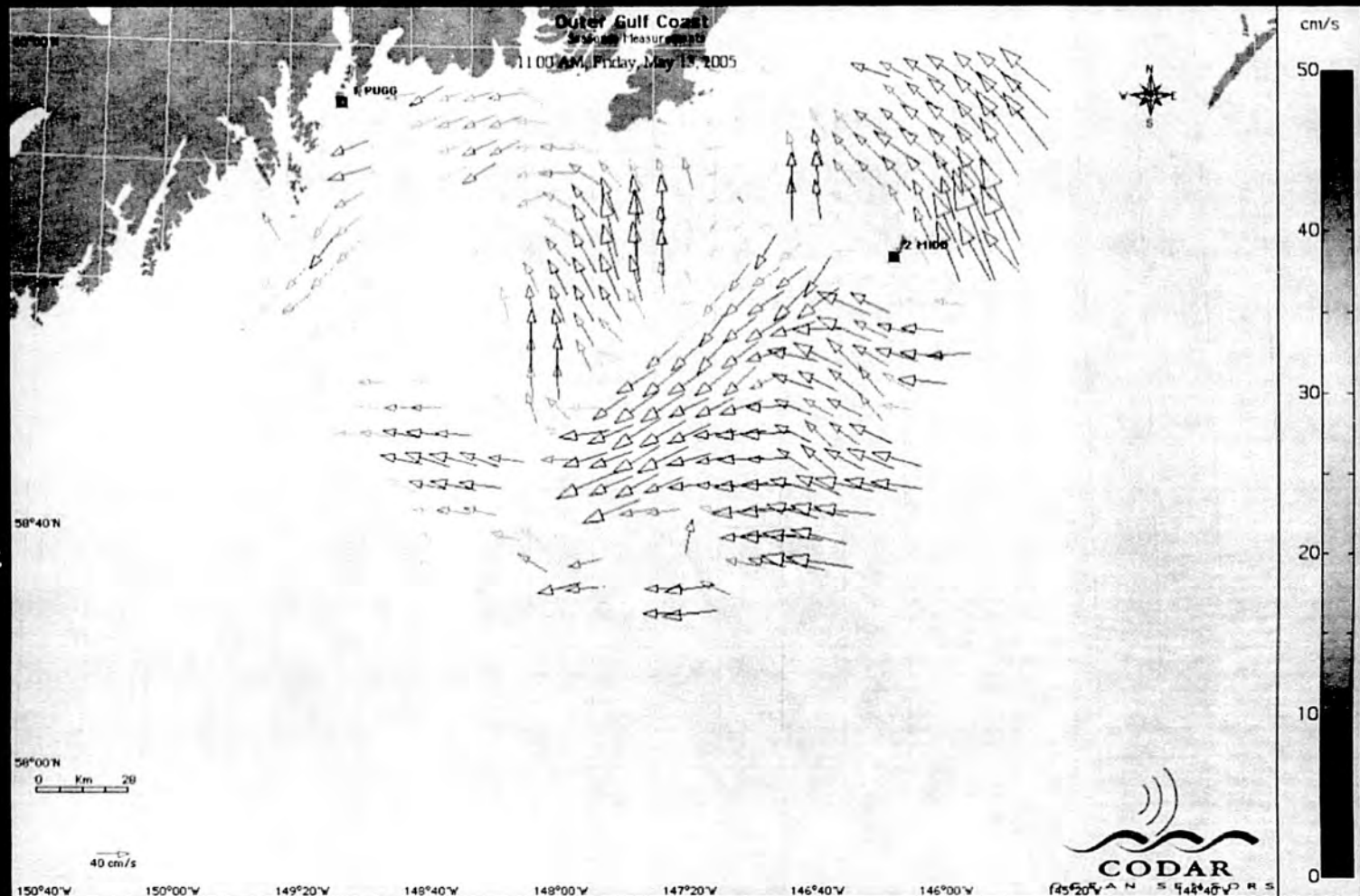
Gulf of Alaska

2005

Long Range
System

Located on
Native Lands

Funded by the
Tsunami
Warning and
Environmental
Observatory

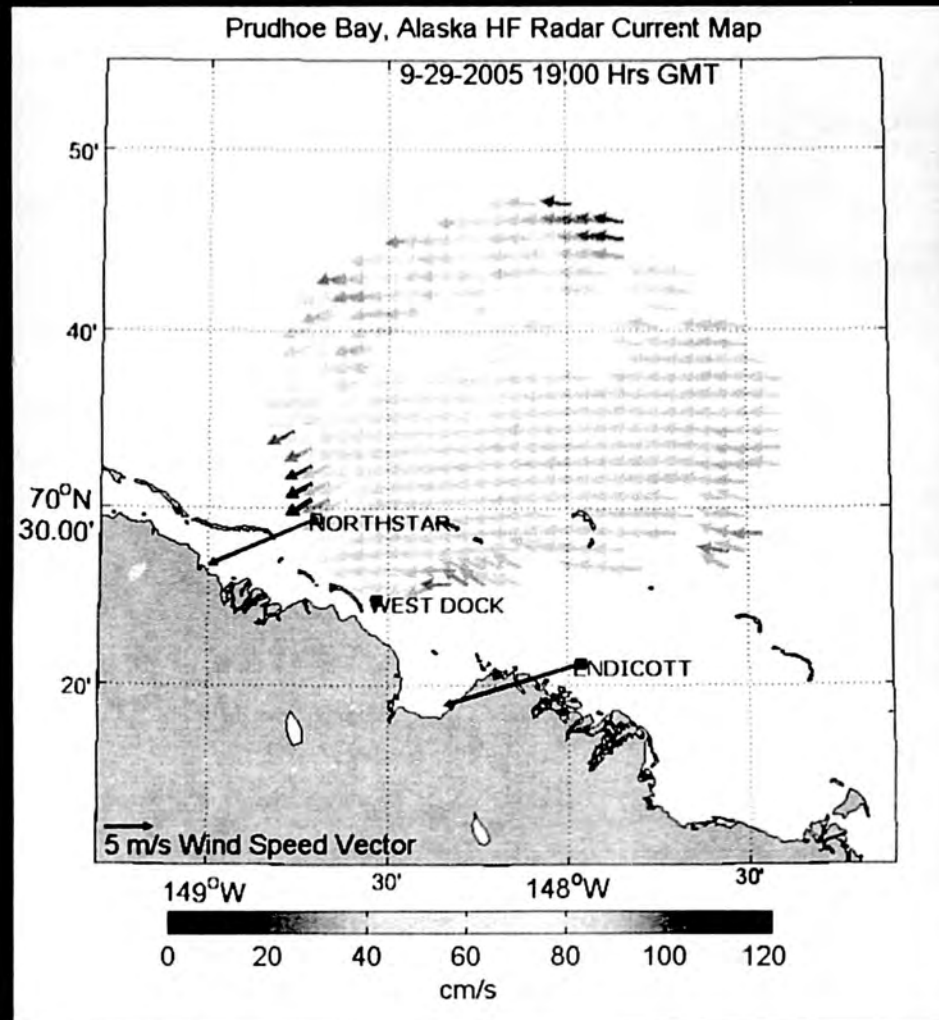


Beaufort Sea

2005-2006

Located on
BP Oil Field

Funded by the
Minerals
Management
Service



Lower Cook Inlet

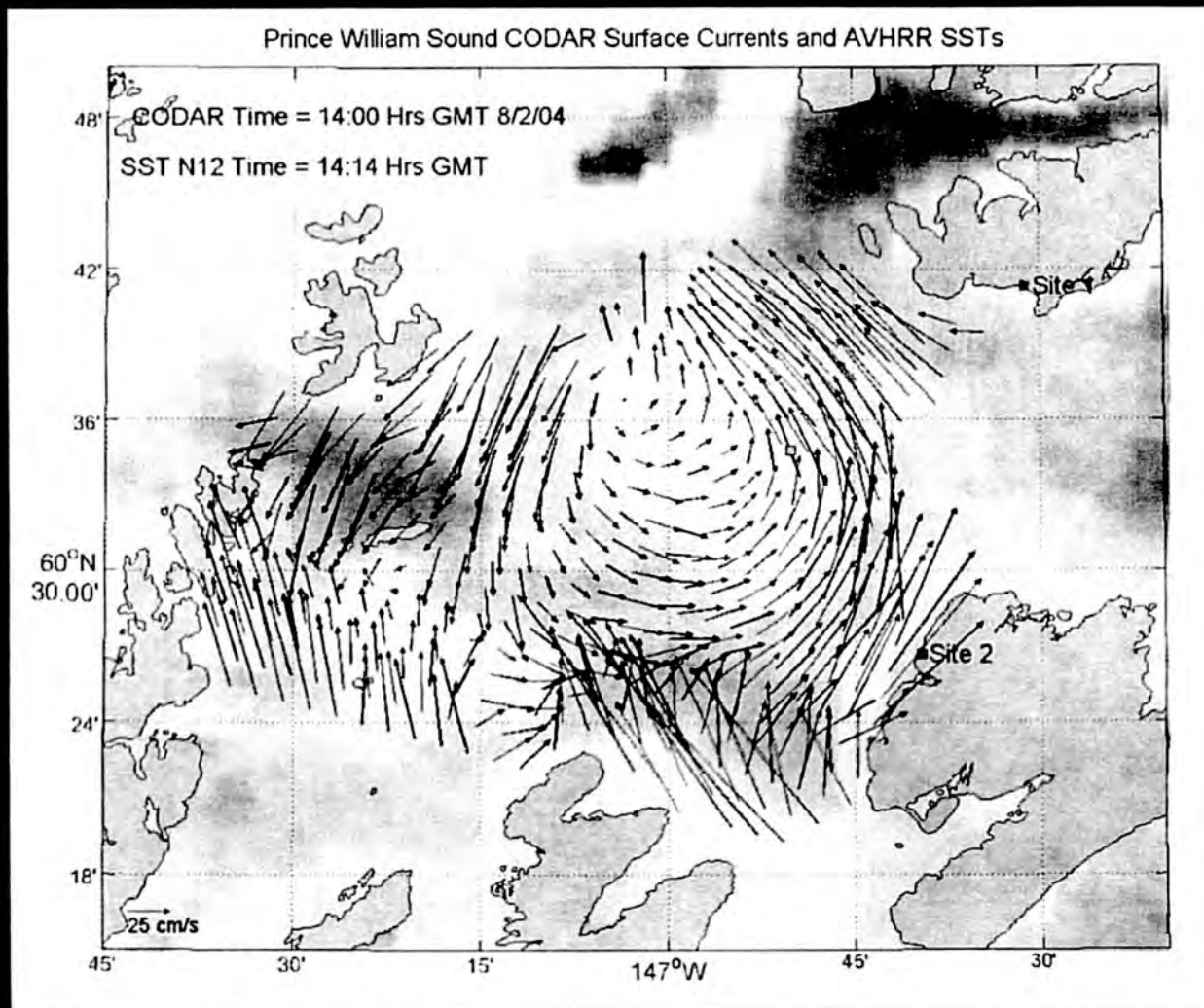
2006-2007

Located on
Privately Owned
Lands

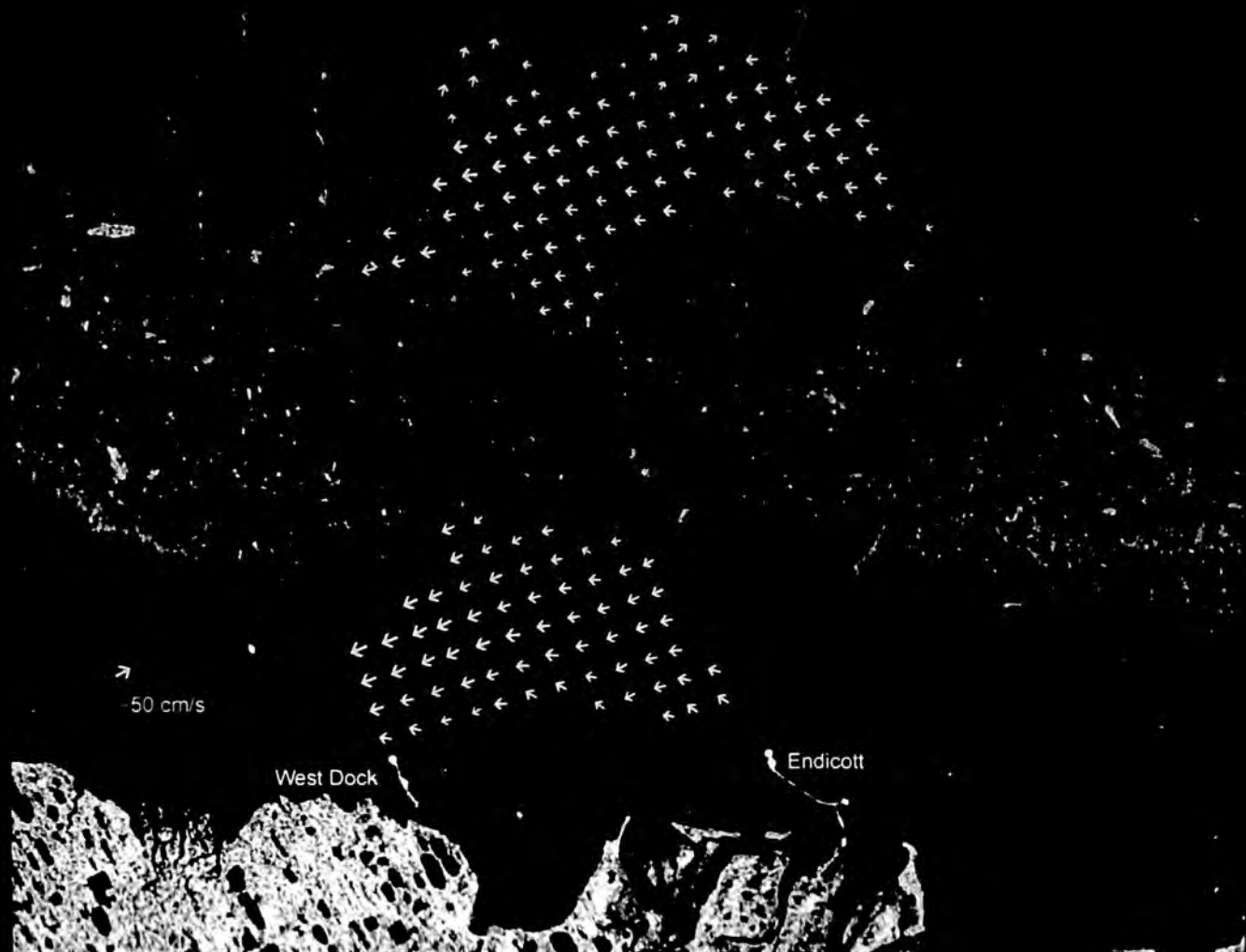
Funded by the
Minerals
Management
Service



Overlay Currents and Temperatures



Overlay Currents and Sea Ice



©Canadian Space Agency

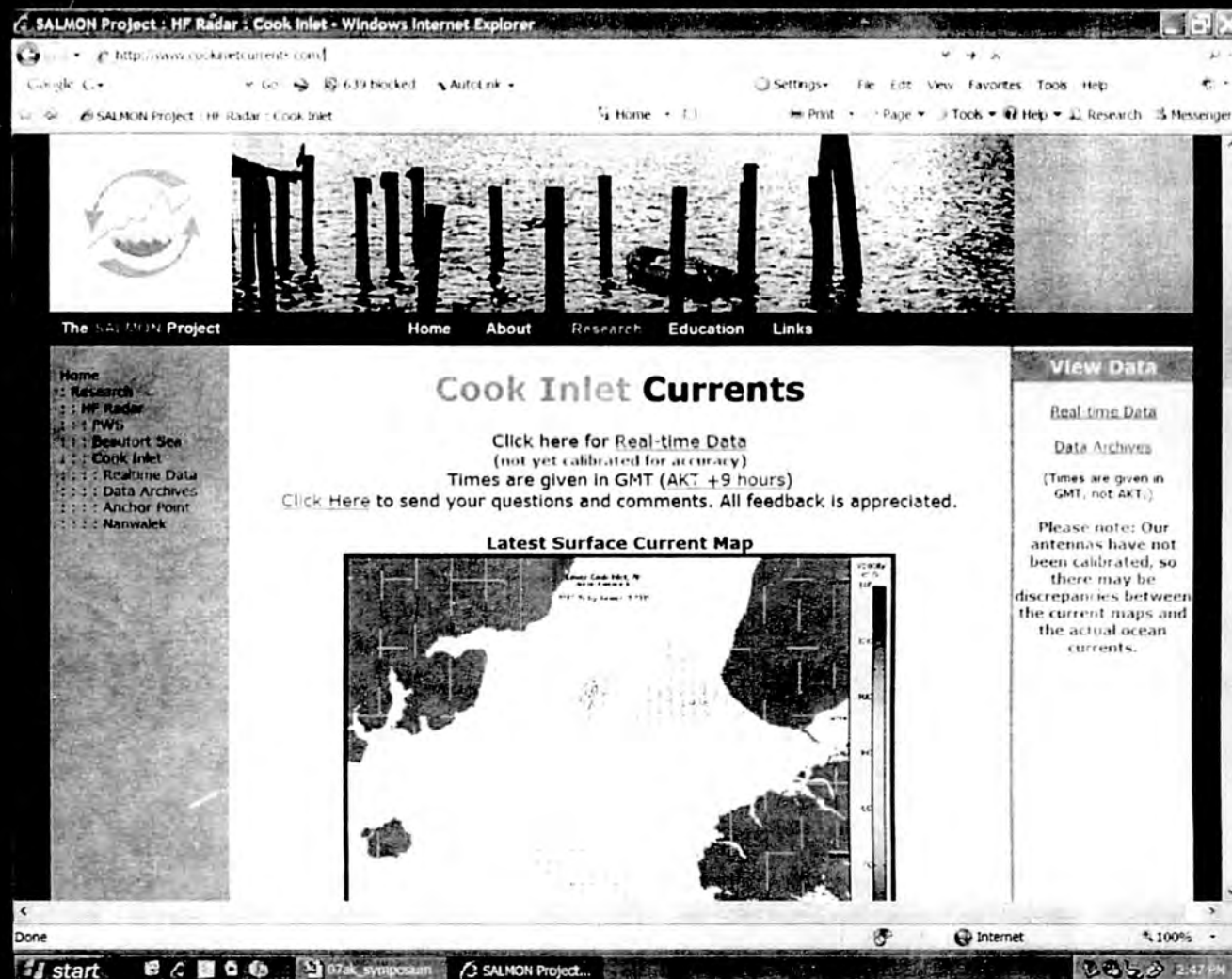
Why Measure Ocean Currents?

1. Spill Response Planning
2. Search and Rescue
3. Marine Navigation
4. Marine Ecosystem/Fisheries Issues
5. Currents transport heat, nutrients, fish larvae, etc.
6. Currents affect climate and weather (and are affected by the same)

These issues require measurements in near real-time over a large area.

Thank you for your attention
and interest.

www.cookinletcurrents.com



Automatic Identification System & Benefits of the Vessel Monitoring System to USCG in Alaska

RADM Arthur E. Brooks
Commander, District Seventeen
To

24th Alaska State Legislature
Special Committee on Fisheries



Homeland
Security



What is AIS?

- *Autonomous Continuous Station-to-Station Navigation Broadcast System*

- 3 modes of operation: automatic/self-reporting, assigned, interrogation/polling

- Open protocol & non-proprietary

- Robust capability: can handle up to 4500 reports per minute

- Frequency agile: any 2 channels in the VHF Marine Band

- Versatile: multiple standard interfaces and display options

- *Internationally Adopted & Required (International Maritime Organization (IMO) Safety Of Life At Sea (SOLAS) Regulation V/19.2.4)*

- Tankers, passenger vessels, and, other ships 300 of gross tonnage or greater

- Purpose: collision avoidance, vessel traffic service tool, and, coastal surveillance

