ATLANTIC HERRING ALTERNATIVE ECONOMIC IMPACTS ON HERRING FISHING BUSINESSES

Impact Analysis Methods

Four types of industry-funded monitoring for the herring fishery are being considered: Northeast Fisheries Observer Program (NEFOP) level observer, at-sea monitor (ASM), Electronic Monitoring (EM), and portside sampling (PS) coverage. NEFOP-level and at-sea monitoring coverage would function independently, but EM and portside are intended to be used together.

MONITORING COSTS TO INDUSTRY

Types of Monitoring	NEFOP-Level Observer	At-Sea Monitor	Electronic Monitoring	Portside Sampling
Industry Cost Responsibility	$818 per seaday	$710 per seaday	Year 1: $15,000 one-time set up cost then $325 per seaday Year 2: $325 per seaday	$0.0023 per lb ($5.12 per mt)

Trips that occurred in 2014 were used to estimate the likely future impacts of the herring alternatives. This is the most recent year for which data is available and 2014 activity should represent what is likely to occur in future years in terms of the vessels participating in the fishery, the condition of the stock, the regulatory environment, and fishing methods. Each alternative has different criteria for defining which types of trips would be monitored (based on permit type, gear used, etc.). Trips from 2014 that met these criteria were evaluated in terms of how the monitoring costs impacted annual returns to owner (see below for description of how return-to-owner (RTO) was calculated). If an alternative specified 100% coverage, then the monitoring costs that would have been paid for all trips occurring in 2014 were calculated and assessed in terms of impacts to RTO. For alternatives that have options with less than 100% coverage, trips from the pool of 2014 trips were randomly selected until the coverage target was met. This was repeated 1,000 times for each trip selection simulation.

Mean annual ASM/NEFOP costs per vessel are then calculated from the simulated trip selections.

Vessels were assigned a major gear type based on the gear that earned the greatest revenue (from all species landed) among the trips selected for evaluation (according to the criteria in the alternative). It is not necessarily the major gear for the year for a particular vessel.

In the tables, any information that pertains to amounts of revenue from various species and numbers of days at sea and trips are for the trips that met the criteria under each of the alternatives only, not for the year.

Return-to-Owner

A previous analysis of economic impacts of herring and mackerel coverage target alternatives was based on trip cost data collected by the NEFOP and showed the economic impact of the alternatives on vessel net revenues (gross revenues less trip costs). Because NEFOP only collects a limited amount of cost data, industry participants expressed concern that net revenue estimates used in the previous economic analysis underestimated vessel costs. In response, Jason Didden, staff of the Mid-Atlantic Council, offered to survey herring and mackerel vessels to collect more detailed cost information.

The survey requested information from vessel owners on total trip costs in 2014. The cost survey collected information on variable trip costs, the cost of repairs/maintenance/upgrades/haulout, fixed costs, and payments to crew. These data were used to update the impact analyses. If the vessel owner completed a survey then that vessel's actual costs were used in the analysis. Otherwise, respondent data were used to project costs on other vessels that did not provide a survey response. To do this, responses from the surveys were categorized by the annual primary species caught based on value. Two categories were used: herring/mackerel vessels and squid vessels. For each of these vessel types, costs were assigned into one of four categories: variable costs, crew share, repair/maint/upgrades/haulout, and fixed costs. Average percentages of annual gross revenue by cost category and vessel type were used to estimate costs for vessels that did not have survey data. See table below for cost category descriptions and average percentages of gross revenue.

Surveys were sent to approximately 18 vessel owners (representing about 26 vessels) in the herring and/or mackerel fisheries. Surveys were sent in May 2015 and information was submitted for 16 of the 26 vessels.

Cost category	Description	Average percent of gross revenue	
		Herring/ mackerel vessels	Squid vessels
Variable costs	Annual fuel, oil, food, water, ice, carrier vessel, communication, fishing supplies, crew supplies, and catch handling costs	25%	35%
Crew share	Total annual payments to crew	28%	26%
Repair/ maintenance/ upgrades/ haulout (RMUH)	Annual cost of repairs to engines, deck equipment, machinery, hull, fishing gear, electronics, processing equipment, refrigeration, and safety equipment. Includes haulout costs. Because these costs vary considerably from year to year and upgrade costs were combined with repair/maintenance costs, half of these costs were amortized over 7 years.	13%	11%
Fixed costs	Annual mooring/dockage, permits/licenses, insurance, quota/DAS lease, crew benefits, vessel monitoring, workshop/storage, office, vehicle, travel, association, professional, interest, taxes, and non-crew labor costs. Note: principal payments on business loans are not included in fixed costs.	19%	21%
Return to Owner (RTO)	Gross revenue less variable, crew share, RMUH, and fixed costs	15%	7%

Major Findings

Across the vessel types examined, the paired MWT vessels have the highest monitoring costs as a percentage of RTO. This is due to the fact that these vessels have, on average, more sea days that would have monitoring costs than the other vessel types.

