

Estimated PSMFC EM Review Costs by Fleet at Variable Rates of Review – 1/19/2023

PSMFC estimated the costs of doing EM review per sea day by fleet for 2023, both at the current rate of 100% review and at reduced review rates of 25% or 10% (Table 1). Below is a description of the method for calculating costs, the inputs used, and assumptions.

- **Overview:** We used the actual total budget based on staff time and then partitioned the costs. The costs were split into four categories, and for each category the cost was allocated among fleets. Staff time is based on current staffing for 2023. Other inputs such as the number of sea days per fleet, review minutes, etc. were based on 2020-2021 (most recent years with review completed).
- **Fleets:** Costs were estimated separately for bottom trawl, pot and midwater trawl (shoreside hake, midwater rockfish target, and MSCV). Midwater trawl is combined because the review protocols and times are comparable.
- **Cost Estimates**
 - Variable review costs
 - All time spent by reviewers watching and annotating the video.
 - The total variable review cost was 50% of all review staff time costs.
 - Reviewers record the minutes to review each haul. These values were used to determine the ratio of time spent watching video for each fleet. Total variable review costs were apportioned among the fleets using this ratio, then for each fleet it was divided by the number of sea days reviewed for that fleet.
 - Fixed review costs
 - All other time for review staff including tracking, reporting (e.g. drive reports), correspondence with skippers, updates to protocols, staff meetings, etc.).
 - The total fixed review cost was 50% of all review staff time/budget.
 - Fixed review costs were divided by sea days (all fleets charged equally per sea day).
 - Admin costs
 - Costs for non-review staff including data entry of logbooks, database maintenance, data QAQC, mailing hard drives, and administrative work.
 - The total admin costs were 100% of all non-review staff time/budget.
 - Admin costs were divided by sea days (all fleets charged equally per sea day).
 - Storage cost
 - Cost to store the video files per sea day of fishing. Costs are slightly different among fisheries based on the typical number of cameras.
- **Reduced Review Rates**
 - To estimate costs at a reduced review rate, the variable review cost was adjusted while other costs remained the same.
 - At reduced review rates, the actual review rate is somewhat higher than the stated rate. For example, if there is a trip with 3 hauls, 1 haul would be reviewed for either the 25% or 10% rate. Using past years data, we determined the percent of hauls that would have actually been reviewed and adjusted the variable review costs based on these values.
 - Reduced review costs assume no penalties of additional review (no added review for not “passing” a logbook comparison or meeting other program rules).

Table 1. Estimated PSMFC EM Review Costs by Fleet at variable rates of review

	Per Sea Day 100% Review			Per Sea Day 25% Review		Per Sea Day 10% Review	
	Midwater Trawl	Pot	Bottom Trawl	Pot	Bottom Trawl	Pot	Bottom Trawl
Review Time Variable Cost (video review)	\$16.49	\$184.20	\$245.85	\$52.23	\$77.51	\$24.55	\$47.93
Review Time Fixed Costs*	\$49.69	\$49.69	\$49.69	\$49.69	\$49.69	\$49.69	\$49.69
Admin Cost**	\$43.60	\$43.60	\$43.60	\$43.60	\$43.60	\$43.60	\$43.60
Archive Storage Cost	\$0.36	\$0.25	\$0.35	\$0.25	\$0.35	\$0.25	\$0.35
TOTAL PER SEA DAY	\$110.14	\$277.74	\$339.49	\$145.78	\$171.15	\$118.09	\$141.57
TOTAL FLEET COST	\$341,201	\$72,490	\$117,294	\$38,047	\$59,133	\$30,820	\$48,912
TOTAL PROGRAM COST		\$530,984		\$438,382 (17% savings)		\$420,934 (21% savings)	

*Other review work includes tracking, reporting, communication with vessels, etc.

**Program management, logbook data entry, QAQC, database maintenance, mailing hard drives, etc.