PSMFC

ELECTRONIC MONITORING PROGRAM PROTOCOLS:

ALASKA POLLOCK EFP

Electronic Monitoring Protocols:
Video Data Storage, Entry and Maintenance

Project Overview

Beginning in 2018, the North Pacific Fishery Management Council prioritized the development of EM as a monitoring tool for trawl vessels. Participants in the Bering Sea and Gulf of Alaska pelagic trawl catcher vessel Pollock fisheries have been evaluating the use of EM for compliance monitoring. This project will evaluate using EM compliance monitoring as an alternative to the regulatory requirement for human observers onboard Pollock vessels.

This document contains detailed instructions on how to properly store received hard drives, annotate and capture data from the drives and maintain data integrity and quality.

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Data Storage

EM video and sensor data, which is stored on an external hard drive aboard the vessel, is sent by a technician, or someone from the vessel, to the headquarters of PSMFC in Portland, Oregon. Upon arrival, data (raw and non-annotated) is uploaded to a dedicated video server which is duplicated to a back-up server.

As each new hard drive is delivered, it will be prioritized by time of arrival, fishery type, and projected review time. The reviewer will take the next available drive that they are able to review.
1) Each reviewer will complete the following tasks with the drives that they have been assigned:
    a. Data Review
        i. Transfer the drive data onto the server to a Folder with the correlating file name (YY_VesselName##; Example: 20_SunnyShore01)
            a. If the Data Set ID is labelled as ABSENT-ABSENT or is otherwise incorrect
                i. Correct Vessel Name & VesselID fields in vessel setup file (Check VMP)
                ii. Copy corrected vessel setup file to sensor data folder & fix sensor file names
                iii. Re-zip Sensor Folder (send to compressed folder)
        ii. Annotate the Sensor Data (Trip and Haul level) and catch data
            1. Fill out the Drive Report
            2. Export EM Data xml
            3. Enter Data Review completion date
2) After each drive has been transferred onto the server and annotated, the drives should be wiped after 24 hours if no issues with the data (sensor gaps, malfunctions, etc.). If there are issues with the drive, it will be sent to AMR upon request. If after a week there is no follow-up from AMR, the drive should be wiped, erasing all the data permanently. Drive erasure should follow AMR protocols, and returned to provider, dealer, or vessel to be reused on a vessel (if undamaged). Geana Tyler is the designated individual who is managing hard drive mailing. Return the clean drives to her for inventory and mailing. See more details under General Guidelines at the end of this manual.

Data Review

EM sensor and video data are currently reviewed and annotated in the program Electronic Monitoring Interpret Pro™ (EMI) developed by AMR in Victoria, Canada for AMR video.

For EMI created annotation files, name the files using the following format:

Two-digit year of fishing activity (20), followed by an underscore (_), the name of the vessel in capital letters with no spaces or special characters (FISHINGFRIENDS), number indicating the sequence of the drives arrival (01), followed by an underscore (_) with the three letter initials of the reviewer (WBR).

20_FISHINGFRIENDS01_WBR

When loading sensor data into EMI, make sure to load the appropriate configuration:

PSMFC_AK_Trawl.15

Annotation Protocols

Annotations created in EMI fall into two categories: interval annotations (*i.e.* trip, set, and haul) are defined by a start and end point, while point annotations (pots or catch items) are specific to a point in time. Annotations are hierarchical and connected to each other, with the "Data" annotation at the top and point annotations at the bottom. This means that a lower annotation cannot be created without the annotation above it already created. So, in order to create a "video haul" annotation and annotate catch items, a "haul" annotation must be created which the "video haul" is associated with.

Incomplete annotations should be stored on the server, in the "In Progress" annotations folder of the designated reviewer.

Completed annotations should be stored on the server, and located in the "Alaska Completed" annotations folder.

1) If any adjustments are made to the annotation file following completion, save the adjusted annotation file as a new version (*i.e.* 20_PSMFC01_RWRv2) in the Current Versions folder.
2) Place the old version in the "Previous Versions" annotation folder.
3) After all catch annotations have been completed, export the xml file to the server

Creating Interval Annotations:

DATA:

1) Add a "**Data**" line that encompasses all trips and hauls, starting at the beginning of the timeline and stopping at the end of the timeline.
   a. After this is annotated, click "edit" to enter the "**Data Name"**.
      i. The data name should be entered as the two-digit year, vessel name in all capital letters, and the drive number (*i.e.* 20_FISHINGFRIENDS07).
         1. Do not include any spaces or periods in the vessel name, and convert any "&" symbols to "and".
   b. The "**Region**" will default to **Alaska** and cannot be changed
   c. The "**Project**" will default to **AK Trawl EFP** and cannot be changed