There are differences among vessel types in terms of the sources of revenue that would be used to pay for monitoring costs. For example, for SMBT vessels, half of their revenue comes from herring and the other half from other species. What this means is that for monitoring that is required for the herring fishery, other non-herring sources of revenue must be used to cover the herring related costs. A metric for evaluating these differences is monitoring cost as a percent of herring revenue. For SMBT monitoring costs as a percent of herring revenue are higher than for other vessel types. Another metric is ASM costs as a percent of the RTO from herring fishing activity (that is, after apportioning RTO across the various species that make up total revenue for a vessel). For vessel types with lower percentages of revenue from herring, the impact becomes more significant. For example, under alternative 2.2 ASM as a percent of RTO is 10.5% for SMBT vessels whereas ASM as a percent of herring RTO is 20%.

Exempting trips less than 25 mt reduces the monitoring cost as a percentage of RTO by half for purse seine vessels. While the percentage reduction is not as high for other vessel types, nominal costs are reduced by as much as 50% from having this exemption.

Using EM and PS monitoring in place of ASM on MWT vessels results in an 8% cost saving in year 1 and a 22% cost saving in year 2 for paired MWT vessels. For single MWT vessels, there is a 27% increase in monitoring costs in year 1 and a 13% increase in year 2. This is a result of monitoring two additional single MWT vessels (alternative 2.2 is limited to permit categories A & B whereas alternative 2.3 is limited to permit categories A-E).

Limiting NEFOP coverage to vessels that fish in groundfish closed areas reduces total monitoring costs from $1.3 million (alternative 2.1) to $74,827 (alternative 2.5) – a 94% reduction.

Summary Tables – Vessel Level

HERRING ALTERNATIVE 2.1 – ANNUAL AVERAGE PER VESSEL

Vessel Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT	Purse Seine ≥ 1 LB	Purse Seine > 25 MT	SMBT ≥ 1 LB	SMBT > 25 MT
Total Revenue	$1.3M		$1.0M		$1.4M		$1.9M	$2.1M
Return to Owner	$163,080		$141,169		$241,180		$144,125	$163,329
Cost of NEFOP	$84,150	$67,626	$23,077	$15,756	$45,700	$23,759	$17,380	$15,975
NEFOP as % of RTO	51.6%	41.5%	16.3%	11.2%	18.9%	9.9%	12.1%	9.8%
Average Sea Days	103	83	28	19	56	29	21	20
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVES 2.2 – ANNUAL AVERAGE PER PAIRED MWT

Paired MWT	Total Revenue = $1.3M Return to Owner = $163,080							
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$73,219	$58,841	$54,936	$44,198	$36,875	$29,489	$18,578	$14,949
ASM as % of RTO	44.9%	36.1%	33.7%	27.1%	22.6%	18.1%	11.4%	9.2%
Average Sea Days	103	83	77	62	52	42	26	21
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVES 2.2 – ANNUAL AVERAGE PER SINGLE MWT

Single MWT	Total Revenue = $1.0M Return to Owner = $141,169							
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$20,079	$13,710	$15,021	$10,298	$10,145	$6,999	$5,498	$3,994
ASM as % of RTO	14.2%	9.7%	10.6%	7.3%	7.2%	5.0%	3.9%	2.8%
Average Sea Days	28	19	21	15	14	10	8	6
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVES 2.2 – ANNUAL AVERAGE PER PURSE SEINE

Purse Seine	Total Revenue = $1.4M Return to Owner = $241,180							
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$39,764	$20,673	$29,898	$15,571	$19,846	$10,464	$10,041	$5,370
ASM as % of RTO	16.5%	8.6%	12.4%	6.5%	8.2%	4.3%	4.2%	2.2%
Average Sea Days	56	29	42	22	28	15	14	8
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVES 2.2 – ANNUAL AVERAGE PER SMBT

