



Vessel Monitoring Plan

2016 EM Cooperative Research Project Participation

Vessel Name:	
Operator Name(s):	
Home Port:	
Landing Port(s):	
VMP Version:	

This vessel monitoring plan (VMP) was developed with the participating vessel crew to identify the specific installation and catch-handling practices that will determine the vessel's unique configuration. This VMP will be shared with the EM workgroup to inform the group about elements of VMPs that should be incorporated into a regulated program.

VMP Sections

- This cover letter contains program details such as the EM system details, operator responsibilities, operator checklist, and trouble-shooting protocols;
- **Appendix A: Installation Summary** defines the vessel-specific installation details, system settings, camera locations and views;
- **Appendix B: Hard Drive Swap and Trouble Shooting** outlines how to conduct a hard drive swap, and provides some typical troubleshooting strategies; and
- **Appendix C: Program Contacts** provides contact information for key program resources and participants.

EM System Details

Your vessel is equipped with an Archipelago EM Observe monitoring system, consisting of cameras, GPS, gear sensors, user interface, and control center.

- The system will record sensor data (GPS, pressure) every 10 seconds while powered.
- Video will be collected from the rail and deck camera view during hauling, and for two hours after the hydraulics are turned off.
- Video will be collected for monitoring compliance with seabird mitigation device regulations. (These settings are vessel specific.)
- If you have installed an engine oil pressure sensor, the system will automatically enter 'sleep mode' when the engine is off (to avoid battery drain). It will be reactivated when the engine is restarted.
- For additional vessel-specific details, see Appendix A: "Installation Summary."

Operator Responsibilities

First Trip Quality Control Review: Operators of vessels selected for EM coverage are strongly encouraged to make their first landing at an EM service port to allow for a quality control visit.

Each Trip

- ~~Log your trip in the Observer Declare and Deploy System (<http://odds.afsc.noaa.gov/>).~~
- **Effort logbooks:** Complete the EM Logbook noting the Trip Start: date, time, port etc.
- **Confirm Hard Drive Storage Space:** The vessel operator must ensure that the system has adequate storage to record the entire trip. The vessel operator must carry one or more spare hard drives, sufficient to record the entire trip, as a back-up.
- **Power:** Maintain uninterrupted electrical power to the EM unit while the vessel is underway (this is not necessary at night when the engine has been powered off and the EM system has entered sleep mode).
- **Function Test:** Prior to leaving port, the vessel operator must turn the system on and conduct a system functionality test. If the functionality test identifies a malfunction, the vessel operator must follow the troubleshooting guidelines and contact Archipelago.

Daily

- **Effort logbooks:** Complete the EM Logbook with the set/haul/effort information.
- **Video quality:** The vessel operator is required to check the monitor before each haul and to clean camera lenses to maintain video quality. Video quality for each set will be reported in the vessel score card by PSMFC.
 - **Catch handling:**
 - **Discard control points.** The vessel operator is responsible for ensuring all catch is handled within view of the cameras as defined in the camera descriptions and deck diagram in Appendix A: "Installation Summary".
 - **Seabirds:** The vessel operator is required to hold incidentally caught seabirds up to the camera for 2-3 seconds and ensure that certain key parts of the animal, such as the beak, are captured by the hauler view camera. **When displaying a seabird to the camera:**
 - Grasp by the outermost bend in wing, with wings out-stretched and show the bird to the hauler camera showing the ventral and dorsal sides;
 - For albatross, show a profile of the bill by holding the bird by the neck against the side of the boat. Ensure that the view is not obstructed; and
 - If possible, hold the bird beak near a scaled reference item (e.g., measurement board with large grid) to assist with identification.

Trip End

- Submit a copy of the trip's EM Logbook and IPHC Logbook (if available) to the contact provided (see Appendix C: "Program Contacts").
- **If landing in Homer or Sitka,** contact the EM Field Coordinator to exchange the hard.
- **If landing in another port,** and it has been more than 14 days since the last data swap:
 - Perform a hard drive exchange and mail the hard drive to the contact provided (as described in Appendix B: "Hard Drive Swap and Troubleshooting").

System Troubleshooting Protocol

Equipment Malfunction in Port

If the functionality test identifies a malfunction, the vessel operator should follow the troubleshooting guidance provided in Appendix B: “Hard Drive Swap and Troubleshooting.” If this does not resolve the issue, the vessel operator must contact the EM service provider immediately. The EM service provider will determine if the malfunction is critical or non-critical based on the EM Work Group definitions.

- **Non-Critical Malfunction:** Only sensor malfunctions will be defined as a non-critical malfunction. If the sensor cannot be fixed or replaced in a timely fashion, the vessel operator may depart on the scheduled trip, but must follow the service provider’s instructions to trigger video recording manually. The vessel operator may not depart on a second trip without a functioning EM system unless approved by NMFS.
- **Critical Malfunction:** A critical malfunction prevents the data collection objectives from being achieved. If the malfunction is a camera defined as “critical,” the vessel must remain in port for up to 48 hours to allow the EM service provider time to effect repairs. If the problem cannot be fixed within the 48 hour window, the vessel may begin the trip, and the service provider will notify NMFS of the situation.

Equipment Malfunction at Sea

- If the system passed the function test prior to leaving port, and remains continuously powered during the trip, the vessel operator is NOT required to return to port in the event of a breakdown.
- Refer to the “Hard Drive Swap and Trouble Shooting” document in Appendix B.
- If the malfunction is not resolved following the guidance, the vessel operator should continue to run the system with all functional parts, and contact the service provider immediately (from sea if possible) to assist with scheduling service at the time of landing.
- Any malfunctions must be fixed prior to departing on subsequent trips. If a vessel has repeat problems with EM system reliability or video quality, that vessel may be removed from the EM pool for a period of time and placed in the human observer pool.
- The vessel must remain in port for up to 48 hours to allow the EM service provider time to effect repairs. If the problem cannot be fixed within the 48 hour window, the vessel may begin the trip, and the service provider will notify NMFS of the situation.

Appendix A: Installation Summary

Appendix B: Hard Drive Swap and Troubleshooting

Appendix C: Program Contacts