TRIP:

2) "Trip" annotations should be created to mark the beginning and end of each individual fishing trip
   a. A "**Trip**" is defined when the vessel first leaves port, to when the catch is offloaded. Use video to verify location of the offload, to be sure the correct return port is recorded. If the cameras are not recording up until the offload, select the first port of landing. This "Trip" may cover multiple days, and the vessel may return to port or overnight in another port. Even though these may appear to be individual trips, they should be encompassed under the same "Trip" annotation until the catch from all of these trips is offloaded. If a vessel is offloading to a tender vessel, the trip (and drive), should end when the vessel begins the offload.
      i. The fish ticket spreadsheet can be used to assist with distinguishing whole trips from merely overnight anchoring behavior. A fish ticket may be missing however, and they should not be relied upon as the sole source of landing information.
   b. Annotate <u>only</u> ocean going trips, even a transfer trip from one port to another that does not have any fishing activity.
      i. For trips that land in port for only a short period of time, and then leave port:
         1. Check the Fish Tickets/Landing Dates spreadsheet to see if there is a fish ticket associated with the date that the vessel landed in port for the short period of time.
            a. If yes: Break the 2 landing dates into 2 trips
            b. If No: Combine these landings as one entire trip
3) Each "**Trip ID**" should be comprised of the two-digit year, vessel name, drive number, and the trip number. So the fourth trip of the first drive of the F/V PSMFC would be: 20_PSMFC01.04
      i. The vessel name should be in all capital letters, consistent with the "data name" format.
      ii. **IMPORTANT**: Do NOT change the Trip ID after XML export, even if a mistake has been made, unless instructed to do so.
   b. The **Gear Type** will default to **Midwater Trawl** and cannot be changed
   c. Add **Port** of departure and return for each trip based on the vessel's location on the map in EMI.
      i. If a trip begins after or ends before a 'Time Gap' and does not begin/end at a port, select 'Other'.
         1. Under the 'Accuracy' drop-down menu, select 'First Point After Time Gap' for a trip beginning after the gap. Select 'Last Point Before Time Gap' for a trip ending before the gap.
   d. Record the **Fishery** type and select "**Apply All**"
      Note: If a haul is fishing for a different fishery than the majority of the hauls, just change the fishery for that specific haul in the haul annotation.
      i. **Pollock**
      ii. **No Fishing Trip** (select for anything other than Pollock fishing, such as Rockfish or Pacific Cod)
   e. Record the **Fish Ticket** number, which will be provided with the landing date for each vessel
      i. There will be **NO** fish ticket number associated with the trip if:
         1. No fishing activity occurred during a trip (port transfer trip, pot setting trip, etc.)
         2. Fishing activity did not result in retained catch and/or landed catch
   f. Record **Reviewer Name** in upper-case, three-part initials (ABC), and select "**Apply All**"
      i. If a different reviewer annotates the catch for a haul, change the Reviewer Name for that specific haul

Time Gaps

4) In the "**Box Graphs**" Section, click only <u>once</u> on the "**A**" next to "**Time Gaps**"; this will auto-annotate all of the sensor gaps within each "Trip"
   a. Select and classify each "Gap":
      i. Event codes viewable by hovering cursor over the gap's bar graph, or selecting View → Event Type → All VDL Events
      ii. Refer to the Time Gap Classification document for more detail
         1. **Sleep Event**: Vessel has a sleep sensor and has entered sleep mode (matching sleep event box graph classification)
         2. **Power Button Pressed – Assume Engine Off**: Power button on the control center is pushed to turn system off. Assume the vessel turned engine off after pushing power button because vessel is in relatively the same area before and after the time gap. Gap was also sufficiently long (an amount of time similar to a sleep event).
         3. **Power Cut – Assume Engine Off**: Power to the control center is disrupted. Assume vessel cut power to the control center in part to turn off EM system. Assume the vessel also turned off the engine after disrupting power to the control center because vessel is in relatively the same area before and after the time gap. Gap was also sufficiently long (an amount of time similar to a sleep event).
         4. **Power Button Pressed** – **Engine Off**: Vessel turns engine off and then pushes the power button on the control center. Vessel in relatively the same area before and after the time gap. Gap was also sufficiently long (an amount of time similar to a sleep event).
         5. **Power Cut – Engine Off:** Vessel turns engine off and then power to the control center is disrupted. Assume vessel cut power to the control center in part to turn off EM system. Vessel in relatively the same area before and after the time gap. Gap was also sufficiently long (an amount of time similar to a sleep event).
         6. **Power Button Pressed – Assume Engine On:**
         Power button on the control center is pushed to turn system off. Assume the vessel did not turn engine off after pushing power button because vessel is in a different area before and after the time gap. Gap was also sufficiently long (comparable to sleep).
         7. **Power Cut – Assume Engine On:** Power to the control center is disrupted. Assume vessel cut power to the control center in part to turn off EM system. Assume the vessel did not turn off the engine after disrupting power to the control center because vessel is in a different area before and after the time gap. Gap was also sufficiently long (an amount of time similar to a sleep event).
         8. **Hard Drive Swap**: Vessel swaps their hard drive during a trip. Usually the vessel will run a Data Integrity Report (DIR) and the system is shutdown from there before the hard drive swap occurs. A vessel could run a DIR and shut down the system from there but not swap the hard drive (classified as a Time Gap). They also could remove the hard drive using a different method (ex: first pushing the power button on the control center/cutting power to the control center, or removing the hard drive while the system is running).
            i. To confirm that a time gap is due to a hard drive swap:
               1. Make a note of the times at the start and end of each VM file within the sensor dataset when merging together multiple datasets from one trip. Look for the corresponding times in EMI.
         9. **Time Gap**: All other time gaps. These gaps are not a result of expected behavior of the fisher or equipment as defined by the program requirements.