- *Mandated by Congress by the Marine Transportation & Security Act of 2002*

- Commercial self-propelled vessels 65 feet or greater;

- Towing Vessels over 26 feet or greater and 600 hp or more;

- Passenger vessels as determined by USCG; and

- those the USCG deems necessary for safety.



Homeland
Security



Forthcoming AIS Rule

- ❑ October 31st, 2005 we announced our intent to extend carriage to all U.S. navigable waters
- ❑ Potentially could effect 17,000 vessels:
 - ┌ Commercial self-propelled vessels of ≥ 65 feet
 - ┌ **No exceptions**
 - ┌ Towing vessels ≥ 26 feet and > 600 hp
 - ┌ Vessels carrying ≥ 50 passengers (vice 150)
 - ┌ **Hi-Speed vessels carry ≥ 12 passengers**
 - ┌ **Certain dredges & floating plants, and**
 - ┌ **Vessel moving certain dangerous cargoes**
- ❑ Forthcoming rulemaking (2007) will address timeline
- ❑ Reasonable time will be given for implementation



Homeland
Security



What AIS broadcasts

- Maritime Mobile Service Identifier
- Universal time stamp (gps)

Dynamic Data

-every 2-10 seconds per speed and course change

Position & Accuracy (+/-10m)

- Course over ground
- Speed over ground
- Heading
- Rate of turn
- Vessel IMO number
- COLREG navigation status

Static & Voyage Data

every 6 minutes or upon change

- Vessel Name & Call Sign
- Vessel Type & Dimensions
- Static Draft
- Hazardous Cargo Flag
- Destination & ETA

Safety Related & Binary Applications

- SHORT TEXT MESSAGING < 156 characters
- DATA MESSAGING & BINARY APPLICATIONS

Weather & Hydrological Information-

- NOAA Physical Oceanographic Real Time System
- NWS-Real-time weather buoy (C-MAN station)
- USACE Real-time Current Meter System (RTCM)

Vessel Traffic Service (VTS)

- ATON Discrepancies
- Distress Alerts
- Urgent Notices & Warnings
- Traffic Advisories
- Radar Overlay / Pseudo-targets
- Additional Hydro & Meteorological Information

Other possible uses-

- Aids to Navigation
- Search and Rescue
- Port Partners
- Lock/Canal operations
- ... endless opportunities!

