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Science and Technology

Policy on Electronic Technologies and Fishery-Dependent Data Collection

THIRD-PARTY MINIMUM DATA RETENTION PERIOD IN ELECTRONIC MONITORING PROGRAMS FOR FEDERALLY MANAGED U.S. FISHERIES

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Author name: Brett Alger
Office: Science and Technology

Certified by: David Detlor
Office: Science and Technology

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Signed _____ Digitally signed by DETLOR.DAVID.JOHN.1365860633 Date: 2020.04.01 17:56:15 -04'00'

David Detlor — Date
Acting, Director of Science and Technology

I. Introduction

NOAA Fisheries, in conjunction with Regional Fishery Management Councils (Councils) and State Marine Fisheries Commissions (Commissions), continues to explore electronic technologies (ET) to develop new, and improve existing, fisheries-dependent data collection. These efforts have been guided by and align with the NOAA Fisheries Policy Directive on Electronic Technologies and Fishery Dependent Data Collection[1] to improve the timeliness, quality, integration, cost effectiveness, and accessibility of fishery-dependent data.

The use of electronic monitoring (EM) is an effective tool for collecting critical fishery-dependent data for science and management purposes. Unlike traditional means of data collection in fisheries (e.g., via at-sea observer programs or logbooks), collection of EM data—or the "raw" data that is collected as video, imagery, or sensor data during fishing operations—can require substantially more storage capacity and make up a large portion of EM costs. As such, the fishing industry has raised concerns over their EM data storage costs, including the amount, size, and format of the video being stored, the length of time the video is stored, the storage options utilized (e.g., external hard drives, cloud storage, etc.), and the

[1] ET Policy Directive; *04-115*; updated May 7, 2019. *Available at*: https://www.fisheries.noaa.gov/national/laws-and-policies/science-and-technology-policy-directives

accessibility requirements for accessing EM data from storage.

II. Objective

This procedural directive provides guidance to NOAA Fisheries and the Councils on how long to retain data collected under an EM service provider "third-party" model.[2] In these programs, the fishing industry is responsible for the data storage costs.[3] NOAA Fisheries developed this recommendation in order to balance the fishing industry's request to reduce unnecessary costs, while considering the length of time data must be retained to meet various program objectives. NOAA Fisheries and Councils should use this guidance when developing new, or adjusting existing, EM program requirements through regional fishery management plans and plan amendments, regulatory amendments, and other related fisheries management actions.

This procedural directive applies to the video, images, or other sensor data collected during fishing operations, as well as associated metadata (e.g., trip sail date, vessel information).[4]

This procedural directive does not apply to federal records, as explained in detail below.

III. Guidance

As explained more fully herein, NOAA Fisheries recommends that an EM service provider (defined in greater detail below) certified and/or permitted by NOAA Fisheries and arranged for by the fishing industry that is engaged in the collection, handling, and dissemination of fisheries-dependent EM data retain EM data for a minimum of 12-months. EM data needs to be available for at least this amount of time to accomplish monitoring objectives, including facilitating participating vessel and EM service provider performance and compliance.

This recommendation is a *minimum* retention period and does not prevent NOAA Fisheries or the Councils from recommending a longer retention period depending on the needs and objectives of the program. Further, EM service providers and participating vessels may retain EM data for longer than 12 months if so desired for business or other purposes.

1. Developing a Minimum Retention Period in the Overall EM Data Life Cycle

EM systems are deployed in fisheries with existing data collection tools, including the use of observers, vessel logbooks, or vessel monitoring systems (VMS). All fishery data from EM systems and existing tools are submitted to NOAA Fisheries, and stored for some period of time to meet specific management objectives.

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[2] The "third-party" model involves each participating vessel retaining an EM service provider to collect and review EM data, provide required information to NOAA Fisheries, and store, manage and dispose of EM data in accordance with performance standards and the service provider's contractual agreement with the vessel.

[3] The NOAA Fisheries Procedural Directive on Cost Allocation in Electronic Monitoring Programs for Federally Managed U.S. Fisheries (Cost Allocation Procedural Directive; *04-115-02*; effective May 7, 2019) describes data from EM video, imagery, and associated metadata, as well a service provider's initial review, processing, and storage of EM data, as sampling costs that are the fishing industry's responsibility.

[4] Section III.2 defines EM data.

Currently, most EM data collected in U.S. fisheries have been stored indefinitely by an EM service provider, Commission, or by NOAA Fisheries. Under this procedural directive, EM data will generally go through two basic stages: (1) the fishing and monitoring period; and (2) a 12-month minimum retention period, or the *storage* of EM data (Figure 1). Altogether, this time period covers the collection, submission, and storage of these data. EM applications vary within and across Regions and fisheries given the differences in fishery characteristics and monitoring objectives. For example, EM is used to validate self-reported logbook data, monitor compliance with catch retention requirements, or even to record direct discards in place of a human observer. NOAA Fisheries and Councils should use the high-level framework described below when implementing the 12-month minimum retention period through regional rulemakings or other actions across EM applications.

