

To: Mark Holliday; George Lapointe
From: Erika Feller
Date: September 30, 2013
Re: Comments of The Nature Conservancy on Discussion Draft on Electronic Monitoring and Electronic Reporting: Guidance & Best Practices for Federally-Managed Fisheries

Thank you for considering the comments of The Nature Conservancy (the Conservancy) on NMFS' discussion draft on Electronic Monitoring and Electronic Reporting: Guidance & Best Practices for Federally-Managed Fisheries released in August 2013.

The Conservancy is a non-profit organization whose mission is to conserve the lands and waters on which all life depends. We are best known for our science-based, collaborative approach to developing creative solutions to conservation challenges. Our on-the-ground conservation work is carried out in all 50 states and more than 30 foreign countries and is supported by approximately one million individual members.

The Conservancy strongly supports NMFS' leadership in encouraging adoption of electronic reporting and monitoring for federal fisheries. We believe that greater use of technology holds great promise for increasing the timeliness, quality and usability of fishery data thereby improving the effectiveness of fishery management and maintaining healthy stocks and ecosystems. Over time, use of technology could also help to reduce the cost of monitoring to the government even as it improves the quality and usability of information.

We feel there are a number of areas where this discussion draft could be strengthened. What follows are some general comments followed by comments organized by section of the Discussion Draft. Please note, that for the purposes of these comments, we use the following definitions of electronic monitoring and electronic reporting which seem to agree with how they are described in the footnote on page *vi*. We see electronic reporting (ER) as a new tool that can use tablets or laptops to collect data that is typically collected using logbooks, landing receipts, trip/fish tickets, or vessel trip reports. Electronic monitoring (EM) employs vessel monitoring systems, cameras, or other on-board sensors to track at-sea activity which is currently commonly monitoring by means of on-board observers, logbooks, VMS or other mechanisms.

General comments:

- The draft treats EM and ER as the same and interchangeable ideas subject to similar process considerations. In practical terms implementing each may raise different issues and require very different types of decisions and process. Replacing paper with electronic reporting systems – while not simple - is a relatively straightforward question of replacing the former with the latter. Implementing electronic monitoring, on the other hand, is likely to be much more complex. NMFS should consider these differences, and treat monitoring and reporting separately as appropriate to offer practical guidance for decision makers. We believe that there are achievable, near term gains possible through broad scale implementation of electronic reporting systems and we should not wait. There are important opportunities to implement electronic monitoring on a pilot basis
- The discussion draft focuses mostly on methods for data collection with little discussion of considerations for the management and use of fishery data. One of the benefits of EM/ER is that it

would simplify the management and enhance the usability of data by authorized users. How data are managed and used should be part of the decision to use EM or ER systems. Moreover, there are likely some core issues, relevant to every federal fishery that NMFS could address to make it easier to design new EM and ER systems.

- Overall, the discussion draft seems to set an artificially high standard for transition to electronic systems and does not consider the imperfections of existing monitoring systems. Currently, we have fishery monitoring systems that are designed with an expectation of accuracy and precision that is rarely achieved. We should have high expectations for what fishery monitoring programs should deliver and those expectations should drive continual improvements. This discussion draft, however, seems to suggest that EM/ER systems must meet those high expectations, rather than setting more realistic benchmarks for improvements these systems can offer toward getting the job done at a reasonable cost.
- The discussion draft appears to create an extensive, top-down, very government-centric planning process for adopting EM/ER systems. Although, this is mentioned in section 2.5, the discussion draft provides little guidance about how to create a system that is flexible enough to incorporate new approaches to monitoring developed by fishing groups to address their specific needs. There appears to be no guidance for considering how industry developed systems could fit as an option for providing data. The discussion draft should suggest the development of clear standards for fishery monitoring that could allow for a variety of monitoring approaches, established by government or by third parties, provided the data delivered by these systems to the government meet some basic standards for content, timeliness, validation, security and other considerations.
- The discussion draft doesn't address the limitations of NMFS and state information management infrastructure. This includes the state and federal data management systems and state and federal rules for fishery data collection, management, and use. States are often the first receivers of fishery data – such as landing receipts - and in many regions of the country those requirements may affect the implementation of EM/ER systems. How should NMFS and the Councils proceed in working with the states to better align systems to allow for effective use of monitoring technology that complies fully with federal and state requirements?
- The draft provides little guidance for navigating the variety of uses of fishery data, and possible legal constraints on its use. Specifically, the discussion draft doesn't address federal rules relevant to data collection, management and use that might affect the transition to EM/ER. This discussion draft would be strengthened by describing what those relevant rules and guidance are and laying out a process for revising or updating them. It is our experience that many of these rules were developed before widespread use of technology was contemplated for reporting, thus it is unclear how these rules should be applied to the unique considerations involved in EM/ER. This makes it very difficult for stakeholders to understand what legal requirements affect their proposals to Councils regarding improvements to monitoring in their fisheries and makes it increasingly likely that different regional interpretations of the legal requirements will frustrate implementation.
- The document appears to focus exclusively on use of EM/ER in commercial fisheries. This appears evident by the choice of language (“fishing industry”) and in what it omits (any discussion of unique requirements for recreational fisheries). If that is the intent, this focus should be stated up front.