AIS Carriage Regulations 33 CFR 164.46

The following must have a properly installed, operational, type-approved AIS

- *On international voyage:*

- ✓ Tankers, Passenger ≥ 150 GT, all others ≥ 300 GT
 - IAW SOLAS Regulation V/19.2.4
- ✓ Self-propelled commercial vessels ≥ 65 ft.
 - Except fishing and small passenger vessels (> 150 passengers)

- *Within a VTS area:*

- ✓ Self-propelled commercial vessel 65+ feet
 - Except fishing & small passengers vessels
- ✓ Towing vessel ≥ 26 ft. and ≥ 600 hp
- ✓ Vessel certificated to carry 150+ passengers

AIS

VMS

■ VHF-FM, limited line of site coverage	■ Satellite, comprehensive coverage
■ IMO System which is also required by US regulations	■ US System
■ For SOLAS & MDA	■ For fisheries management & enforcement
■ No confidentiality	■ Confidential information
■ Self-reports every 2-10 seconds (3 mins <3kts)	■ Interrogated every 10-60 minutes
■ Mandated by Congress under MTTA 2002	■ Required by FMCs for various FMPs; strict data usage rules under MSA
■ Most commercial vessels 19,000 US 60,000 World-wide	■ Some Fishing vessels 2000 Atlantic 1500 Pacific

When & How Much?

- “Reasonable time” was given prior to full implementation
- Price < \$3,500



Homeland
Security



Benefits of VMS

- Rationalized fisheries without VMS increase the targeting problem for enforcement assets by spreading out activity in space and time

VMS is a force multiplier, which helps us to use our resources more efficiently

- Assets cannot be everywhere at all times, this tool will help us keep the playing field level and to hold violators accountable

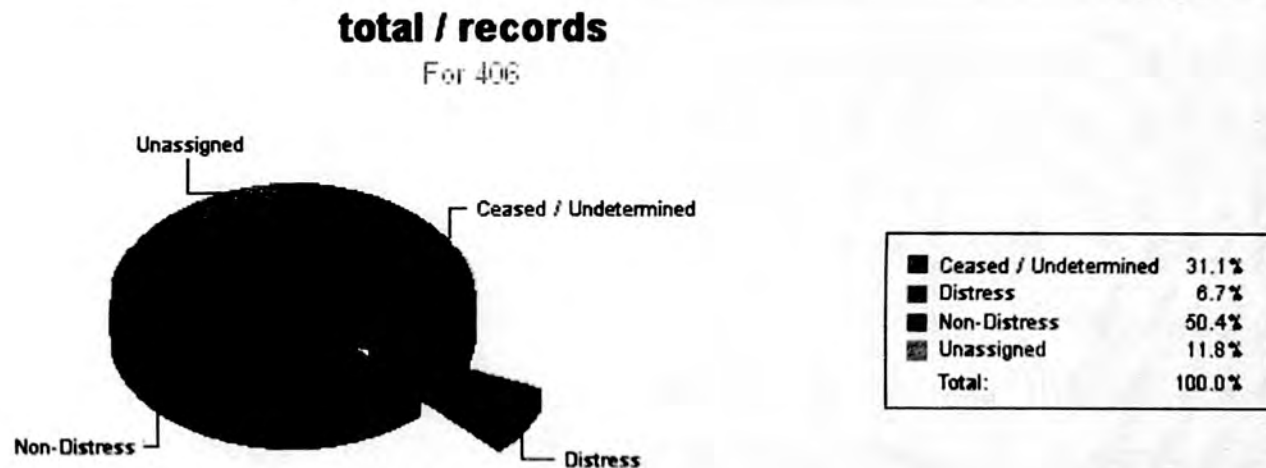
VMS Uses in Alaska

VMS is not designed as a safety of life at sea tool, however, with VMS the USCG is better able to:

- Corroborate initial EPIRB hits with two possible positions
- Locate good Samaritans in the vicinity of vessels in distress
- Confirm vessel track history when overdue reports are received
- Achieve 100% coverage of crab vessels requiring safety/stability checks

406Mhz Alerts for FY07 in Alaska

- Only 7% of all beacon activations since 1 Oct 06 were actual vessels in distress (US average is 10%)
- Registration was mandatory in 1994, but only 90% of beacons are registered
- Average initial detection time 45 minutes, subsequent passes every 60 minutes



Points of Contact

- Chief of Fisheries Enforcement

Lisa Ragone, LCDR

lisa.a.ragone@uscg.mil

463-2223

- Chief of Law Enforcement

Bill Adickes, CDR

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Surface Circulation Radar Mapping in Alaskan Coastal Waters: Field Study Beaufort Sea and Cook Inlet

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Award Number: 1435-01-04-CT-35579

<http://www.ims.uaf.edu/salmon/CIBS-MAP/index.htm>

LONG-TERM GOALS

Our primary goal with this project is to obtain spatial and temporal surface circulation fields for a portion of lower Cook Inlet and the central Beaufort Sea shelf in the vicinity of offshore oil production. These measurements will contribute to the baseline oceanography of two regions where few *in situ* current measurements have been made, and will therefore help to promote the general understanding of surface currents in these areas. These investigations will be an important undertaking for the Minerals Management Service (MMS) future efforts to model potential oil spills and for possible spill response and oil spill contingency planning. The data can also be used by MMS for model comparison and validation, for both hydrodynamic models as well as general circulation models. By disseminating the data over the internet in real-time, these data will assist professional users with a need for information for ship tracking and touring, coastal zone management, sediment transport, search and rescue operations, oil spill and other pollutant response.

OBJECTIVES

An important objective is to evaluate the sensitivity of the instruments to measure surface currents within mixed ice and open water conditions (limited fetch conditions), under periods of high fresh water outflow from the river systems, during the development of spring/summer shore leads, and during the fall freeze-up and the formation of landfast ice in the nearshore Beaufort Sea. Oil spill trajectory models typically derive their wind measurements from either coastal meteorological stations or from satellite derived barometric pressure fields. These data do not provide true surface current measurements in mixed ice and open water conditions when fetch is limited. HF Doppler radar would provide significantly more accurate surface current measurements under these fetch-limited conditions.

Once the data is acquired, objectives include:

- Assessing effects of sea ice concentration and extent on collection of surface current measurements from HF Doppler radar.
- Validating the HF Doppler radar surface current data measurement by comparing these data against the subsurface current measurements from the Acoustic Doppler Current Profilers (ADCPs).
- Comparing and contrasting wind measurements from MMS or other adjacent coastal meteorological stations against the HF radar surface current measurements.

- Developing a web site and ground capability to monitor system integrity and performance and providing near real-time dissemination of surface current field data, vector maps, and surface current animations.
- Providing detailed analysis of current and tidal variability and system response from the HF Doppler radar. Determining the dynamics and variability of surface current circulation. Including any sea ice, bathymetry, meteorological, ADCP, drifter, tidal, sea surface temperature or other important comparative data that has been collected within the study area.

APPROACH AND WORK PLAN

This study consists of two seasons of HF radar deployments in the Beaufort Sea and one year in Cook Inlet. In the Beaufort Sea we will deploy HF radar surface current mappers at two sites from June to October in 2005 and 2006. In October 2006, we will transport the two HF radar units to Cook Inlet where they will be deployed until November 2007. We will collect, analyze, disseminate over the Internet, and archive surface current vector measurements. In the Beaufort Sea, data will be collected over a distance approximately 10-50 km from shore with a resolution of approximately 250 m to 3 km and will be used to resolve circulation patterns landward (inside) and seaward (outside) of any barrier islands (Figure 1). In Cook Inlet we will obtain quality controlled surface current vector measurements over a radial distance that is approximately 50-80 km from shore with a resolution of 1-3 km.

Scientific and technical personnel involved with the project from the University of Alaska Fairbanks (David Musgrave, Project Manager; Tom Weingartner, Oceanographer; Hank Statscewich, Technician; → Rachel Potter, Deputy Program Manager; and Tony D'Aoust, Technician) and CODAR Ocean Sensors (Don Barrick, Brenda Lipa and Pete Lilleboe) are uniquely qualified and capable of fulfilling the goals and objectives of this study. Barrick, Lipa and Lilleboe are the founders of CODAR Ocean Sensors, the leader in HF ocean remote sensing radars. They are the pioneers who discovered and first applied HF radar to the mapping of ocean surface currents and wave monitoring, beginning 40 years ago. These individuals have over one hundred open-literature papers and hold ten patents on the subject of HF radar measurements. Musgrave, Statscewich, and D'Aoust will be responsible for the deployment of the HF radars. They have deployed HF radar systems for surface current mapping in Alaska since December 2002, as part of the Sea-Air-Land-Modeling-and-Observing Network (SALMON) Project under funding from NASA, NOAA, MMS, and the Prince William Sound Regional Citizens Advisory Council. Lastly, Potter will be involved in web design, real-time data acquisition and display, physical oceanographic data programming and analysis.

Within fiscal year 2005, our work plan consists of:

1. Site visit to Beaufort Sea in anticipation of a June 2005 deployment.
2. Acquiring, testing, and shipping a HF Radar system to Prudhoe Bay, Alaska, in April 2005.
3. Deploying, installing, calibrating, and maintaining the HF Radar system in Beaufort Sea from June through October 2005, when it will be demobilized for the winter.
4. Developing and maintaining a web site where real-time surface current data will be displayed
5. Compiling and submitting a Bibliographic Database of HF Radar resources
6. Conducting a site investigation and field report for Cook Inlet in anticipation of a 2007 deployment.