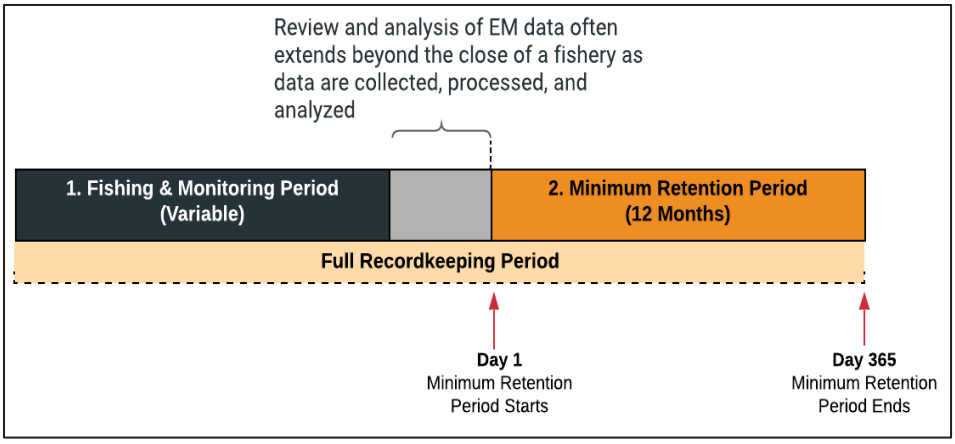

Figure 1. EM Data Life Cycle

A. Fishing Year and Monitoring Period (variable timeframe and program specific)

The fishing year and monitoring period represents the *creation, submission,* and *use* of EM data within the EM data life cycle. Creation is the physical capture or collection of EM data and associated metadata during fishing operations, and may include an initial review or processing by a service provider before it is submitted to NOAA Fisheries for use to meet management objectives.

Fishery operations and monitoring often run concurrently, and like other data collection programs, EM data are processed and submitted after the completion of a fishing trip. In order to complete data reconciliation and monitoring processes for a given fishery, NOAA Fisheries' use of fishery data often extends beyond when a fishing year ends. NOAA Fisheries typically monitors fisheries for 12-month periods (e.g., monitoring for Annual Catch Limits—ACLs), and generally refers to a fishing year as a 12-month period for monitoring and management purposes. However, some fishery operations and monitoring activities may conclude sooner than that, as there are fisheries where the majority of the fishing effort occurs within a few weeks or months, and others may close because a quota is reached or a fishing area is closed. The start dates for fisheries vary across the U.S. (e.g., some fisheries begin on January 1 while others begin on May 1) leading to some fishing and monitoring periods spanning across multiple calendar years. Additionally, some fisheries allocate quota to different sectors, for example, commercial vessels operating under an EM

program have a separate allocation of quota than recreational vessels.
This guidance establishes a framework that allows for variable fishing operations and regional processes for data collection, reconciliation, and allocation, within and across fisheries. This variation is primarily captured in the time it takes to collect and analyze fishery-dependent data from a variety of sources (e.g., vessel logbooks, reports from dealers), and in some cases it may take a few days or weeks at the end of a fishing year, in other cases it takes months. Given the variability among fisheries, or even year to year within a fishery, EM program design should not have a fixed date for beginning data retention. Instead, EM program design should include requirements that establish the start of the 12-month minimum retention period once NOAA Fisheries officially completes data reconciliation and catch monitoring for the fishery. For example, if a quota or ACL is reached and fishing operations are done for the remainder of the year, and NOAA Fisheries is able to complete data reconciliation and catch monitoring process before the end of the fishing year, then it is possible to begin the retention period sooner. In other cases, data reconciliation and monitoring processes are completed after the end of the fishing year. Therefore, the beginning of the retention period should be unique, taking into account the variability across fisheries and/or fishing years, and only apply to the sector of the fishery collecting EM data.

EXAMPLE:

Fishing year A begins on January 1, 2020 and ends on December 31, 2020, data reconciliation and monitoring is completed on March 31, 2021 (i.e., 3 months after fishing year A ends); the 12-month retention period would begin on April 1, 2021.

Fishing year B begins on January 1, 2021 and ends on December 31, 2021, data reconciliation and monitoring is completed on May 31, 2022 (i.e., 5 months after fishing year B ends); the 12-month retention period would be begin on June 1, 2022.