HAUL:

5) Each haul within each individual trip on each drive should be defined with a "**Haul**" annotation.
   a. If any haul begins after or ends before a "Time Gap":
      i. Under the "Accuracy" drop-down menu, select "First Point After Time Gap" for a haul beginning after the gap. Select "Last Point Before Time Gap" for a haul ending before the gap.
      ii. If video is missing at either end of the haul, select "Estimate"
   b. If there is **No Video** for a haul:
      i. Under the "Accuracy" drop-down menu, select "Estimate" for the haul start and select "Estimate" for the haul end.
      ii. Check the box for "**No Video for Event**"
         1. Fill out the "**No Video Reason**" section (some reasons may only be determined from an AMR technician):
            a. **Time Gap**: There is no sensor or video data and a haul isn't able to be created.
            b. **Hard Drive Full**: Sensor data will be present but video data will no longer be recorded. Specific event codes will be shown as the reason for video gaps for new systems. Event code 65: Disk is full. Event code 64: Disk is getting full. Current systems without this function can have time gaps investigated by AMR.
            c. **Installation or Software Error**: This reason will have to be investigated by AMR and filled-in later by reviewers.
            d. **No Video Data (Sensor Data Present)**: Sensor data is present without any video recording.
            e. **Unknown**
   c. Check the "**Video Gaps**" box if there were any gaps in the video during the haul.
      i. In the comment section, record how long the video gap(s) last
   d. Check the "**Time Gaps**" box if there was a gap in the data that was <u>not</u> a sleep event
      i. If this box is checked, it is most likely that the GPS Sensor, Rotation Sensor, and Hydraulic Sensor all also have gaps. Check these boxes as well.
   e. Check the "**GPS Gaps**" box if there was a gap in the GPS/Speed sensor data
   f. Check the "**Rotation Sensor Gaps**" box if there was a gap in the drum sensor data (only on vessels that have this sensor installed)
   g. Check the "**Hydraulic Sensor Gaps**" box if there was a gap in the pressure sensor data
   h. After the hauls have been annotated for a given drive, open the "**Annotation Tree Window**" under the "**Annotations**" tab
      i. For each trip, click the "**Autonumber Fishing Activity Annotations**" button to sequentially number the hauls in each trip.
         1. This ensures that each haul is ordered properly and can be matched up later during the data analysis.

VIDEO HAUL:

6) In order to annotate catch data, a "**Video Haul**" must be created and associated with each "Haul" annotation that has been selected to be reviewed. The Video Haul also marks the portion of video reviewed for catch annotation from the associated haul.
   a. Add a "**Video Haul**" to the associated "Haul"
   b. Record the reviewers upper case three part initials (ABC) under "**Reviewer Name**" if different from the auto-populated version