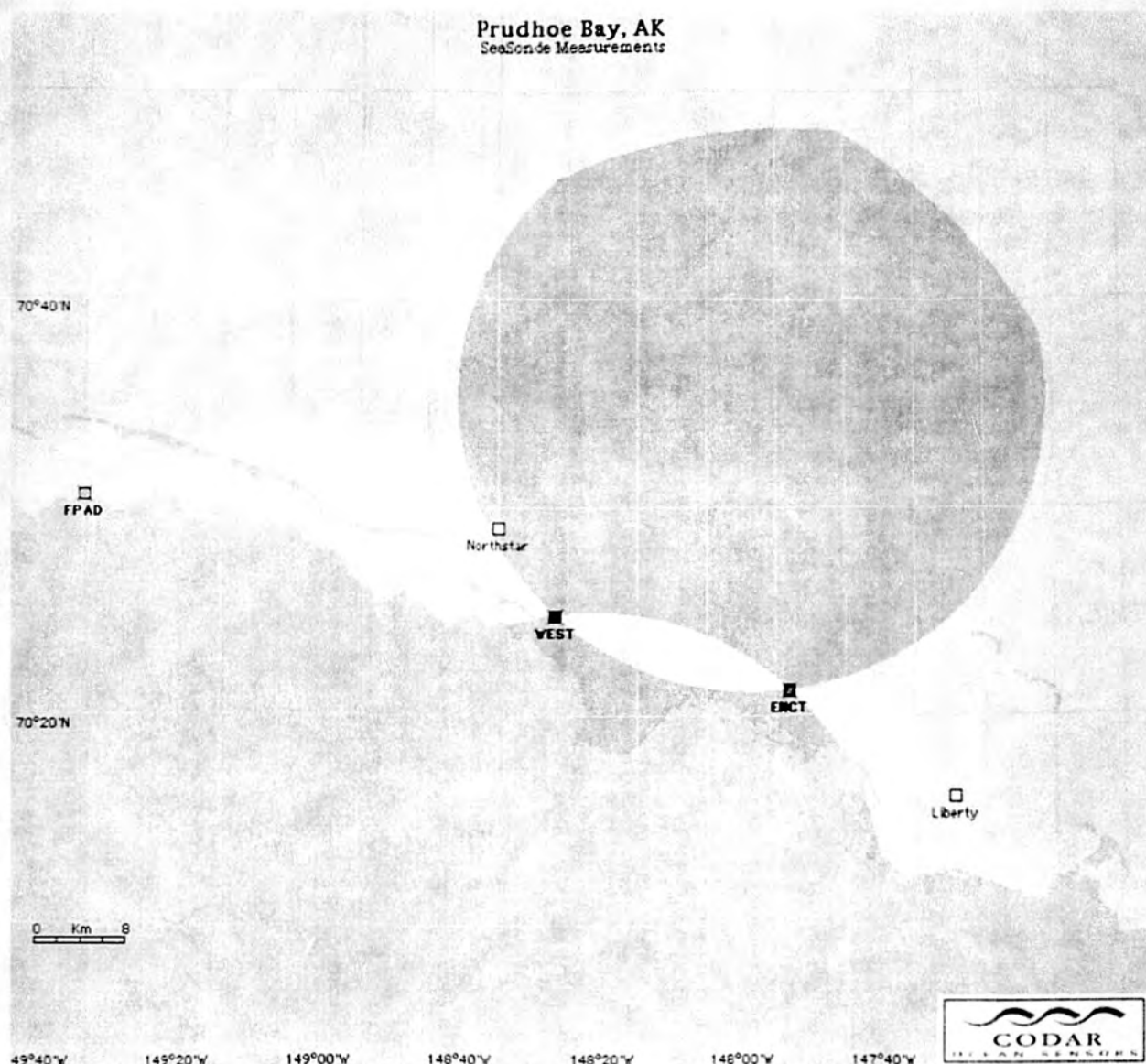


Figure 1. A map of the Beaufort Sea, which lies offshore of Prudhoe Bay, Alaska. This map shows the location of the West Dock and Endicott Island locations where HF radar data will be collected. The purple shading shows the coverage area where surface currents will be obtained.

WORK COMPLETED

To date, 30 September, 2004, only six days of the project were funded. During this time, logistics and plans for a Beaufort Sea site visit were begun.

IMPACT AND APPLICATIONS

Economic Development

The Beaufort Sea borders the Arctic coastal plain and is very important to MMS, in part because of its potential for offshore oil and gas production. The adjacent North Slope coastal plain region produces over 20% of the United States oil from mostly onshore State of Alaska oil fields. Offshore, oil is produced from Northstar Production Island, a joint state/federal production unit. This oil is transported to shore via a subseabed pipeline where it is connected to the larger Prudhoe Bay pipeline infrastructure.

Over the past 25 years, HF Doppler radar has been developed and improved so that detailed, gridded, two-dimensional maps of surface current circulation can be recorded in real time. Currents would play a critical role in the transport and fate of spilled oil. Current meters provide data at specific points and not at the water surface, where most oil would be transported. HF Doppler radar provides a measured equivalent of a gridded circulation model and can be used as input to validate and to assimilate into oil spill trajectory models.

Electromagnetic remote sensing of ocean currents from the shoreline out to sea provides a complete mapping capability and has become the most cost-effective solution operationally for coastal current measurements.

Quality of Life

These data will assist professional users with a need for information for coastal zone management, sediment transport, search and rescue operations, oil spill and other pollutant response. Also, subsistence hunting is very important social activity for the Native population that resides along the Arctic coastal plain. Subsistence hunters hunt the bowhead whale, polar bear, ringed seal, fish, etc. which are found within the waters and on top of the ice in the Beaufort Sea. They could benefit from knowledge of the surface currents.

Science Education and Communication

There is a limited amount of information to resolve the spatial and temporal surface currents circulation patterns in the Beaufort Sea and Cook Inlet. The sites where current meters have been placed, in either area, have not resolved the complexity of the surface currents. Our present knowledge of surface currents is limited and can be improved. Time series observations of surface current measurements over extensive regions are essential for understanding ocean circulation dynamics. High Frequency (HF) Doppler radar systems are ideal for accomplishing this task.

The tidal range measured in Cook Inlet is one of the largest in the world, and the short season of open water conditions in the Beaufort Sea is followed by a period of growth and seaward spread of landfast ice, followed by pack ice incursion, ice ridging, opening and closing of leads, spring overflooding, opening of the shoreline leads, and melting of the land fast ice which leads to the short open water season. HF Doppler radar will provide important new information on the changing surface current measurements within these unique and dynamic environments.

TRANSITIONS

Economic Development

These investigations will be an important undertaking for the Minerals Management Service (MMS) future efforts to model potential oil spills and for possible spill response and oil spill contingency planning.

Quality of Life

By disseminating the data over the internet in real-time, these data will assist professional users with a need for information for ship tracking and touring, coastal zone management, sediment transport, search and rescue operations, oil spill and other pollutant response.

Science Education and Communication

The data can be used by MMS for model comparison and validation, for both hydrodynamic models as well as general ocean circulation models.

RELATED PROJECTS

A similar study is being conducted in Prince William Sound, Alaska, by the same University of Alaska Fairbanks research group. The HF Radar system provides insight on the circulation of Prince William Sound and information on the tidal currents in the region (<http://halibut.ims.uaf.edu:8000/~salmon/CODAR/CODAR.html>).

Charles Armand Piedra
619 West 11th St.
Juneau, Alaska 99801
907-463-3703
January 7, 2007

RECEIVED
JAN 11 2007

The Honorable Peggy Wilson
State Capitol Room 109
Juneau, AK 99801

1
75
12
150
1075
100

75/mo
if used for
phone calls
is what makes
the diff.

Dear Representative Wilson,

I am writing you to seek your help with the VMS requirements soon to be before the North Pacific Fishery Management Council. I am writing on behalf of myself and other small boat fishermen who will be negatively impacted by the VMS rules if some common sense changes are not made to the plan. I am an Alaska salmon power troll fisherman with a 40 foot wood vessel built in 1928. I have owned and operated my own vessel in the salmon fishery since 1970. I have never been issued a fisheries or boundary violation in all those years. I understand the VMS is being used to collect data and keep track of large vessels engaged in groundfish fisheries in the EEZ such as trawling and this is appropriate for these mega producers. These catcher ships that are also at-sea floating factories need to be monitored due to these vessels' size and potential to cause negative impacts to fish stocks and ocean ecosystems. Small vessel operators such as trollers do not have this kind of potential due to our size and fishing gear. We are small businessmen. We should not be burdened with the same equipment or rules as operators whose revenues exceed ours by 20-fold or more. To say it simply, in all aspects this is a David and Goliath issue.

unintentional
power

Even with proposed federal grants small vessel owners will still be burdened with a lot of extra costs they can not afford each year. For instance, the electric system on my vessel, like a lot of other small fishermen's vessels, cannot handle one of these Skytracs systems and would need immediate expensive upgrade work before the VMS could even operate. Who will pay for this and how? The proposed federal grants don't even come close. We have heard an annual fee, estimated at this time to be around \$450, will be levied. Another unaddressed problem with these rules is: Who is going to repair these systems in Alaska? Repair businesses for these systems currently do not exist in Southeast Alaska, and small fishermen cannot afford the time or cost of sending them out of the region for repair. Therefore, if these rules are put in place, and a fisherman's system breaks down, his season is over - period! Also, the research I have done shows the VMS units are like cell phones and would need to be replaced every four years at a cost of approximately \$2,000! Many small fishermen simply cannot afford this extra cost.

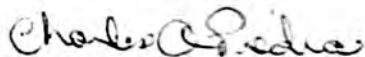
In Southeast Alaska, small salmon boats are operated mostly in State waters and should not need the VMS at all. The Alaska Dept of Fish and Game has an excellent catch statistics reporting program in the salmon fisheries, and at present, harvest reports are collected daily from buyers. Salmon fisherman cannot hide anything from the government; we are already required by law to report our catch statistics, as are the buyers and processors. As for safety issues, all small documented vessels such as mine already carry a mandatory—and expensive—satellite EPIRB; a mandatory—and expensive—self-deploying canister life raft; and mandatory—and expensive—aerial signaling devices. If we are in distress, these safety devices enable the Coast Guard to locate us when we call in a mayday on our mandatory VHF radios, which are required to be on channel 16 at all times. And this is only a partial list of all the safety equipment and devices required now by the Coast Guard. This inventory of mandatory safety equipment is expensive to maintain and replace, and the costs increase every year. Adding a VMS requirement will, quite simply, put a number of small salmon fishermen out of business. Are we being unfairly prevented by Government agencies from making a living?

Perhaps the VMS could be used as an enforcement tool, making fisheries violators in smaller vessels install the VMS as part of the punishments they receive. But why should law-abiding business persons be saddled with a program like this? Why should the government violate the right of privacy of law-abiding citizens and small businesses? If the VMS is made mandatory, litigation is sure to follow.

Here are some examples of things that could be done with the VMS rules to make them fair for small operators. Exempt all AK licensed salmon trolling vessels, power and hand. Exempt all Federal Fisheries Permit holders who have less than 5000 Lbs of IFQ. Exempt all AK licensed salmon gillnet boats. Exempt all AK licensed salmon seine vessels. Exempt all AK licensed small fishing vessels fishing in state waters the definition of a small vessel being 64 feet or less overall. Exempt all IFQ fishermen who have less than 10,000 lbs of halibut or sablefish combined. Exempt all halibut IFQ fisherman who hold less than 5,000 lbs of halibut and fish in state waters. Exempt all AK licensed small vessel fishermen who live in rural Alaskan villages. Exempt all Alaska Native small boat fishermen with incomes less than the national poverty level.