NOAA Fisheries has the responsibility for determining when a quota or ACL is reached (i.e., when fisheries-dependent data is reconciled and the monitoring objective is achieved). In designing an EM program, NOAA Fisheries will notify EM program participants and their respective EM service providers of the beginning of the program's EM data retention period. Guidance for this notification process is not provided in this directive, but could include, for example, a letter from the Regional Administrator or an email.

This procedural directive does not create a fixed monitoring period (e.g., 90 days between the end of the fishing year and the beginning of the 12-month retention period). In effect, a fixed monitoring period would create a situation whereby EM data retention requirements are overriding monitoring processes that are impacted by many other data sources. Additionally, it would also create a total maximum retention period (e.g., 12-month fishing year + 90-day catch monitoring period + 12-month minimum data retention period). For these reasons, NOAA Fisheries recommends that a fixed monitoring period be considered and evaluated through regional processes and not in this procedural directive.

There are some fisheries managed by individual fishing quotas (IFQs) or other vessel-specific sub-allocations of quota. It would be burdensome for NOAA Fisheries and the fishing industry to implement and monitor dozens or more retention periods. To ensure

administrative clarity and to reduce undue burden of monitoring compliance with complex retention requirements, NOAA Fisheries will not support different retention periods among vessels in a fishery.

B. The minimum retention period (no less than 12-months)

The minimum retention period represents the *storage* of EM data and is an integral part of responsible data management. The minimum retention period begins when the fishing and monitoring period is complete. During this period, EM service providers and participating vessels would be subject to an EM data recordkeeping requirement, much like vessel operators are required to retain copies of logbooks or fish dealers are required to keep records of their transactions. NOAA Fisheries recommends a 12-month retention period to ensure that vessel owners' EM data are available to NOAA Fisheries to effectively administer the EM program, and monitor service provider and vessel compliance. This recommendation was developed based on NOAA Fisheries' experience to-date implementing fishery-dependent data collection programs including logbooks, observers, and EM.

Many data collection programs other than EM program have retention requirements greater than 12-months, and there are instances where data quality or program compliance issues are discovered during that longer retention period. However, the storage costs in those other data collection programs are far less expensive than storing EM data, and requiring the fishing industry to retain EM data for the same duration as other programs is unreasonable. Hence, the 12-month minimum retention period reasonably balances minimizing industry's storage costs and ensuring that EM data are available for NOAA Fisheries' to meet program objectives to the extent practicable, including monitoring data quality and program compliance. NOAA Fisheries will revisit this procedural directive as it gains a better understanding of EM program costs and functions over time.

In an EM service provider "third-party" model,[5] data storage would be part of the data services that a vessel owner receives from its EM service provider. Vessel owners would be responsible for these storage costs, along with the other services rendered by the EM service provider, as a condition of the vessel owner's participation in the program. Participating vessels can choose to retain EM data for longer than the minimum retention period.

2. EM Data Subject to this Procedural Directive

For the purposes of this procedural directive, "EM data" refers to the raw data that are created by an EM system and transmitted from the participating vessel to an EM service provider, including the video, images, or other sensor data collected during fishing operations, as well as associated metadata (e.g., trip sail date, vessel information). This procedural directive does not apply to EM data that remains with the EM system on the vessel or the summarized data, compliance reports, and other records that are created from reviewing and analyzing the raw EM data. However, EM programs should be designed to consider the retention of summarized data, which are often less expensive to store and maintain than raw EM data, as well the requirements to retain EM data on the vessel.

[5] *See* supra note 2.

There are three types of existing EM programs: (1) those managed and implemented through regulations; (2) those implemented and managed under an exempted fishing permit (EFP); and (3) pilot projects or EM projects that are testing a new application of EM in a fishery. However, this procedural directive only applies to EM programs managed and implemented through regulations.

This procedural directive does not apply to EM data collected through EFPs. EFPs are an essential tool for examining EM program design choices, such as mechanisms for data transmission, video review and analysis, developing vessel monitoring plans, and other program guidance and requirements. In fact, the use of multi-year EFPs for developing an EM program has been critical in several fisheries, and have even informed this guidance on data retention. While this procedural directive does not directly apply to EFPs, data management and retention requirements should be considered when developing the conditions and requirements of an EFP that will use EM and create a storage burden for participants. For example, it may be prudent to retain all EM data for the entire time period of an EFP, prior to developing the regulations for any implemented programs, at which time, a transition and disposal plan for the retained EM data may be considered.

This procedural directive does not apply to pilot projects and other programs where data are being collected to test the viability of EM. Principle investigators in pilot projects should engage with partners in the event that a pilot project begins transitioning towards implementation under an EFP or regulations to establish a data retention and transition plan for data collected under the pilot project. Additionally, principle investigators should be aware of any terms and conditions associated with the retention of data collected under a federal grant.