c. **Once catch annotation of the haul is complete**:
d. Record the **View Time** required to annotate the catch data from the haul
e. **Data Quality**: Data accurately reflects catch speciation and quantification throughout the haul.
   i. **High:** All catch able to be quantified with a high degree of confidence
   ii. **Medium:** Catch is able to be quantified, but estimates may not be as accurate as with High Data Quality due to image quality or crew behavior
   iii. **Low:** Catch quantification estimate confidence is low due to image quality or crew behavior
   iv. **Unusable:** Unable to quantify catch
f. **Data Quality Reason** (If anything other than High):
   i. **Crew Catch Handling – Not in Camera View**: Crew sorted/took catch out of view of the cameras
   ii. **Crew Catch Handling – In Camera View**: Crew sorted catch in view of the cameras, but blocked view in such a way that all catch could not be seen (back to camera, etc.)
   iii. **Image Quality**: This means "See Image Quality & Image Quality Reason"
   iv. **Discard not at control point:** Crew discarded catch at a point not specified on their VMP
g. **Image Quality:**
   i. **High:** Majority of video is clear of obscuring water spots, glare, or salt. Views cover the entirety of the fishing activity necessary to complete review.
   ii. **Medium:** Cameras may have some water spots, glare, or salt. Lighting quality might be poor due to night lighting.
   iii. **Low:** Video is obscured, camera angles do not encompass entirety of fishing activity necessary to complete review. Night lighting too bright or too dark.
   i. **Unusable:** Cameras obscured fully and completely for the duration of the haul. Obstructions prevent reviewer from quantifying catch.
h. **Image Quality Reason** (If anything other than High):
   i. **Blank/White Screen Recorded**
   ii. **Banding/Scrambling/False Color**
   iii. **Video completeness**
   iv. **Dirty Camera(s)**
   v. **Out of Focus**
   vi. **Poor Camera Angles**
   vii. **Glare**
   viii. **Night Lighting**
   ix. **Water Spots**
   x. **Condensation**
   xi. **Obstruction**
i. **Video Complete**: Yes/No
   i. **Yes:** There are no gaps in the video for all of the gear processing and catch handling
   ii. **No:** Video files missing from one or more cameras during gear processing and catch handling, when video should have been recording.
j. **Video Completeness Reason** (If **No**):
   i. **Video ends before catch handling (=sorting) ends**: If the video ends before all of the catch has been brought onboard
   ii. **Video ends before fish stowed (catch handling complete)**: If all of the catch has been viewed coming onboard and/or discarded from the net, but the video ends before retained catch is stowed (except for deck loads – these hauls are ended once crew is

finished on deck, and reviewer clicks through to the end of the trip to ensure no catch was discarded).

    1. If some of the catch has not been stowed before the next haul, and there are **no** video gaps before the next haul, select Video Completeness "Yes" and comment that some of the catch was not stowed before the next haul began.

        a. In this situation, end the Video Haul when the crew is finished sorting the catch

    iii. **Intermittent gaps in video coverage**: If there are gaps in the video and all of the catch coming onboard cannot be accounted for

    iv. **Video starts after haul start:** If the video began after gear began being brought onboard

    v. **No Data recorded on 1 or more cameras:** If one or more cameras is missing video for the entirety of a video haul, impacting ability to account for catch.

  k. **Catch Complete**: Yes/No

    i. Catch is complete if all catch could be annotated during gear processing, even if the fate may not be known. Record any additional **Comments** about the video haul if necessary

        a. Pollock: Codend observed being hauled and emptied onboard vessel

7) Annotating "**Water-Hauls**"

  a. Water hauls are fishing events that <u>resulted in no catch</u>.

  i. This is different than 'net cleaning', which is not an annotated event.

  b. Create a Video Haul and add a comment indicating there was no catch.

  c. If the net is set and the doors enter the water for more than two minutes but less than fifteen minutes check with the analyst to establish if fishing activity occurred.

Creating Point Annotations:

<u>Alaska Pollock</u>

HAUL AND VIDEO HAUL:

1) **Haul** begins when the doors go into the water and ends when the doors return to the vessel. A haul will appear in the sensor data as a drop in speed, with an increase in either hydraulic pressure or drum rotation or both.

  a. If the vessel is making a turn the doors may come back up for the turn and then go back down to resume fishing. Do not end the current haul. Record the two or more segments as a single haul.

  b. If, at the end of a haul, the vessel does not empty the codend and instead resets the net along with the contents of the codend for a subsequent haul, annotate two separate hauls with comments stating that the catch was not brought onboard, and is included with the next haul.

  c. If you suspect that an annotated haul may not match up with logbook records (as can happen with water hauls and other unusual hauling activity), leave a comment at the haul level.

2) **Video Haul** begins when the doors return to the vessel at the haul annotation end.

  a. Video haul ends when all of the catch has been removed from the net and stowed in the fish holds, and the hatches are closed. In the case that the hold is full, the video haul will end when the catch has been brought onboard completely and the crew has finished sorting everything (they may cover the catch with a net or tarp).

CATCH:

Discards other than operational and sharks/fish larger than 6 ft are not permitted for the Pollock EFP project, but could occur anyway. All Pollock EFP vessels will have <u>ALL</u> fish that are

discarded/utilized on-board annotated (invertebrates such as jellyfish do not have to be annotated, as estimating weights for these is difficult for this fishery).