- Throughout the document are numerous references to the cost of the system, but the cost to who is not consistently identified. In the West Coast groundfish fishery and Alaska pollock, monitoring requirements are mandated and industry must pay the cost. The discussion draft should be revised to specify whose costs should be considered. We recommend that in all cases, the total cost of the monitoring system to all parties should be considered when evaluating the value of the proposed system.
- The discussion draft cites the tension between collecting data for catch accounting and providing useful information for stock assessments, but doesn't provide real guidance how to resolve that tension.

Comments on Section 1: Introduction

We support NOAA's policy for encouraging use of using electronic monitoring and reporting to collect data, but find that the policy overlooks the implications for management and use of data. In particular NOAA should adopt a policy to facilitate access to data by authorized persons. It can be incredibly difficult, even for persons authorized to access confidential fishery data to gain access to this information. It can take a year or more to receive a report, reports are provided in forms that are difficult to use (e.g., as a print-out or a .pdf file), and the process can be very confusing.

Improving collection and management of data through the greater use of technology could make data easier to access and use. This could result in more timely information to managers, make data more usable for preparation of stock assessments, and facilitate fishermen's access to their own data. The policy should include a principle that NMFS will design data management systems that use automated programming interfaces (APIs) or other such tools to facilitate fishermen access to their data.

Comments on Section 2: A Roadmap for Developing a Monitoring Strategy

Section 2.1 – Phase 1: Assessment

The section states on page 5 that that "EM/ER will more often than not be implemented as a change to an existing system rather than initiated in an entirely new fishery." Designing a system for an entirely new fishery seems unusual, but many fisheries have gaps in monitoring where EM or ER might be employed to fill a gap that is not currently covered. How many fisheries lack basic monitoring? Switching from one monitoring tool to another may be more complicated than implementing something wholly new.

Any assessment should seek to describe the purpose and goal of monitoring the fishery and should evaluate options against those goals, not against the existing monitoring system. Further, as described in the section on "Funding" on page 6, this assessment should consider ways that EM/ER could complement business recordkeeping practices (such as the Seastate or eCatch programs used by co-operatives and risk pools on the West Coast and in Alaska). This could offer opportunities for efficiencies across government and private sector management costs.

On page 6, the discussion draft recommends an assessment of the current government funding from all federal and state sources being expended on fishery dependent data as an essential step. In our experience, this has been a very difficult thing for federal and state governments to report. However,

we agree this information would be incredibly helpful in evaluating different monitoring approaches, but the perceived need for this information should not be allowed to become a barrier to the process.

Finally, we found the “Best Practice” described at the bottom of page 6 very confusing. If the point is that NMFS staff should consult a wide variety of experts in conducting an assessment then that could be stated more clearly. As it is, the paragraph uses examples that seem to suggest a narrow universe of experts from only a couple of regions. It excludes experts from fishing sectors, companies that provide monitoring or reporting services, nongovernmental organizations, or others who may be on the ground in various regions who may have expertise or insights to offer. Finally, and most importantly, it excludes representatives from state agencies with responsibility and decisionmaking authority relevant to fishery monitoring. We recommend this be made more general and if specific organization recommendations are needed include a more complete list in an appendix.