SMBT	Total Revenue (Average) = $1.9M Return to Owner (Average) = $144,125				Total Revenue (25 MT Threshold) = $2.1M Return to Owner (25 MT Threshold) = $163,329			
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$15,122	$13,900	$11,709	$10,474	$8,483	$7,247	$5,642	$4,560
ASM as % of RTO	10.5%	8.5%	8.1%	6.4%	5.9%	4.4%	3.9%	2.8%
Average Sea Days	21	20	16	15	12	10	8	6
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVE 2.3 – ANNUAL AVERAGE PER SINGLE AND PAIRED MWT

Vessel Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT
Total Revenue	$1.3M		$912,105	$990,082
Return to Owner	$163,080		$134,205	$149,714
Cost of EM Year 1	$48,516	$41,934	$22,300	$20,425
Cost of EM Year 2	$33,516	$26,934	$7,300	$5,425
Cost of Portside	$23,684	$22,205	$9,471	$9,943
EM & Portside as % of RTO – Year 1	43.3%	39.3%	23.7%	20.3%
EM & Portside as % of RTO – Year 2	35.1%	30.1%	12.5%	10.3%
Average Sea Days	103	83	23	17
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring				

HERRING ALTERNATIVE 2.3 – ANNUAL AVERAGE PER PURSE SEINE

Purse Seine	Total Revenue = $1.4M Return to Owner = $241,180							
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$39,527	$20,436	$29,688	$15,398	$19,846	$10,354	$10,019	$5,332
ASM as % of RTO	16.4%	8.5%	12.3%	6.4%	8.2%	4.3%	4.2%	2.2%
Average Sea Days	56	29	42	22	28	15	14	8
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVE 2.3 – ANNUAL AVERAGE PER SMBT

SMBT	Total Revenue (Average) = $1.9M Return to Owner (Average) = $144,125				Total Revenue (25 MT Threshold) = $2.1M Return to Owner (25 MT Threshold) = $163,329			
Vessel Level	100% ≥ 1 LB	100% > 25 MT	75% ≥ 1 LB	75% > 25 MT	50% ≥ 1 LB	50% > 25 MT	25% ≥ 1 LB	25% > 25 MT
Cost of ASM	$14,057	$12,421	$11,022	$9,485	$8,068	$6,660	$5,421	$4,245
ASM as % of RTO	9.8%	7.6%	7.6%	5.8%	5.6%	4.1%	3.8%	2.6%
Average Sea Days	21	20	16	13	11	9	8	6
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVE 2.4 – ANNUAL AVERAGE PER SINGLE AND PAIRED MWT

Vessel Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT
Total Revenue	$1.3M		$912,105	$990,082
Return to Owner	$163,080		$134,205	$149,714
Cost of EM Year 1	$48,516	$41,934	$22,300	$20,425
Cost of EM Year 2	$33,516	$26,934	$7,300	$5,425
Cost of Portside	$23,684	$22,205	$9,471	$9,943
EM & Portside as % of RTO – Year 1	43.3%	39.3%	23.7%	20.3%
EM & Portside as % of RTO – Year 2	35.1%	30.1%	12.5%	10.3%
Average Sea Days	103	83	22	17
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring				

HERRING ALTERNATIVE 2.5 – ANNUAL AVERAGE PER SINGLE AND PAIRED MWT

Single and Paired MWT	Total Revenue = $1.8M Return to Owner = $266,094	
Vessel Level	Single and Paired MWT ≥ 1 LB	Single and Paired MWT > 25 MT
Cost of NEFOP	$9,353	$6,293
NEFOP as % of RTO	3.5%	2.4%
Average Sea Days	11	8
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring		

HERRING ALTERNATIVE 2.6 – SEE END OF DETAILED TABLES

Summary Tables – Fleet Level

HERRING ALTERNATIVE 2.1 AND 2.2 – ANNUAL FLEET LEVEL SUMMARY

Fleet Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT	Purse Seine ≥ 1 LB	Purse Seine > 25 MT	SMBT ≥ 1 LB	SMBT > 25 MT
Number of Vessels	8	8	6	6	7	7	9	6
Days at Sea	825	663	170	116	392	204	192	117
Total Revenue	$10.6M	$9.8M	$4.5M	$4.2M	$11.0M	$10.3M	$2.6M	$1.8M
Total NEFOP Cost (2.1)	$673,200	$541,008	$138,463	$94,538	$319,902	$166,313	$156,420	$95,852
Total ASM Cost (2.2)	$585,750	$470,730	$120,477	$82,257	$278,346	$144,709	$136,100	$83,400
% Revenue Herring	89%	93%	86%		100%		58%	78%
% Revenue Mackerel	11%	7%	13%		-		3%	2%
% Revenue Squid	-		-		-		20%	10%
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALTERNATIVE 2.3 – ANNUAL FLEET LEVEL SUMMARY OF 100% COVERAGE (EITHER ASM OR EM/PORTSIDE)