1) Each vessel has its own codend(s) with a specific design, total capacity, number of straps, and number of pounds that can fill each strap. This capacity may be used to estimate discards. The total capacity of each net used for each haul will be provided along with the landing dates and fish ticket numbers for each vessel.

2) **Discards**:
   a. Record **ALL** 'Fish' discard events
      Note: Fish shoveled into an empty codend and then placed into the water will be retained with the next haul. Do not record any discard weight for these fish for the current haul, but comment on the situation.
   b. Discard Types:
      i. **Selective Discards**: Fish discards that have been deliberately separated and discarded from the rest of the catch. Usually this will be Salmon Sharks and Sleeper Sharks for the Pollock fishery.

         1. Record an **Individual Catch Item** annotation
         2. Enter the **Species** of discard to the lowest identifiable taxonomic level (if possible)
         3. Record a **Weight** estimate in pounds
         4. Record a Piece **Count** if possible
         5. Record the **Fate** of catch

         Options for Fate:
            a. **Unintentional Discard**: Catch that was not deliberately removed from the gear by crew, but fell out/off of the fishing gear before entering the vessel.
            b. **Unknown**: Catch taken out of view of the camera or unsorted catch on deck when camera fails.
            c. **Discarded – General**: Catch released.
            d. **Discarded – Damaged**: Catch with scavenger predation or general damage, deeming catch unmarketable, which is released.
            e. **Retained**: Catch kept after being sorted[1], and any fish onboard after all sorting[1] is complete.

               [1]Sorting is the process in which the catcher actively decides which catch is kept or released.

            f. **Throwback**: Catch previously identified as retained and has now been discarded or utilized on-board.
            g. **Utilized On-board**: Catch is consumed/intended to be consumed by crew, or used as/intended to be used as bait. It might be filleted onboard. This catch may not show up on a fish ticket with retained catch. Fish with this fate are treated as discards in the database.
      ii. **Non-Selective Discards**: Discards that have <u>not</u> been deliberately sorted from the rest of the catch. After review, and during data analysis, these will be assumed to have the same species composition as the total landed catch
         1. Record an **Estimated Weight**
         2. Record the **Fate**
            a. **Discarded – General**: Catch has been shoveled off deck, deliberately discarded from codend, or any other situation where mixed catch was intentionally discarded.

Commented [CD1]: We are able to enter lengths for sharks, but I haven't included that in these protocols. We will wait for further instruction on if we should enter lengths for sharks, and how to do that.

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       b. **Discarded – Unintentional**: Catch has bled out of bag or net had a blow-out panel, or any other situation where mixed catch was unavoidably discarded.

3. Make educated visual estimates of discarded weight based on known weight-per-strap information or visual volumetric estimates based on previously obtained vessel or container dimensions. These are inherently subjective estimates. Use the below instructions to help estimate discarded weight.

iii. Situational Categories:

  a. **Non- Selective, Discard – General**:

    i. Catch is on deck:

      1. Visually estimate how many round baskets or sorting totes the fish would fill.

      2. One round basket filled with pollock weighs approximately 80 lbs, and one tote weighs approximately 150 lbs.

      3. Multiply the estimated number of baskets by 80 or 150 (depending on using basket or tote estimate) to get an estimated weight of discard.

      4. Example: Pile of fish looks like it might fill 7 round baskets. 7 * 80 = **560 lbs** of non-selective discard

    ii. Contents from net are emptied into the water:

      1. Estimate how many straps the fish discarded from the codend would fill

      2. Multiply the number of straps by the number of pounds per strap for that codend (using the codend capacity located in the codend capacity spreadsheet, based on the capacity recorded in the logbook)

      3. Example: Net bled out fish that filled 3 straps

        a. 3 straps * 3,500 lbs/strap = **10,500 lbs** of non-selective discard

    iii. Discarded straps of catch:

      1. Annotate the weight for this catch as a **Non-Selective Discard**

      2. Use codend capacity/strap weights to determine how many straps are being discarded at each percentage (or estimate a weight if this strategy does not fit the situation) and determine the Discarded weight

  b. **Selective Discard, Discard General:**

    i. Fish trapped in debris or derelict pots:

      1. If fixed gear pots or debris are brought up in the Pollock catch and the contents are discarded, annotate as selective discards.

        a. The fish included in the pot should be identified down to species level if possible

        b. A visual estimation of the weight of each species, or species group

        c. Include a comment in the video haul annotation with the number of pots or debris type.

  c. **Non- Selective, Discard – Unintentional**:

    i. Net bleeds/Blowout Panel – Catch in the water with net reference:

      1. Make an estimate of fish in the net prior to the bleed based on number of full straps, how full the straps are and how many pounds per strap that codend would represent.