Section 2.2 – Identification of Objectives for a Monitoring Program

On page 7, the discussion draft notes that monitoring objectives must be constrained by reality. We agree and believe it would be helpful to provide some guidance here about those things that should be kept as core considerations.

We believe the following paragraph from section 2.5 (p. 13) should be moved to this section:

“[B]ecause improvements in EM/ER technology occur more rapidly than fishery managers and regulators are used to, the regulatory framework implementing EM/ER should be structured around requirements [or standards] rather than specific devices to account for the dynamic nature of hardware and software improvements, substitutions, replacements, and revisions.”

Moreover, fishery participants’ willingness and interest in playing a role in monitoring programs may also change over time depending on a variety of factors. Such a flexible framework could offer ways that private sector groups could devise monitoring systems they are willing and able pay for and that meet government standards. The discussion draft describes a continuum of scenarios for who bears responsibilities for data collection – from a government specified and funded reporting system to one where government sets standards and responsibility is devolved to a fishing group or groups. These conversations should begin at the assessment stage, but recognize that the content of the discussion about where a fishery is on that continuum is very likely to change over time, even over the time it takes to consider and develop new monitoring options and may even be influenced by the choice of monitoring option.

This section also discusses who covers the cost of monitoring. It may be very difficult at the early stage of decisionmaking to establish who should pay. A determination about whether something is “minimum essential data” or “nice-to-have data elements” could be affected by the decision of who pays. The goal should be to ensure a system is cost-effective, meaning the value gained is worth the cost, regardless of who pays.

We recommend a best practice for this section is to consider using this assessment to build several scenarios that will allow Councils and stakeholders to play out how different options might affect different fishery management goals - economic value, stability, reduce bycatch, communities, etc. – and what they will yield in changes or improvements over the existing monitoring system.

Section 2.3 – Program Design

On page 8, please consider that some of the barriers to achieving the goals of incorporating EM/ER may not be related to fishery management rules. Other barriers or considerations could include law enforcement procedures, confidentiality policies, suitability of information infrastructure, funding and economics of the fishery, availability of technology, or incompatibility of state-level requirements with the new system.

These considerations may affect EM and ER decisions differently. We believe this is an important reason to consider addressing each of these individually in this discussion draft and not use them interchangeably. For example, consideration of law enforcement procedures for implementing an e-logbook may focus on chain of custody of data and procedures to verify digital signatures. Electronic monitoring systems, on the other hand, could raise wholly new enforcement considerations – e.g., new penalties for tampering with equipment.

Section 2.5 – Implementation

We agree with the statement on page 13 about the need to structure the regulatory framework around requirements or, better yet, structure the regulatory framework around standards rather than systems to accommodate the ever evolving nature of technology. These standards should be based on the goals of the monitoring program which are defined up front. Further, we believe this idea should be moved up to an earlier section, perhaps 2.2 on Goals or 2.3 on Program Design. This is an important overarching idea about implementation of EM/ER that should be agreed to well before implementation.

Please consider clarifying what is meant by “requirements” as it is used in this section. We assume that this means the management information required to be collected by the system and the laws that must be complied with in implementing such a system. This could be taken to mean the reporting requirements that fishery participants must meet.

Section 2.6 – Review and Adapt

This section provides no guidance regarding how often systems should be reviewed or what topics the review should cover. This is a process that could create an atmosphere that supports continuous improvement, which is essential. Would this review responsibility rest solely on NMFS and the Councils? Industry-led efforts may periodically assess the usefulness of monitoring systems in meeting their needs. Any review and adaptation process should also include information from review of 3rd party systems and should consider how well those systems meet public and private sector goals.

Section 3 – Evaluating Alternative Monitoring Strategies

Section 3.3 – Defining EM/ER Requirements

On page 18, the discussion draft describes the principle NMFS requirements for monitoring, but doesn't describe other requirements. States and the private sector are likely also to have requirements for the system that should be considered early in the process, particularly if the existing or planned system is owned by the state or is expected to be paid for by fishery participants. It may be easier to describe general state requirements for monitoring systems in this discussion draft as industry requirements are likely to vary by fishery and circumstances. For example, if a change to an electronic landing receipt is

contemplated, it may also be useful to explore the states' requirements (e.g., assessing taxes on sale of fish) in addition to the federal reporting requirements (e.g., information on timing, quantity, location of landings).