If nothing else, the impacts of the proposed VMS requirements to small fishing operations need to be studied thoroughly and made public. I am requesting that you bring these issues before the Council and that all the members consider carefully the jobs and livelihoods you could destroy by prematurely imposing the costly burden of VMS on small operators who simply cannot afford it.

Sincerely,



Charles A. Piedra

cc: Governor Palin
cc: Senator Kim Elton
cc: Senator Bert Stedman
cc: Albert Kookesh
cc: Representative Beth Kerttula
cc: Representative Bill Thomas Jr.
cc: Representative Gabrielle LeDoux
cc: Representative Paul Seaton
cc: Representative Peggy Wilson
cc: Representative Berta Gardner
cc: U.S. Senator Ted Stevens
cc: U.S. Senator Lisa Murkowski
cc: U.S. Congressman Don Young
cc: Commissioner Denby Lloyd
cc: Representative- Elect Andrea Doll

Report of the

**EXPERT CONSULTATION ON DATA FORMATS AND PROCEDURES
FOR MONITORING, CONTROL AND SURVEILLANCE**

Bergen, Norway, 25–27 October 2004



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Report of the
EXPERT CONSULTATION ON DATA FORMATS AND PROCEDURES
FOR MONITORING, CONTROL AND SURVEILLANCE

Bergen, Norway, 25-27 October 2004

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Report of the
EXPERT CONSULTATION ON DATA FORMATS AND PROCEDURES
FOR MONITORING, CONTROL AND SURVEILLANCE
Bergen, Norway, 23-24 October 2004

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PREPARATION OF THIS DOCUMENT

This document contains the final report of the Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance, held in Bergen, Norway from 25 to 27 October 2004. The Consultation was convened as requested by the Twenty-fifth Session of the Committee on Fisheries (COFI), with a view to facilitating implementation of the International Plan of Action to Deter, Prevent and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU).

Major funding for the Expert Consultation and report preparation was provided through project FNOP/INT/003/NOR, "FAO/Norway Programme, FishCode Trust Component" and the FAO Regular Programme. Additional support for the work of the Secretariat came from the Directorate of Fisheries, Government of Norway, which hosted the Consultation.

The collaboration of Sigmund Engestæter, Ellen Fasmer, Grethe Kuhnlem and their colleagues at the Norway Directorate of Fisheries in arranging the Expert Consultation is gratefully acknowledged. Special thanks are due to Tania Abdirizzak, Pilar Bravo de Rueda Cabrera, Mary Cullinan and Giovanna Martone-Boccia of the FAO Fisheries Department for the effective administrative support they provided during planning and implementation of the Consultation. The able assistance of Robert Harman, Kieran Kelleher and Robert Gallagher with preparation and presentation of the reference documents, meeting logistics and finalizing the Consultation report is also acknowledged with thanks.

This document is issued in English, the language in which the Expert Consultation was conducted.

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FAO Fisheries Department
Fishery Officers in FAO Regional Offices

FAO.

Report of the Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance. Bergen, Norway, 25–27 October 2004.

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ABSTRACT

This document contains the report of the Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance (MCS) held in Bergen, Norway, from 25 to 27 October 2004. The Expert Consultation was convened in accordance with the recommendation of the FAO's Committee on Fisheries, with a view to facilitating implementation of the International Plan of Action to Deter, Prevent and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). The Consultation was hosted by the Directorate of Fisheries, Norway, and attended by 14 experts and resource persons. Participants were invited in their individual capacities, based on their experience with data formats and procedures in MCS.

The experts focused on the harmonization of data formats for MCS information that is exchanged internationally. Background papers presented to the Consultation covered topics including: fishing vessel monitoring system (VMS) reporting procedures; licences and fishing authorizations; exchange of catch certificates and trade documents; electronic fishing logbooks; progress made by the Coordinating Working Party on Fishery Statistics (CWP); and the use of Customs Tariff Codes, and linkages with traceability and ecolabelling.

A round-table discussion following the presentations led to the adoption of several recommendations for more effective harmonization and exchange of MCS information. The Consultation emphasized that an efficient path to standardized data formats would be the use of existing and developing data sets from the CWP. The Consultation recommended, *inter alia*, that the CWP be encouraged to establish a formal process for proposing and advising on standards and formats for the exchange of MCS data, in particular where such data have not been the subject of previous CWP recommendations. The Consultation recommended that the CWP should consider adopting the North Atlantic Format as a model for the standard for exchange of a range of MCS data and communications. In addition, the CWP, in coordination with regional fisheries management organizations and other stakeholders, should continue efforts to standardize field codes and formats for data in vessel databases. Other recommendations addressed the use of United Nations Code for Trade and Transport Locations (UN-LOCODE) for specifying locations, the introduction of standard codes for communication of information on vessel authorizations to fish, and the need to specify codes for exchange of information on defined violations.

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Acronyms and abbreviations

CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCRF	Code of Conduct for Responsible Fisheries
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
COFI	Committee on Fisheries, FAO
COLTO	Coalition of Legal Toothfish Operators
CWP	Coordinating Working Party on Fishery Statistics
EC	European Community
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FFA	South Pacific Forum Fisheries Agency
FMC	Fisheries Monitoring Centre
GIS	Geographical Information System
HSVAR	High Seas Vessels Authorization Record, FAO
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
IOTC	Indian Ocean Tuna Commission
ISO	International Organization for Standardization
ISSCFC	International Standard Statistical Classification of Fishery Commodities
ISSCFV	International Standard Statistical Classification of Fishing Vessels
IUU Fishing	Illegal, Unreported and Unregulated Fishing
MCS	Monitoring, Control and Surveillance
NAF	North Atlantic Format
NAFO	Northwest Atlantic Fisheries Organization
NEAFC	North East Atlantic Fisheries Commission
RFMO	Regional Fisheries Management Organization
SHEEL	Secure and Harmonised European Electronic Logbook
UNFSA	"United Nations Fish Stock Agreement", properly the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks
UN-LOCODE	United Nations Code for Trade and Transport Locations
VMS	Vessel Monitoring System
XML	Extensible Markup Language

INTRODUCTION

1. The Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance was held from 25 to 27 October 2004 in Bergen, Norway.
2. Participants, who attended in their personal capacity rather than as representatives of their agency or organization, noted that the convening of the Expert Consultation had been endorsed by the twenty-fifth session of the FAO Committee on Fisheries (COFI) in February 2003, and that Norway had offered to host it. The report of the Expert Consultation would be made available at the twenty-sixth session of COFI in March 2005.

ELECTION OF OFFICERS

3. The experts unanimously elected Mr Sigmund Engesæter as Chair of the Consultation and Dr Saif Al-Ghais as Vice-Chair.

ADOPTION OF THE AGENDA

4. The Consultation adopted the agenda as contained in Appendix A to this report.
5. The list of the participants, resource persons and members of the secretariat is provided in Appendix B.
6. The list of reference documents¹ discussed at the Consultation is provided in Appendix C.

VESSEL MONITORING SYSTEM REPORTING PROCEDURES

7. The Consultation noted that fishing vessel monitoring systems (VMS) typically report in one, or a combination, of three scenarios:
 - a) domestic fishing (vessels reporting to their national authority and normally fishing within their own flag State's EEZ);
 - b) distant water fishing (foreign vessels within the EEZ of a coastal State and reporting to that State); or
 - c) high seas fishing (vessels reporting to regional fisheries management bodies).
8. The experts noted that VMS control centres are usually located within a national fisheries agency's fisheries monitoring centre (FMC). The VMS control centre validates and stores the data reports, and facilitates their display and analyses. The VMS is essentially a specialized geographical information system (GIS) for the historical and statistical analysis of the positions of fishing vessels. Vessel Monitoring Systems are increasingly being used to collect, collate and interpret catch, effort data and other fisheries information.

¹ Available at: www.fao.org/fi/NEMS/events/fisheries_events.asp?lang=en

9. For suitable fisheries, VMS programmes have been widely used in developed countries to complement other management measures. In many developing countries such systems are gradually being introduced, often through pilot projects.

10. VMS programmes have been implemented for a variety of strategic objectives. In Iceland, all fishing vessels are obliged to be equipped, primarily for safety reasons. In other European countries, VMS has been progressively deployed on fishing vessels according to size classes, starting with the larger industrial vessels of 24 meters and subsequently to vessels of 15 meters. In the USA, VMS has been introduced on a fishery-by-fishery basis to enforce underlying regulations, such as those relating to restricted areas or time quota (effort limitations).

11. In some countries the VMS architecture has been "open". This means that multiple communications systems, for example, using different satellites, are used to communicate with fisheries monitoring centres. Other VMS programmes mandate the use of a single type of shipboard equipment and means of communication. The improved communications and availability of vessel position information through VMS also provides significant benefits to fishers in the event of emergencies at sea.

12. The Consultation noted that in some countries, mandating a certain type of equipment may be contrary to national policy, because such mandates are perceived as inhibiting product development and innovation. The VMS legislation may set out the functional specification for the on-board VMS equipment, rather than specifying the type of equipment. It was pointed out, however, that by dissuading proprietary formats, the standardization of data formats could in some cases provide an incentive to promote technological development.

13. The Consultation stressed that the fundamental differences between a position report that could be generated automatically and a message report that would require manual input from the originator. A further distinction was drawn between data that had to be reported in near real time and catch and effort data that could be delayed until the fishing vessel had landed its catch.

14. In some cases, the data in VMS position reports are packaged in a manner that is sub-optimal in terms of message size and cost. Concern was expressed that, as the volume of VMS reports has increased, so has the volume of lost messages. The possibility was discussed of approaching the service providers to request that they establish a dedicated VMS format for position reports. The format should be non-proprietary and freely available for use by all. The VMS position report should include, as a minimum, a unique identifier for the originator of the report, date, time, longitude, latitude, speed and course.

15. The Consultation noted the detailed and well-established vessel position and catch reporting formats and standards agreed at international level in the North Atlantic and used by the North East Atlantic Fisheries Commission (NEAFC), the Northwest Atlantic Fisheries Organization (NAFO), and several bilateral agreements in the area. These standards and formats are known as the "North Atlantic Format" (NAF). Similar formats and standards have recently been proposed for adoption by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The NAF is computer readable and can be imported into databases. The messages are

short and compact, which reduces communication costs. The NAF ensures that most critical information required for MCS is effectively transmitted and facilitates exchange of information between VMS programmes. The possible evolution of the NAF to an XML format was noted.

16. The Consultation considered whether or not the design, concepts and codes used in the NAF could be adopted as an international standard for VMS position, catch and activity reporting, and it was agreed that the suitability of the NAF for such purposes be brought to the attention of the Coordinating Working Party on Fishery Statistics (CWP)².