      2. After the bleed, estimate catch following the above steps.

      3. Record the difference between the estimated weight of fish before and after the bleed

      4. Example:

        a. Before bleed: 19 straps * 100% full * 3000 lbs/strap = 57,000lbs

        b. After bleed: 17 straps * 75% full * 3000 lbs/strap = 38,250 lbs

      c. **Discarded amount**: 57,000 lbs – 38,250 lbs = **18,750 lbs** of non-selective discard
- ii. Net Bleeds/Blowout Panel – Catch in the water with <u>no</u> net reference:
    1. <u>This is a very subjective estimate</u>
    2. Estimate the number of round baskets or sorting totes the fish on the surface would fill.
    3. Multiply total number of baskets by 80 lbs/round basket or 150 lbs/tote
- iii. Entire net spill:
    1. If codend is completely full, you may assume the codend is slightly overfull causing the codend failure
        - a. Take the known codend capacity of the vessel and add 10%
        - b. Example: Vessel has a codend capacity of 160K lbs, codend is spilled as it is pulled up to the vessel, record the discard as 176K lbs.
    2. If net is not full, count the straps and estimate fullness of the straps. Multiply those numbers by the weight-per-strap based on fullness for a discard estimate.

Marine Mammal Incidental Take

1. If a marine mammal is brought up in fishing gear:
    a. Annotate the mammal as either discarded or retained
        i. Comment on the condition of the animal (alive, dead, injured, etc.)
        ii. Enter a piece count

Tracking and Adjustments

Periodically each reviewer may have to adjust an annotation upon request from supervisor or data analyst.
1) Respond to the request
    a. If a change was required
        i. Save the new annotation file with a new name by adding the version number to the end of the file name. For instance, 20_PSMFC03_WWH would become 20_PSMFC03_WWHv2
        ii. Move the old annotation file into the Previous Version Folder in the Annotations folder while keeping the new version in the Current Versions folder.
        iii. Confirm with the party requesting the adjustment that the adjustment has been made.
    b. If a change is not required
        i. Answer the question or concern
        ii. Describe why a change was not needed

Troubleshooting

If EMI is requesting a vessel name before opening:
1) Select the appropriate vessel information in the Raw_Data folder of the server
2) Select the VesselSetupFile folder and copy the VesselSetup Text Document
3) Paste this document into the zipped folder within the SensorData file

If EMI shows an error message when previously encrypted sensor data is being loaded:

1) Navigate into the SensorData folder under the appropriate vessel in the Raw_Data folder
2) Create a new zipped file folder called SensorDataCorrected
   a. Copy and paste all of the items from the original SensorData folder into this folder so if you make a mistake, the original data will be in the other folder
3) See if there are multiple Text Document files that are have a "VM" in the title
   (Ex: 330744VM130725_185046)
4) Copy and paste the contents of these files (in the original order they are listed) into the original VM Text Document (the one with the shortest file name; ex: 330744VM)
5) Delete the other VM Text Documents

EMI Extras

In order to take a clip of video and data from an entire data set in EMI:
1) Right click in the timeline where you want to begin the video and sensor data clip and select "Clip dataset around point."
2) In the "Clip Dataset" box that appears, a start and end point that spans 10 minutes has automatically been added. Adjust this to where you would like your clip to begin and end.
   a. In this box you may also change where you would like to send your clipped data set, but it is automatically set to be sent to your desktop.
3) Hit the "start" button.
4) After the data is finished processing, select "OK" and your files will be saved in your specified location.
   a. The video files will be MP4 files, playable with windows media player and EMI, and the sensor data will be zipped and readable with EMI.

Place Marker Annotation:
1) Used by reviewers to mark where they left off during video haul review or mark events of interest/events that need to be re-visited (reviewer can make a comment in the place marker as well). These annotations do not get exported into the final data, but only appear in the data file in EMI.

General Guidelines for processing a Pollock EFP hard drive

- ✓ Review team receives drive from Geana Tyler, who keeps track of hard drive arrivals/returns
- ✓ Drives come labeled with vessel name, install date, and removal date
- ✓ The hard drive will be named, YY_VESSELNAME##, numbered in order of arrival
- ✓ The post marked date, and arrival date are hand written on the drive label and recorded in a tracking spreadsheet
- ✓ On the server, under the year of fishing activity, a new folder will be created for the raw data
- ✓ This file is also named YY_VESSELNAME##
- ✓ The drive is added to the collection of drives ready to be reviewed or assigned
- ✓ The contents of the hard drive are copied over without encryption to the folder created for it on the server