In this section also is included reference to "general government-wide statutory and regulatory standards not set by NOAA that must be complied with." Often one of the biggest barriers to making changes is different interpretation across the regions of these various government-wide and NOAA-specific standards and how they apply to monitoring arrangements. Providing clear and consistent guidance and interpretation of how various laws are to be applied would help. As NMFS periodically reviews regulations or guidance for these laws, the agency should consider whether the regulations or procedures provide guidance that is relevant to the types of monitoring arrangements described in this discussion draft.

On page 19, the discussion draft states that "each of the requirements specified in the roadmap process should be subject to carefully evaluating the trade-offs of the needs of the ultimate user against the cost." It is unclear whose costs those needs are evaluated against. Cost to the federal government, the state, or the private sector? Further, this section asks "are we willing to incur longer delivery periods and/or more handlers of electronic records if it results in cheaper costs?" It may be that managers have to decide if longer delivery periods or more handlers are acceptable if it results in a chain of custody required to satisfy enforcement or other concerns. There are likely a wider variety of potential tradeoffs that should be considered than simply between quality, timeliness and cost as reflected in the draft.

Section 4 – Design Decision Points and Technical Guidance

Section 4.1 – System Structure and Adaptive Management

The Conservancy strongly agrees with opening sentence of this section and would recommend this idea, which also appears in section 2.5, of creating flexible, adaptive systems should be elevated in its importance as a guiding principle for this entire document. Unfortunately, the implication of the remainder of this section is still that monitoring choices will be developed and deployed from the top down. We believe that clear requirements and standards must be established at a fishery-wide level. But decisions regarding new monitoring systems may, under such a flexible and adaptive approach, be advanced by a sector, industry group, or a cooperative. This may indeed be the approach mostly likely to lead to rapid implementation.

Section 4.2 – Controlling and Computing Costs of EM/ER

This section on p. 21 appears overly focused on cost considerations associated with EM technology and doesn't address considerations relevant to ER, which, as discussed earlier, may hold greater and more immediate opportunities for implementation and cost savings. We believe this is one of the areas in which the discussion draft should differentiate between EM and ER.

Our experience is consistent with the section's description of the challenges of collecting cost information about existing monitoring programs. It is not always possible to break down agency budgets in such a way to provide clear information about the cost of monitoring a specific fishery. Further, where NMFS relies on state-based data collection systems, it may be extremely difficult to gather comparable information about each state's costs. This is not addressed in the discussion draft. NMFS could provide some guidance here about what the agency and the Councils should assume about

the cost profile to the federal government, states, and fishery participants for different existing monitoring tools that could be used for comparison.

Finally, this section asks for information on costs associated with various existing non-EM/ER monitoring systems. Attached is a report prepared by CapLog Associates, done at the request of TNC, regarding the cost of observer coverage to the industry in the west coast groundfish trawl fishery. We hope that this information is useful. Please contact us if you have any questions.

Section 4.3 – Generating Revenues for EM/ER

The discussion draft should also address the requirements of MSA 304 (d) regarding establishment of fees to assist with the costs of management, data collection, and enforcement. In cases where the cost of monitoring is proposed to be transitioned to fishery participants, this discussion draft should discuss how assumption of those costs will be addressed in cost recovery calculations. As stated, special consideration should be given by NMFS to the timing of imposing additional costs and the agency should consider phased implementation that might allow the distribution of costs to be revised over time. The cumulative effect of additional costs could have a negative effect on the businesses of fishery participants and could provoke strong opposition to measures that, under different circumstances, could be very beneficial to the conservation, management, and economics of the fishery.

Section 4.4 – Technical Guidance

We agree with the general idea that standards for fishery monitoring systems should be designed on a fishery-by-fishery basis as described in the discussion draft. It may not be feasible and, even if it were, it would be impractical and take too long to develop a national system of fishery data standards that would delay implementation to an unacceptable extent.