CATCH AND ACTIVITY REPORTING

17. The Consultation recognized that, while the key data generated and transmitted by the VMS is with respect to the position of the vessel, the VMS is a communications tool and it is increasingly used for reporting of vessel catches and activities. The Consultation noted an evolving and rapidly expanding spectrum of electronic reporting by vessels, ranging from the basic position reports to catch and activity reports to electronic logbooks.

18. The Consultation noted that the NAF made provisions for the formats required for catch and activity reporting, including catch on entry to an EEZ (or management area), transshipment, and for notifications from the authorities to the fishing vessels.

19. The Consultation agreed that States should ensure that vessels communicating information that is not generated automatically, such as "catch on board on entry to an EEZ" reports (also known as "hail" reports) be provided with a verification message confirming to the vessel operator that the communication has been received.

FISHING VESSEL DATABASES

20. The Consultation noted the requirements of flag States to communicate information to FAO with respect to fishing vessels authorized to fish on the high seas, in accordance with the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, and that a High Seas Vessel Register (HSVAR) had been established in FAO for such a purpose.

21. The Consultation agreed that the exchange of information between parties maintaining such vessel databases could be facilitated by the standardization of data formats, as already noted by the CWP at its Victoria meeting in 2003. The Consultation considered that the CWP, in close coordination with relevant Regional Fisheries Management Organizations (RFMOs), review standards and codes for information used to identify and describe vessels in vessel databases, in particular in vessel databases established at an international level for the purposes of compliance control.

² Also see section on the mission and activities of the CWP later in this report.

22. The experts noted that several RFMOs and other organizations maintain lists of delinquent and authorized fishing vessels, but noted that lists of delinquent vessels rarely contain information on violations. The Consultation was informed of the NEAFC system of preparing "A" lists of vessels that are provisionally considered delinquent, and "B" lists of vessels determined to be delinquent and are to be denied access to ports and services of NEAFC Member States. Similar vessel databases are in use in other RFMOs (e.g. the Forum Fisheries Agency and CCAMLR), non-governmental entities (e.g. the Coalition of Legal Toothfish Operators, COLTO) and flag States.

23. The Consultation noted that at least one fishing vessel database contained crew lists, details of the Certificate of Registry, details of the officers' Certificates of Competency, and even the Social Security Numbers of the crew.

FISHING AUTHORIZATIONS AND VIOLATIONS

24. The need was noted for flag States to transmit certain information to RFMOs and coastal States on vessel authorizations to fish, as required under Article 7 of the Code of Conduct for Responsible Fisheries (CCRF) and Articles 18.3(a) and 19.2 of the United Nations Fish Stock Agreement (UNFSA).

25. The Consultation considered that the CWP could be approached with regard to the standards for such information. These standards would provide for communication of information on the period of validity of the authorization and withdrawal of the authorization.

26. The Consultation also noted that few schemes exist at an international level for the definition of violations and sharing of information on violations. The Consultation considered that parties, in close coordination with the CWP, may wish to establish definitions for major violations of management measures, and also propose standard descriptors and codes for international exchange of information on violations.

27. The Consultation was informed that the International MCS Network³ has been taking steps to establish a mechanism for sharing MCS related information. This recently formed network is a voluntary arrangement of national organizations charged with fisheries enforcement that informally shares experiences and information in order to combat IUU fishing.

EXCHANGE OF CATCH CERTIFICATES AND TRADE DOCUMENTS

28. Catch certificates have been introduced to identify the origin of catches and to track the fish product as it moves through the market chain. If the product enters into international trade, catch certificates are referred to as trade documents. Catch certificates and trade documents were first introduced to monitor trade in tunas and swordfish.

29. The International Commission for the Conservation of Atlantic Tunas (ICCAT) introduced catch certification to monitor catches of bluefin tuna in 1995, and was

³ www.imcsnet.org

successful at identifying unreported catches. The trade certificates were then used to impose trade embargoes on the import of un-reported bluefin catch into Japan and Europe, and forced several "flag of convenience" countries to join ICCAT, and to implement their Rules and Regulation, including reporting. Numerous fishing vessels that did not wish to be constrained by the ICCAT regulations changed their flags.

30. The success of the ICCAT bluefin tuna measures encouraged the extension of the measures to other species within ICCAT, i.e. swordfish and bigeye tuna. Other RFMOs also adopted similar schemes, e.g. the Indian Ocean Tuna Commission (IOTC), the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and the Inter-American Tropical Tuna Commission (IATTC). CCAMLR also introduced a similar scheme for Patagonian toothfish.

31. The Consultation reaffirmed the recommendations of the 2002 Expert Consultation of Regional Fisheries Management Bodies on Harmonization of Catch Certification Schemes held in La Jolla, USA. These recommendations are reiterated here for completeness:

- a) FAO should investigate the possibility of uniquely identifying fishing vessels.
- b) The terms and codes used in catch certification and trade documentation for species, fishing gear etc. should be those adopted by the CWP, and the International Organization for Standardization (ISO) codes should be used for the country codes.
- c) FAO should design standard forms based on forms already in use, in consultation with the users of the forms and FAO should encourage their use by current and future schemes.
- d) Efforts should continue to achieve harmonization of tariff commodity codes to adequately describe the species subject to trade documentation. Where they exist such codes should be incorporated into the trade documents where a code is available.
- e) Consideration should be given to flag States reporting all information contained in catch certificates or trade documents to a central database used by the responsible RFMO.
- f) Priority for development of new schemes should be given to fisheries that are or may be subject to significant levels of IUU fishing.
- g) Where redundancy in catch certificate and trade document among schemes occurs, RFMOs should consult with an aim to eliminating duplicative documents and to eliminating opportunities for fraud.
- h) Further consideration should be given to the feasibility of developing electronic systems for producing information for catch certificates and trade documents.
- i) Until an electronic format is developed and implemented effort should be made to limit the size of each document to one page size A4.
- j) Consideration should be given to assisting developing countries in meeting the requirements of any catch certification or trade documentation scheme.

32. The Consultation briefly discussed the acquisition and transmission of reliable information which may be needed to apply the USA's Lacey Act and similar effective legislation in force in other jurisdictions. This is a conservation law that allows USA authorities to seize fish and to prosecute those involved, in situations where the fish

were harvested, possessed or transported illegally in one jurisdiction (State) and then imported into the USA.

ELECTRONIC LOGBOOK DATA REQUIREMENTS

33. The Consultation considered that electronic logbooks require manual data entry, in contrast to vessel position reports, where the data are automatically generated. The data sets required for the electronic logbook must be determined by the information users. These include fish buyers, fisheries statisticians, fisheries managers and enforcement agencies. In addition to the different user requirements, it is important to make use of the most economical and universally recognized formats for data capture. This will minimize communication costs and, where applicable, facilitate international exchange of market information, or of data required under bilateral, or multilateral fisheries arrangements.

34. The benefits of electronic logbooks include reducing illegible entries, reducing data entry errors at the FMC, securing and verifying authorized data entries, timely submission of catch and other information in relation to management requirements, increased efficiency (concomitant reduction of costs) of data entry, timely verification from other data sources (e.g. landings) and access to electronic markets.

35. The experts noted that electronic logbook data need not necessarily be transmitted via a VMS, or even transmitted at all. The logbook information could be transmitted via radio, email, fax or other means. In many fisheries, electronic logbooks are not transmitted at all; the information is stored aboard the vessel for later submission to, or downloading by, the fishery agency. Further, the experts agreed that electronic logbooks are not always required for daily reporting.

36. Electronic logbook programmes have been used or under development in many regions and nations around the world, including the USA, Japan, Iceland, Australia, European Union (EU) and others. The experts provided two examples of electronic logbook systems, while noting that these programmes were not necessarily any more or less desirable than other electronic logbook systems now in use or under development.

- a) The Secure and Harmonised European Electronic Logbook (SHEEL) is a project financed by the European Community (EC) and undertaken by several EU Member States, Norway and Iceland, in cooperation with the private sector. The EC's Directorate of Fisheries is not, however, committed to adopting such a programme. The objective is to develop, implement and demonstrate a secure, cost effective and harmonized electronic logbook for European fisheries. Specifically, it is intended that SHEEL (i) define the message type and format, the user interface and the services of the system that will facilitate on board inspections; (ii) define all the security measures for ensuring secure data transmissions; and (iii) define the system requirements for transmitting the fisheries report via several communication services.
- b) The Norwegian SatRap system was developed to assist the vessel master with registration of catch and activity reports. Predefined code lists prevent the user from registering wrong codes. The result of a completed registration becomes

a small file in the North Atlantic Format (NAF) that is also encrypted. All messages contain an authenticity code and are saved in an encrypted log. The system requires that the vessel uses an electronic key or "dongle" which is programmed by the Directorate of Fisheries in Norway. The system also gives the ability to confirm whether a message had been sent or not.

37. The discussion of electronic logbooks highlighted a number of design and implementation issues that need to be addressed:

- a) the scope of the electronic logbook, i.e. will they be limited to the replacement of the paper logbook in force, include activity reports, effort reports, observer/inspector data, etc.;
- b) whether or not the electronic logbook will be used in parallel with a paper logbook (for legal reasons of signature, etc.);
- c) management of the process of converting to a totally electronic system;
- d) the need for acknowledgement or confirmation of messages that had been sent from electronic logbooks;
- e) whether the electronic logbooks would be mandatory or voluntary, i.e. allow individual fishers to decide if they want to switch from the paper logbook, or not;
- f) means of integration into regulatory frameworks, with particular attention to the evidential value of the information obtained from the electronic logbook;
- g) compatibility and inter-operability of the flag State logbooks with the requirements of third countries and of RFMOs;
- h) the issue of compatibility, particularly with regard to language;
- i) choice of data standards (e.g. North Atlantic Format, XML, UN/ECE EDIFACT, etc.);
- j) routing of the information (to flag State, to coastal State, to RFMO, etc.);
- k) problems of back-up and recovery procedures in case of technical failures; and
- l) anti-fraud provisions.
- m) Should electronic logbooks be used only in specific fisheries or on board specific size classes of vessels?
- n) Should electronic logbooks be required only for vessels fitted with VMS, or also for non-VMS vessels?

38. The Consultation considered the implementation of an electronic logbook system whereby the initial implementation was restricted to a small "pilot" group of users. Later phases would expand to include larger groups, and ultimately, the scheme would be made compulsory for all users in the regulated fishery.

39. The Consultation reviewed a programme where financial rewards were offered for the submission of logbooks. This scheme had not proven to be completely effective, and a more efficient system to collect comprehensive fisheries data was being sought.

40. The Consultation confirmed that near real time position reports are particularly sensitive and must be handled in strict accordance with the law, and the confidentiality requirements of the industry. The electronic submission of catch information which can be linked in near-real time with position reports increases the sensitive nature of the data, with a heightened need for safeguards and data security.