Fleet Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT	Purse Seine ≥ 1 LB	Purse Seine > 25 MT	SMBT ≥ 1 LB	SMBT > 25 MT
Number of Vessels	8	8	8	7	7	7	9	6
Days at Sea	825	663	183	117	392	204	192	117
Total Revenue	$10.6M	$9.8M	$4.5M	$4.2M	$11.0M	$10.3M	$2.6M	$1.8M
Total Monitoring Costs Year 1	$577,595	$513,117	$254,165	$212,580	$276,692	$143,055	$126,515	$74,525
Total Monitoring Costs Year 2	$457,595	$393,117	$134,165	$107,580	$276,692	$143,055	$126,515	$74,525
% Revenue Herring	89%	93%	86%	86%	100%	100%	57%	72%
% Revenue Mackerel	11%	7%	13%	14%	-		4%	2%
% Revenue Squid	-		-		-		20%	10%
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring								

HERRING ALT 2.4 – ANNUAL FLEET LEVEL SUMMARY

Fleet Level	Paired MWT ≥ 1 LB	Paired MWT > 25 MT	Single MWT ≥ 1 LB	Single MWT > 25 MT
Number of Vessels	8	8	8	7
Days at Sea	825	663	180	117
Total Revenue	$10.5M	$9.8M	$4.5M	$4.2M
Total Monitoring Costs Year 1	$577,595	$513,117	$254,165	$212,580
Total Monitoring Costs Year 2	$457,595	$393,117	$134,165	$107,580
% Revenue Herring	89%	93%	86%	86%
% Revenue Mackerel	11%	7%	13%	14%
% Revenue Squid	-	-	-	-
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring				

HERRING ALTERNATIVE 2.5 – ANNUAL FLEET LEVEL SUMMARY

Fleet Level	Single and Paired MWT ≥ 1 LB	Single and Paired MWT > 25 MT
Number of Vessels	8	8
Days at Sea	92	62
Total Revenue	$1.4M	$1.3M
Total NEFOP Cost	$74,827	$50,347
% Revenue Herring	99.9%	100%
% Revenue Mackerel	-	-
% Revenue Squid	-	-
% Other Species	0.1%	0%
Data shown by trips harvesting ≥ 1 lb of herring and > 25 mt of herring		

HERRING ALTERNATIVE 2.6 – SEE END OF DETAILED TABLES

Detailed Tables

Herring Alternative 2.1

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$1,026,390	$1,179,521	$1,875,233	$1,505,034
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$284,996	$267,061	$594,112	$412,374
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$292,093	$332,733	$519,728	$451,846
Annual Repair/Maint/Upgrade/Haulout	$177,888	$98,231	$182,172	$119,312	$120,240	$101,172	$149,714	$94,073
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$187,892	$200,926	$467,553	$476,899
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$144,125	$113,903
Annual Cost of NEFOP	$84,150	$37,945	$45,700	$28,075	$23,077	$13,108	$17,380	$14,134
NEFOP as pct of RTO	51.6%		18.9%		16.3%		12.1%	
post-NEFOP RTO	$78,930	$77,928	$195,480	$159,212	$118,091	$352,542	$126,745	$110,764
Percent of Revenue from Herring	91.2%	9.5%	100.0%	0.0%	81.9%	17.0%	52.4%	42.0%
Percent of Revenue from Mackerel	13.9%	8.2%			19.4%	17.0%	2.6%	4.1%
Percent of Revenue from Squids							44.3%	39.7%
Percent of Revenue from Other Species	0.1%	0.1%			7.7%	17.0%	21.5%	17.9%
ASM as pct of herring RTO	56.6%		18.9%		20.0%		23.0%	
Average Number of Days at Sea	103	47	56	34	28	16	21	17
Average Number of Trips	34	16	64	37	22	20	11	16