However, there are a number of matters described in this section and in these comments – matters related to legal requirements, security, validation, verifying chain of custody, etc. – where having some clear, cross-cutting standards could facilitate development and implementation of EM and ER systems at the regional and state levels. We urge NMFS to identify the narrow set of matters where developing national standards will help and prioritize the development of standards. NMFS should also examine its internal data management system and whether the way it currently manages data will make it possible to get full value out of EM/ER systems – value to the taxpayer and to stakeholders. This work should be done in close coordination with the interstate fish commissions, state agencies and fishery stakeholders.

Again, the examples and recommendations included in this section appear only to indicate considerations for implementing EM systems, not ER. This is particularly notable in the subsections on Enforceability and Data Quality. This is another area where the discussion draft should be amended to separately describe the considerations in transitioning from paper to electronic reports.

We strongly agree with and support the recommendations described in the section on Infrastructure, Data Integration, and Timeliness and we feel that this section could be strengthened. In personal communication with NMFS staff, we have heard that the challenges posed by state data collection and management laws and systems are a barrier to better data integration. For example, in the state of California, state laws regarding data privacy have restricted the federal agency's access to raw data collected by the state. In the PFMC's comments to NMFS on last year's data confidentiality proposed

rule¹, the Groundfish Management Team cited similar concerns with federal confidentiality considerations limiting the state agency members of the GMT's access to certain data needed to develop analyses to inform the PFMC's deliberations. This is not simply a need associated with EM/ER, but failure to address these disconnects will severely impair the potential benefits of technology for fishery management. However, clear basic standards regarding a core set of issues could simplify some fundamental issues in implementing EM/ER and could be useful to developers of monitoring systems in the public or private sector.

In the section on data integration, we are concerned that this may be an area where EM/ER could be held to a higher standard than existing monitoring systems. Our understanding is that integration of data derived from a variety of sources is inconsistent across fisheries under current monitoring systems. If better integration is the goal of an EM/ER system, such should be stated up front and addressed in the section on setting goals. Further, we would note that the issues described here as important for compliance and enforcement may also be important for scientists constructing stock assessment models who would be required to spend a significant amount of time combining different data sets. These issues may also be important to seafood industry programs on seafood safety, certification and traceability.

Finally, throughout this section, issues are described with little guidance how to address them. Some of these are issues where there are several existing examples that could provide helpful lessons learned, others represent fairly new ground. Further, the interrelationship between these issues is not clear. An entirely separate section on uses of data by industry does not obviate the need to explain how uses of data by industry might be relevant to data integration. The section on enforceability doesn't address the role that privately formed cooperatives play in establishing and enforcing measures such as bycatch avoidance in its discussion of data needs. The one subsection on recreational fishery monitoring does not seem adequate to address unique recreational monitoring issues when nearly every reference and example throughout the rest of the discussion draft is relevant to commercial fisheries.

Section 5 – Moving Forward

Section 5.1.2 – EM Gaps

It is unclear what this section is recommending. Is there a specific EM product on the market to which these improvements must be made, are these areas that no existing EM products address adequately, or are these improvements in existing EM technology needed before EM may be considered for use in any U.S. fisheries? This section should be framed as considerations for implementation of EM. As these systems are most likely to be implemented on a fishery by fishery basis, it seems likely that these considerations will come into play differently depending on the fishery.

Section 5.1.3 – ER Gaps

Again, it is unclear specifically to which ER system these recommendations are applicable. These should be framed as considerations for implementation of ER. Moreover, this list could be substantially expanded to consider the role of the states in data collection systems that could be augmented with ER and in what ways might federal and state agencies work together to modernize the entire infrastructure by which data are collected, managed, and used by federal and state agencies.

¹ Docket ID: NOAA-NMFS-2012-0030-0021

5.1.4 – Institutional Gaps

One of the significant institutional gaps not addressed in this section is the need for information technology infrastructure improvements (e.g., data transmission and storage needed for broad scale implementation of EM/ER). Does existing data management infrastructure allow for implementation of EM/ER in such a way that the envisioned efficiencies, improvements in timeliness and quality, and cost savings could actually be realized?

Appendices B1 and B2

We recommend including information in the tables in these two appendices about the usability of data collected through these various systems in stock assessments, compliance and enforcement, or for other purposes.