USE OF DATA SETS FROM THE COORDINATING WORKING PARTY ON FISHERY STATISTICS

41. The Coordinating Working Party on Fishery Statistics (CWP) was established in 1959-60, with origins in the North Atlantic area. The CWP has evolved over time, and now has a global mandate. The group is comprised of fisheries management, advisory and scientific bodies, with the FAO functioning as secretariat. The mandates of the CWP are to:

- a) keep under continuous review the requirements for fisheries (including aquaculture) statistics for the purposes of research, policy making and management taking into account, *inter alia*, their purpose usefulness, costs, burden in collection and collation, timeliness, quality, confidentiality needs and regional differences;
- b) develop and agree standard concepts, definitions, classifications and methodologies for the collection and collation of statistics; and
- c) make proposals and recommendations for action in relation to the collection and collation and dissemination of fishery statistics recognising the need to coordinate activities so as to avoid duplication.

42. The CWP⁴ has produced a Handbook of Fisheries Statistical Standards which presents harmonized definitions and classifications developed over many years. These include, *inter alia*, different catch concepts, catch nationality, logbooks, conversion factors and fisheries commodities classifications.

43. Of particular interest to MCS, the CWP has developed or recommended upon:

- a) country or area codes (3-alpha ISO code);
- b) inter-agency 3-alpha code to report statistics by species items⁵ and groups of aquatic animals and plants (ISSCAAP);
- c) fishing gears (ISSCFG);
- d) major fishing areas for statistical purposes;
- e) fishing vessels, through the International Standard Statistical Classification of Fishery Vessels (ISSCFV); and
- f) commodities, through the International Standard Statistical Classification of Fishery Commodities (ISSCFC).

44. The Consultation recognized the significant progress made in the area of data format standardization by the CWP, and noted that, with assistance from the FAO, CWP members could enhance the usefulness of the CWP to fisheries MCS by:

- a) recommending field codes and data formats or database interchange formats for fishing vessel databases, to facilitate the crosschecking of vessel records in such databases;
- b) recommending standards for international communication of information on fishing vessel authorizations; and

⁴ www.fao.org/fi/body/rfb/cwp/cwp_home.htm

⁵ Compiled in the "ASFIS list of species for fishery statistics purposes" (downloadable at www.fao.org/fi/statist/fisof/asfis/asfis.asp)

- c) adopting the United Nations Code for Trade and Transport Locations⁶ (UN-LOCODE) as a standard for identification of fishing ports in fisheries-related databases and international exchange of fisheries data; and
- d) recommending definitions for major violations and codes for the international exchange of information on major violations.

45. The experts were of the understanding that there appeared to be no formal procedure for establishing international standards for fisheries data and were of the view that FAO, through the CWP, could propose a formal procedure to propose, review and recommend upon such standards as may be required. The procedures used by other international bodies such as ISO may provide a suitable model.

USE OF CUSTOMS TARIFF CODES

46. It was noted that a number of coding systems existed for fish and fish products, including:

- a) Harmonized System (2002): Codes for fish and fisheries products (World Customs Organization);
- b) Combined Nomenclature (2004): Codes for fish and fish products (European Community);
- c) Harmonized Tariff Schedule (2004): Codes for fish and fish products (USA);
- d) Customs Tariff Nomenclature (2002) Codes for fish and fish products (Thailand); and
- e) International Standard Statistical Classification of Fishery Commodities (FAO).

47. The experts noted that the CWP had compiled a document cross-correlating the more important of these: FAO's ISSCFC; the International Statistical Standard for the Classification of Aquatic Animal and Plants; the UN Statistical International Trade Classification; and the Harmonised System of the World Customs Organisation. The Consultation expressed its desire that the use of common codes be pursued and that, for fisheries MCS, the code be the FAO ISSCFC.

LINKAGES WITH TRACEABILITY AND ECOLABELLING

48. The experts remarked that traceability is a relatively new concept, introduced in fisheries to assist in improving food safety. The implementation of new regulations within the EU now requires that all food products be traceable back to their source, so that if a food recall were required, all food products emanating from a particular source or through a particular process could be identified and recalled.

49. The advances made by the EC-funded TRACEFISH⁷ project were noted. The project developed specifications for information to be generated and held by the food businesses involved in captured fish distribution chains and a technical specification for the electronic encoding of the data involved. The specifications include vessel units, trade units (e.g. individual fish, fish box, fish hold, batch, etc.), and logistic

⁶ www.unece.org/cefact/locode/service/main.htm

⁷ www.tracefish.org

units with respect to the different actors in the production and distribution chain (e.g. vessel operators, fish auctions, transporters and processors).

50. Ecolabelling in fisheries differs from traceability in that it is designed to ensure that fish for food had been caught in a sustainable or responsible manner. For example, several non-governmental entities are advocates of this process and have certified certain fisheries as being conducted in a sustainable manner, enabling the products to be labelled accordingly, with the intended goal that such products be preferred by consumers.

51. Ecolabelling and traceability address similar issues and problems and could use similar codes and data formats as in VMS and MCS. The labels or documentation, however, must accompany the products, which is a different concept from VMS and MCS where the objective of the communication is to determine activity remotely. The Consultation, therefore, felt it could not make any recommendations in this regard other than that noting that the promoters of such schemes should also use CWP codes.

52. The experts noted that the market, i.e. consumers, were playing an increasingly large part in demanding increased information about their food products and labelling of fisheries products and, thus, influencing the content and format of information related to these activities.

RECOMMENDATIONS ON DATA FORMATS AND PROCEDURES FOR MCS

53. The experts noted that many of the issues raised at the Consultation had already been the subject of recommendations by other Expert Consultations and similar meetings where the need had been reaffirmed for an effective clearinghouse of MCS data formats and standards.

54. The Consultation further noted that the CWP membership represented most of the parties concerned with the international exchange of MCS information, and considered the CWP to be the primary international body for this purpose.

55. The Expert Consultation recommended as follows:

- a) When establishing data formats and procedures for MCS, States, RFMOs and other entities that are concerned with the international exchange of MCS data, are encouraged wherever possible to make use of the existing international codes and standards as recommended by the CWP.
- b) FAO should take measures to increase awareness of the mission and objectives of the CWP, improve access to the CWP web site and documents, and facilitate greater use of standards already agreed for fisheries data formats and procedures.
- c) The CWP should establish procedures for the proposal and adoption of internationally acceptable data formats and procedures for MCS, including a mechanism for achieving CWP consensus by remote means, so that the CWP

can facilitate its role as a clearinghouse for international fishery data standards and procedures.

- d) FAO, in close coordination with the CWP, should identify gaps and/or conflicts in existing data standards, and pursue initiatives to establish required international standards.
- e) The CWP should encourage newly established RFMOs and current non-member RFMOs to adopt existing international standards for data collection, recording and international exchange, and to seek membership in the CWP with a view to playing an active role in its activities.
- f) Where different coding schemes are used for describing equivalent data elements, FAO should prepare and make available, through the CWP web site and reports, tables indicating the correspondence between the codes as a step towards possible harmonization of such codes.
- g) The Secretariat of the CWP should provide copies of this report ("Report of the Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance, Bergen, Norway, 25-27 October 2004") to the members of the CWP.
- h) Flag States should require that their vessels report directly to the flag State's FMC.
- i) The CWP should consider the "North Atlantic Format" for adoption as the model for developing an international standard for VMS position and catch reporting, and the CWP should enter into a dialogue with NEAFC with regard to the custodianship of the international format, and establish protocols for future alterations of the international format.
- j) All flag States should establish an electronic database of their fishing vessels, with particular reference to large vessels and vessels operating outside the waters under their jurisdiction. In establishing such databases, flag States should take due notice of the database structures and codes used at international level.
- k) The CWP, with assistance from FAO and CWP members, should:
 - (i) recommend field codes and data formats, or database interchange formats, for fishing vessel databases, such as those required under the Compliance Agreement, in order to facilitate the crosschecking in, and exchange among, databases of fishing vessels;
 - (ii) recommend standards for the international exchange of information on fishing vessel authorizations;
 - (iii) adopt the UN-LOCODE as a standard for identification of fishing ports in fisheries-related databases and international exchange of data; and
 - (iv) recommend definitions for major fisheries violations and the respective codes for violations to facilitate international exchange of information on violations.

- l) FAO should synthesize available information on electronic logbooks with a view to establishing standard data formats. Where possible, fisheries authorities should use existing codes and formats as recommended by the CWP.

- m) Ecolabelling certification bodies should use internationally accepted codes as recommended by the CWP.

ADOPTION OF RECOMMENDATIONS AND REPORT

56. This report and its recommendations were adopted by the Expert Consultation on 27 October 2004.

APPENDIX A

Agenda

1. Opening of session
2. Election of Chair and Vice-Chair
3. Adoption of the agenda
4. VMS reporting procedures
- 4.a Licences and fishing authorizations
5. Exchange of catch certificates and trade documents
6. Electronic logbook data requirements
7. Use of data sets from the Coordinating Working Party on Statistics
8. Use of Customs Tariff Codes
9. Linkages with traceability and ecolabelling
10. Other matters
11. Adoption of the recommendations and report

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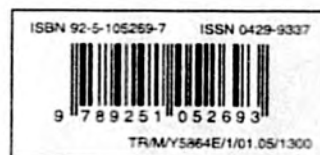
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APPENDIX C

LIST OF DOCUMENTS

- VMS Reporting Procedures
- Exchange of Catch Certificates and Trade Documents
- Electronic Logbook Data Requirements
- Use of data sets from the Coordinating Working Party on Statistics
- Use of Customs Tariff Codes
- Linkages with Traceability and Ecolabelling
- International network for the cooperation and coordination of fisheries-related monitoring, control and surveillance activities: Technical terms of reference
- North East Atlantic Fisheries Commission: Scheme of Control and Enforcement
- NEAFC Monitoring, Inspection and Surveillance Communication System (Draft)
- CCAMLR XXII Report - Annex 9

The Expert Consultation on Data Formats and Procedures for Monitoring, Control and Surveillance, held in Bergen (Norway) in October 2004, made a number of recommendations for more effective harmonization and exchange of fishing vessel information, with a view to facilitating implementation of the International Plan of Action to Deter, Prevent and Eliminate Illegal, Unreported and Unregulated Fishing. The experts emphasized that an efficient path to standardized data formats would be the use of existing and developing data sets from the Coordinating Working Party on Fishery Statistics (CWP). Topics covered at this meeting included: fishing vessel monitoring system reporting procedures; licences and fishing authorizations; exchange of catch certificates and trade documents; electronic fishing logbooks; progress made by the CWP; the use of Customs Tariff Codes; and linkages with traceability and ecolabelling.



Get testimony from Susan Swartz →

→ public comment will soon open ~~for~~ to

→ Review exception for comment f/V
65' and over

Coordinate between V.M.S./A.F.S. (?)