- ✓ Add initials to Data Tracking spreadsheet to let other reviewers know you are working on the drive
- ✓ Open EMI review software using the most up-to-date configuration appropriate for that vessel, ex: PSMFC_AK_Trawl (Revision 15)
- ✓ Sensor annotate the data line and trips
- ✓ Complete the fields in each window for the data line and each trip
- ✓ Add fish ticket # to trip annotations from the Fishticket spreadsheet
- ✓ Sensor annotate hauls using the video
- ✓ Use the Annotation Tree window to "Autonumber Fishing Activity Annotations" (black button at the end of each trip line). This needs to be done for each individual trip.
- ✓ Add preliminary drive information to PSMFC_Data_Tracking
  - o Project, Provider, Vessel Name, Drive Name, First Record Date, Last Record Date, Received Date, Date Stored on Server, Storage Location hyperlink, Gear Type, 'Yes' for Review, # of Trips, # of Hauls, # hauls with video, # unread Hauls with video, # of hauls for review (all of them for 100% review rate), Reviewer Initials, Size of Dataset (GB), EMI configuration used, and time (mins) for sensor annotating
- ✓ Check the most recent Vessel Monitoring plan and take note of the discard control points and make sure you can see what is described for each camera view. VMPs are in the Alaska Pollock VMP folder appropriate for each year
- ✓ Once back in the EMI file, Annotate Time Gaps, and categorize using the AMR timegap document
- ✓ Start review at the first haul by adding a video haul to the appropriate time (end of haul for trawl)
- ✓ Review all video hauls using the protocols specific to that gear type
- ✓ Use the Annotation List Window to query the annotations you've made, and QA/QC the review data
- ✓ Double check fish ticket number, trip names, and your catch annotations
  - o Among other queries/filters, you can filter by fate or species and look for mismatches
- ✓ Once you are satisfied with your data, export the data as an XML to the XML_Export folder.
  - o Name file YY_VESSELNAME## (no initials)
- ✓ Save completed EMI file to "current versions" folder
  - o Save name as YY_VESSELNAME##_RTG (initials)
- ✓ Open the Drive report form
- ✓ Before completing any field, hit "Save As" to create a new file, save it to the Drive_Reporting folder in the Pollock Drive Reports –Reviewer folder
  - o Save name as YY_VESSELNAME##_RTG (initials)
- ✓ Fill in the correct header information
- ✓ Complete the trip list with landing dates
- ✓ Complete the report using the drop down boxes, add comments that someone outside the office could understand
- ✓ Return to the Pollock Data Tracking Spreadsheet and add "Yes" for review complete. Add details necessary to the Known Problems column.

- ✓ Return to the PSFMC_DataTracking spreadsheet and change the unread haul numbers, add Yes to Video reviewed column, completion date, relevant notes, and time to review (hours) [add video haul review minutes together and divide by 60 for total review hours]
- ✓ Complete vessel feedback form for AMR if necessary, camera shifts, sensor malfunctions, etc.
  - o Save file name as YY_VESSELNAME##_RTG (initials)
- ✓ Email a PDF of the feedback form to EMsupport@psmfc.org and EMhelpdesk@archipelago.ca
- ✓ Upload sensor data to the file share program, FileZilla, if there is an issue with sensor data. Use YY_VESSELNAME## as the folder name. Put this sensor file in "Sensor Data" folder
- ✓ Check to make sure all files were successfully copied over to the appropriate server by comparing file size and file count to the original drive
- ✓ Add drive to the box of other reviewed drives to have it wiped of all data
- ✓ Drive is returned to Geana who recirculates it

IMAGE INDEX

Observer basket dimensions

Outside: 23.6" x 15.8" x 8.5". Inside: 19.3" x 13.4" x 8.5" (Vented long side-solid short)

Volume Capacity = 1.3 ft^3 or **0.04m³**

Round Fish basket dimensions

Top diameter = 19", bottom diameter = 14.5", height = 17". Volume Capacity = 1.49 ft^3 or **0.0422m³**

Standard Fish tote dimensions

Outside: 0.8m x 0.46m x 0.3m. Inside: 0.65m x 0.42m x 0.29m. Volume Capacity = **0.079m³**

32 Gal Container

	U.S.	Metric
Diameter:	22 in	55.9 cm
Height:	27 1/4 in	69.2 cm
Volume Capacity [Nom]:	32 gal	121.1 L