The guidance in this procedural directive does not apply federal records or EM data that are created or received by NOAA Fisheries and are subject to the Federal Records Act (FRA).[6] Federal records subject to FRA will be retained according to NOAA Fisheries records retention schedules.[7] These may include, among others, EM data received by NOAA Fisheries for compliance purposes, reviewing video to determine optimal sampling rates, and analyzing data to ensure quality and effective program performance. In these instances, NOAA Fisheries would have a duplicate of the original record that is retained by the EM service provider. It is important for the EM service provider to retain the original EM data in whole to ensure data integrity and administrative clarity, and reduce the burden of having to monitor the compliance of complex retention requirements, as mentioned above.

Corporate records or internal business records (e.g., emails, sales reports, finance documents,

[6] The Federal Records Act (FRA) establishes requirements for storage and disposition of "agency records." Agency records are defined as all books, papers, maps, photographs, etc., made or received by an agency of the United States Government under federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the government or because of the informational value of the data in them.

[7] NOAA Records Schedules, Chapter 1500—Fishery and Living Marine Resources Functional Files—can be found online at: https://www.corporateservices.noaa.gov/audit/records_management/schedules/chapter-1500-marine-fisheries.pdf

marketing materials, human resource records, etc.) are not considered EM data for purposes of this procedural directive, and are not subject to this procedural directive. NOAA Fisheries may require EM service providers and participating vessels to retain other records that are not directly related to data collection and fishery monitoring, such as EM service provider certification documentation, permits, or other agreements for other programmatic purposes on a program-by-program basis.

3. Implementation Guidelines

Fishery Management Plan (FMP) and Rulemaking Considerations

NOAA Fisheries and Councils should use the guidance in this procedural directive to formally establish requirements for data retention when developing new, or adjusting existing, EM programs through FMPs or FMP amendments and implementing regulations. That process includes an opportunity for public notice and comment. If data retention requirements are developed that are different from this guidance, a justification for those differences should be clearly described in the rulemaking.

It is important to consider storage requirements (e.g., local servers vs. cloud services), procedures for accessing data (e.g., how frequent, identify the programs and personnel accessing the data), archival standards, continuity of EM records throughout the EM data life cycle, and procedures for disposal in the design of an EM program. Additionally, each EM program may have varying goals and uses for the EM data, and therefore, it is better that the requirements for EM data management be considered during the design of each unique program. Hence, this procedural directive does not specify how every EM program must store, access, archive, and/or manage EM data.

Implementation Timelines

NOAA Fisheries expects the implementation of a minimum retention period as soon as practicable from the effective date of this directive. The implementation should align, if possible, with the efforts of each program to implement the timelines and provisions described in the EM Cost Allocation Procedural Directive. EM programs that are being developed and subject to this procedural directive should implement requirements for all newly collected EM data in a program. For EM data collected prior to the development of this procedural directive, such as data collected under an EFP prior to developing and implementing final regulations for an EM program, existing records and data should be identified, examined, and processed accordingly for retention or disposal in light of the respective program needs and objectives.

Measuring Effectiveness

EM programs are a new and evolving means of collecting fishery-dependent data. NOAA Fisheries expects to revisit this guidance as it continues to implement new programs and regularly evaluate the tradeoffs of storage costs and data retention. This procedural directive is currently scheduled to be reviewed in 5 years, but could be done sooner if warranted.

Attachment 1 – Glossary

Electronic Monitoring (EM) – The use of technologies—such as video cameras, gear sensors, and reporting systems—to monitor fishing operations, effort, and/or catch.

Electronic Monitoring (EM) Data – the data that are created in the collection of fishery-dependent data by EM systems including the video, images, or other sensor data during fishing operations as well as the metadata that provides information about the raw data (e.g., trip sail date, vessel information).

Electronic Monitoring (EM) Service Provider – For the purpose of this procedural directive, an EM service provider refers to any organization certified and/or permitted by NOAA Fisheries and arranged for by the fishing industry, a Regional Fishery Management Council, or other entity that is engaged in the collection, handling, and dissemination of fisheries-dependent EM data. EM providers may include private businesses, Commissions, non-governmental organizations, or fishing and natural resource advocacy groups.

Electronic Technology(ies) – Any electronic tool used to support fisheries monitoring both onshore and at sea, including electronic reporting (e.g., e-logbooks, tablets, and other input devices), electronic monitoring (e.g., electronic cameras and gear sensors on-board fishing vessels), and vessel monitoring systems.

Fishery-dependent Data Collection Program – Data collected in association with commercial, recreational or subsistence/customary fish harvesting or subsequent processing activities or operations, as opposed to data collected via means independent of fishing operations, such as from research vessel survey cruises or remote sensing devices.