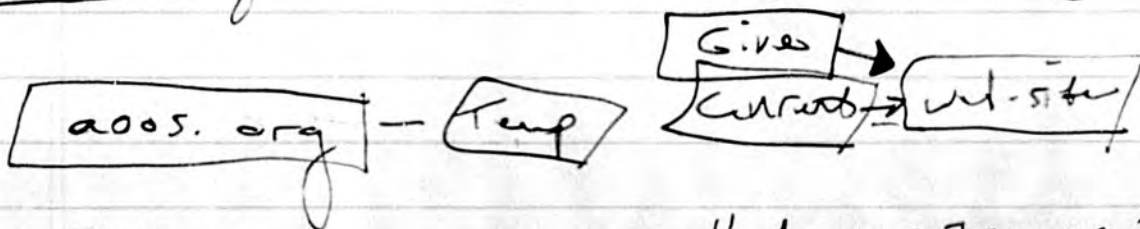
If opening in current Transit area -

Vessel traffic system (V.T.S.) - run straight
rules - physical range vessel movement.
Habitat / Calves etc.

If exception lifted → some requirements will
apply whether inside or outside
Vessel Traffic Area ?

(?)

Dan knew what timeline will be
will expect a notice soon - Notice of proposed
rule making - To make ^{A.F.S. requests} turn to 65'



Information on cost = Hardware = 300,000 - opened
150,000 per
year to maintain

High frequency Radar

Top layer of surface water

Where see on internet

Alaska Ocean Observing System
AOOS.org

Cost \$150,000 operating

OP# 90 requirement

Vessel Monitoring System

The Council reviewed an initial draft of a comprehensive Vessel Monitoring System (VMS) program for Alaska. In December 2005, the Council initiated an analysis to increase the number of commercial fishing vessels operating in the EEZ off Alaska that are subject to requirements to carry a transmitting VMS. A VMS combines a global positioning system (GPS) and a radio, and sends periodic signals to overhead satellites so the location of the vessel carrying it can be tracked remotely. The Council developed alternatives over several meetings in 2006. During a review in October 2006 the Council prepared a problem statement to accompany the purpose and need statement, and requested analysis of three new options: (1) exempt vessels deploying danglebar gear; (2) exempt troll fishermen operating in federal waters who keep legal halibut as bycatch in their fishery; (3) exempt vessels with minimal annual landings of halibut or sablefish IFQ below the thresholds of 1,000, 5,000, and 10,000 pounds.

After much deliberation, the Council decided to postpone indefinitely any further work on a comprehensive VMS program. The Council noted that other tools may be available to address specific problems or enforcement needs for different circumstances, and a comprehensive solution may not be optimal. Staff contact is Cathy Coon.

Seabird Avoidance Regulations

Based on an EA/RIR/IRFA and new data presented by the U.S. Fish & Wildlife Service on short-tailed albatross, the Council approved a revision to seabird deterrence regulations in the hook and line fisheries. For inside waters, which include southeast Alaska, Prince William Sound, and Cook Inlet, use of seabird deterrence will not be required. Waters not considered "inside" include the entire EEZ and three areas of southeast Alaska: outer Chatham Strait, Dixon Entrance, and outer Cross Sound. In these waters, the use of seabird deterrence devices by all hook and line vessels will continue to be required but performance standards for small vessels (>26 ≤55 ft LOA) will change, depending on vessel rigging and vessel length. The Council also approved eliminating the "other device" requirement and the seabird avoidance plan. The Council's motion is available on the Council's web site, including maps delineating inside and outside waters. The Council also approved of proceeding with analysis of a trailing amendment to exempt small vessels from seabird deterrence regulations in IPHC Area 4E. Staff contact is Bill Wilson.

FMP Consultation Schedule

The Council received an update from NMFS on the agency's plans for completing a revised draft of the Draft Revised Steller Sea Lion Recovery Plan (recovery plan). NMFS reported that it intends to reprioritize completion of another draft of the recovery plan prior to completing a draft Biological Opinion (BiOp). Based on public comment and Council discussion, the Council recommended to NMFS that a work plan and schedule for completion of the revised draft recovery plan, which would include a series of scientific workshops, a white paper on ESA-listed species recovery criteria, and continued development of the draft BiOp, be developed by Council and agency staffs and brought to the Council at its March/April meeting. The Council recommended to NMFS that the work plan include a process for independent peer review of the draft revised recovery plan. The Council may schedule a special Council meeting, likely in August, to review a revised recovery plan as well as results of the peer review. Staff contact is Bill Wilson.

List of Fisheries

The SSC received a detailed presentation from NMFS analysts on the process the agency uses to develop the annual List of Fisheries (LOF). The SSC had an opportunity to explore various questions the SSC has raised in recent years, including concerns over reliance on data sets that may be many years old and not characteristic of how some fisheries are prosecuted now. The SSC suggested some alternative analysis strategies the agency may consider. NMFS indicated that, in the future, it intends to publish the draft LOF for the coming calendar year in time for the annual June Council meeting. For the LOF for 2008, NMFS intends to provide to the Council the draft prior to the June 2007 Council meeting; at this meeting the SSC will also receive a report (Perez 2006) on the data and analysis protocols used to classify fisheries in the LOF for 2007. Additional information on SSC comments on the LOF process is provided in the SSC meeting minutes posted on the Council's web site. Staff contact is Bill Wilson.

Joint Meeting Scheduled

The Council and the Alaska Board of Fisheries will meet jointly on Wednesday afternoon, March 28, 2007 in conjunction with the Council's March/April 2007 meeting. The Council and BOF will discuss issues of mutual interest, including the recently postponed BOF proposals to change the management of the State waters Pacific cod fishery in the Western Gulf of Alaska. These proposals, numbers 182, 183, and 185 were not approved by the BOF pending joint discussions at the March meeting. Staff contacts are Jane DiCosimo and Bill Wilson.



Alaska Trollers Association

130 Seward St., No. 211
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(907) 586-9400
(907) 586-4473 Fax

February 3, 2007

Stephanie Madsen, Chair
North Pacific Fishery Management Council
605 W. 4th Avenue, Suite 306
Anchorage, AK 99501-2252

Dear Ms. Madsen and Council Members:

The Alaska Trollers Association (ATA) opposes the general application of Vessel Monitoring System (VMS) requirements on small vessels operating in the Eastern Gulf of Alaska. **Implementation of a VMS requirement would place a large economic burden on small boat operators and be personally intrusive to our members.**

If the Council intends to move ahead with VMS in the Eastern Gulf of Alaska, ATA requests a hearing be held in Southeast prior to taking action on this matter. It is important that a date be selected that would allow optimum input from the affected fleets and that adequate notice is provided.

ATA is the representative organization for over 2600 troll permit holders. Currently, about 800 power trollers and several hundred hand trollers actively fish for salmon with hook and line gear in state and federal waters off SE Alaska. Many of these boats are family-run operations and some of our members live aboard their vessels. A large number of trollers possess small amounts of IFQ share, particularly halibut, which plays an important role as supplementary income to their salmon fishing operations. The troll fleet is crucial to the health of coastal towns and villages in SE Alaska. With more troll permits in each town than any other permit class, and one of every 35 people working the back deck of a troll boat, our fishermen make a significant contribution to the regional economy.

The VMS regulations you are considering do not seem to respond to any particular problem statement and clearly ignore the physical and economic realities of fleets like ours. VMS units are very expensive to install and maintain. The cost of installation is expected to be over \$2000 and there will be added expense as the equipment is maintained. VMS will be one more piece of equipment subject to break down, with fishermen losing precious fishing time awaiting repair or replacement. For a typical troller with 3000 pounds of halibut IFQ, the cost of VMS could diminish, or even eliminate, the income potential of their IFQ harvest. The impact of lost fishing time, in any fishery, will be far worse if the vessel owner is still paying off permit, boat, and IFQ loans, which is a major disincentive for new entrants. In effect, if VMS is required only for IFQ fisheries, it could ultimately force some trollers to sell their halibut or black cod shares, which in turn will negatively impact the bottom line of their salmon business. If VMS is required for the salmon fishery as well, many fear they will have to sell out altogether as they can't afford the equipment or the increased risk of lost fishing time.

VMS units are reported to be prone to failure and maintaining functional equipment could impose a large burden on the troll fleet. Most troll vessels are less than 50 feet in length. Ocean conditions will be a factor, because smaller vessels tend to get pitched around more than the larger crabbers and trawlers. This could increase the breakage rate of the VMS unit, which in turn would lead to lost fishing time spent sitting in port awaiting expensive repairs. Since many trollers operate out of small villages such as Pelican, Port Alexander and Meyers Chuck, the cost of flying someone in for repairs is very high. For instance, a round trip floatplane ticket from Juneau to Pelican this week runs about \$300. Running to a large town such as Juneau, Sitka, or Ketchikan would also mean a significant cost in time, fuel, and moorage fees – if space is even available. Although these costs may be more easily absorbed by large operators who catch hundreds of thousands of pounds of fish worth millions of dollars, it will be cost prohibitive for trollers and other fishermen who make more modest wages.

ATA views VMS requirements for small vessels in the Eastern Gulf of Alaska unnecessary and unreasonable. The case has not been made that VMS is necessary in this region, which is heavily regulated and relatively easy to enforce. Most of the restricted areas of concern to NMFS are in state waters. There are no significant enforcement problems being documented in the region that demand a VMS solution. However, if problems do arise, perhaps those individuals found guilty of fishing in restricted areas could be required to pay for and carry VMS systems. The threat of carrying an expensive and invasive device such as a VMS would act as a strong deterrent for those that might consider fishing in illegal areas. But why should the law abiding majority of the fleet be forced to bear that burden of cost and loss of privacy? And privacy will definitely be a problem for our fleet. Many trollers live aboard their boats, and every day the vessel is moving about is not necessarily a fishing day – how will that be dealt with?

VMS and/or AIS would be both economically burdensome and punitive for small boat fishermen, most of whom are law abiding citizens. Ironically, some in our fleet took a proactive role in the creation of the restricted zones, which are the focus of the VMS discussion. At that time, NMFS agreed that VMS would not be a requirement within EFH areas in the Eastern Gulf of Alaska, yet now the discussion has changed. If the Council enacts VMS regulations as a universal, industry funded requirement, the de-facto result will be the continued erosion of small family owned fishing operations and the coastal communities who rely upon them.

ATA asks that the NPFMC exempt the Eastern Gulf from VMS requirements. While an effective alternative might be to consider placing VMS on the boats of those found guilty of fishing in restricted waters, requiring fishermen to carry these systems for their troll or longline operations will merely lead to the further marginalization of small business.

Best regards,

A handwritten signature in cursive script that reads "Dale Kelley". The signature is written in dark ink and is positioned above the printed name and title.

Dale Kelley
Executive Director