44 Gal Container

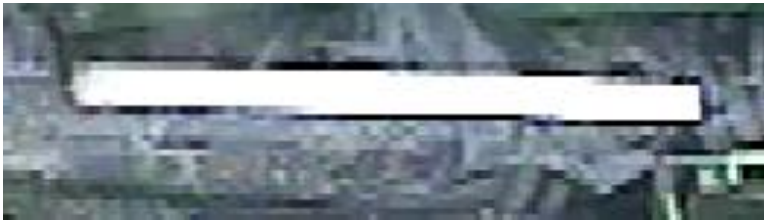|	U.S.	Metric
Diameter:	24 in	61.0 cm
Height:	31 1/2 in	80.0 cm
Volume Capacity [Nom]:	44 gal	166.6 L

Basket Fullness Guides
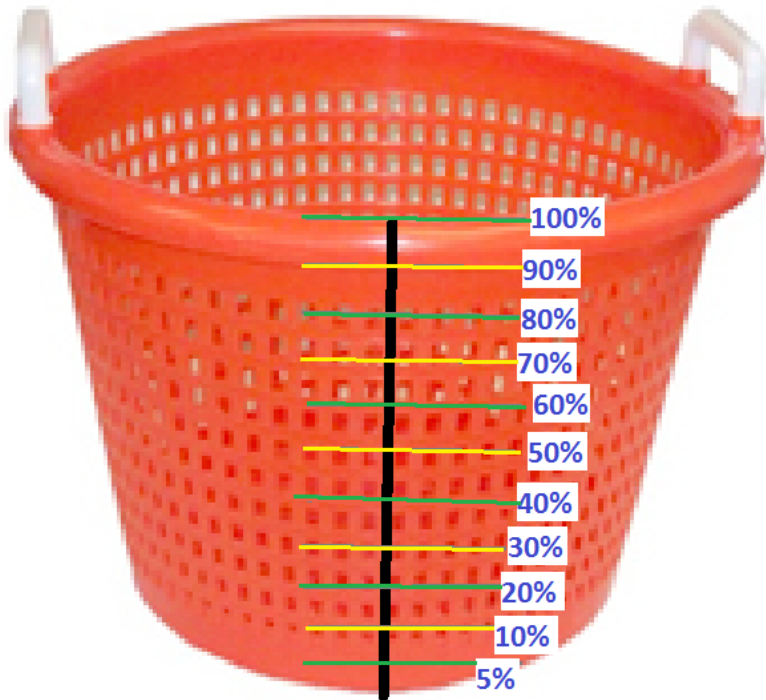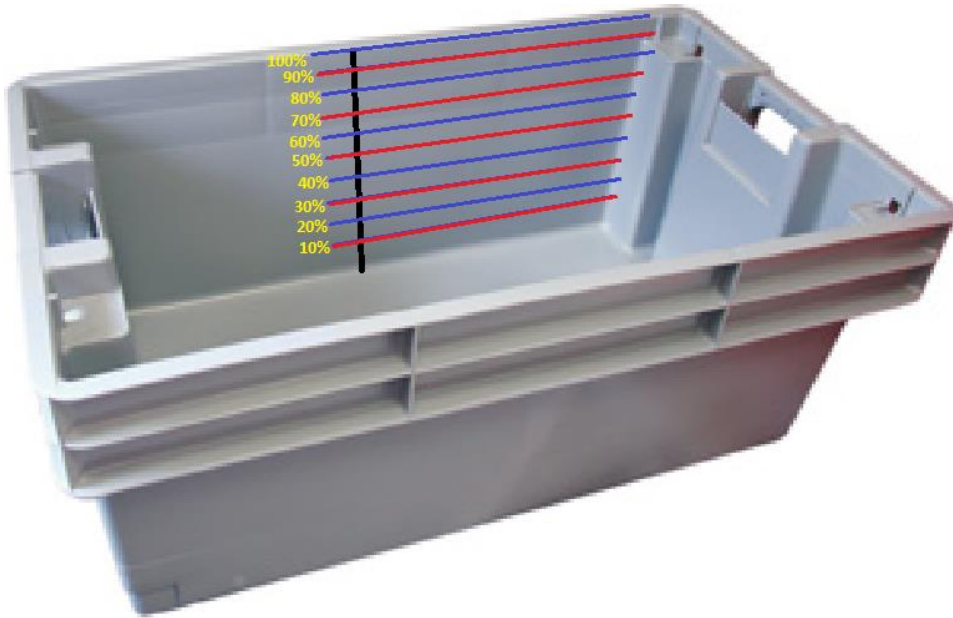
WCGOP Length board can be folded out to 3 different lengths:

47 cm

93 cm

Total 136 cm

Start

0-10cm	██
10-20cm	██
20-30cm	
30-40cm	██
40-50cm	██
50-60cm	██
60-70cm	
70-80cm	██
80-90cm	██
90-100cm	██
100-110cm	
110-120cm	██

End