Herring Alternative 2.1

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	9
Total Days at Sea	825	392	170	192
Total Number of Trips	275	451	129	103
Total Herring Revenue	$9,409,389	$11,042,232	$3,842,873	$1,483,242
Total Mackerel Revenue	$1,155,588	$225	$570,246	$97,806
Total Squid Revenue				$529,723
Total Other Species Revenue	$5,906		$50,399	$485,180
Total Revenue	$10,570,883	$11,042,457	$4,463,518	$2,595,951
Total NEFOP Cost	$673,200	$319,902	$138,463	$156,420
NEFOP as pct of Total Revenue	6.4%	2.9%	3.1%	6.0%
NEFOP as pct of Herring Revenue	7.2%	2.9%	3.6%	10.5%

Herring Alternative 2.1 – Sub Option 5

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$1,026,390	$1,179,521	$2,057,720	$1,835,879
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$284,996	$267,061	$626,872	$501,818
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$292,093	$332,733	$583,258	$550,531
Annual Repair/Maint/Upgrade/Haulout	$177,888	$98,231	$182,172	$119,312	$120,240	$101,172	$141,508	$110,893
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$187,892	$200,926	$542,753	$581,061
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$163,329	$137,021
Annual Cost of NEFOP	$67,626	$36,730	$23,759	$13,141	$15,756	$13,934	$15,975	$12,682
NEFOP as pct of RTO	41.5%		9.9%		11.2%		9.8%	
post-NEFOP RTO	$95,454	$72,095	$217,421	$153,564	$125,412	$351,076	$147,354	$135,976
Percent of Revenue from Herring	94.9%	6.3%	100.0%	0.0%	88.0%	15.0%	88.5%	17.9%
Percent of Revenue from Mackerel	8.1%	6.1%			19.5%	17.1%	2.1%	1.3%
Percent of Revenue from Squids							12.2%	8.5%
Percent of Revenue from Other Species	0.0%	0.1%			0.4%	0.5%	20.3%	12.5%
ASM as pct of herring RTO	43.7%		9.9%		12.7%		11.1%	
Average Number of Days at Sea	83	45	29	16	19	17	20	16
Average Number of Trips	28	15	46	29	12	15	10	12

Herring Alternative 2.1 – Sub Option 5

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	6
Total Days at Sea	663	204	116	117
Total Number of Trips	221	320	73	59
Total Herring Revenue	$9,152,836	$10,263,855	$3,606,269	$1,352,045
Total Mackerel Revenue	$657,345	$225	$570,246	$28,633
Total Squid Revenue				$171,323
Total Other Species Revenue	$4,109		$2,721	$237,472
Total Revenue	$9,814,290	$10,264,080	$4,179,236	$1,789,473
Total NEFOP Cost	$541,008	$166,313	$94,538	$95,852
NEFOP as pct of Total Revenue	5.5%	1.6%	2.3%	5.4%
NEFOP as pct of Herring Revenue	5.9%	1.6%	2.6%	7.1%

Herring Alternative 2.2 (100%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$1,026,390	$1,179,521	$1,875,233	$1,505,034
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$284,996	$267,061	$594,112	$412,374
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$292,093	$332,733	$519,728	$451,846
Annual Repair/Maint/Upgrade/Haulout	$177,888	$98,231	$182,172	$119,312	$120,240	$101,172	$149,714	$94,073
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$187,892	$200,926	$467,553	$476,899
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$144,125	$113,903
Annual Cost of ASM	$73,219	$33,016	$39,764	$24,428	$20,079	$11,405	$15,122	$12,298
ASM as pct of RTO	44.9%		16.5%		14.2%		10.5%	
post-ASM RTO	$89,862	$78,545	$201,417	$159,318	$121,089	$353,817	$129,003	$111,075
Percent of Revenue from Herring	91.2%	9.5%	100.0%	0.0%	81.9%	17.0%	52.4%	42.0%
Percent of Revenue from Mackerel	13.9%	8.2%	0.0%		19.4%	17.0%	2.6%	4.1%
Percent of Revenue from Squids							44.3%	39.7%
Percent of Revenue from Other Species	0.1%	0.1%			7.7%	17.0%	21.5%	17.9%
ASM as pct of herring RTO	49.2%		16.5%		17.4%		20.0%	
Average Number of Days at Sea	103	47	56	34	28	16	21	17
Average Number of Trips	34	16	64	37	22	20	11	16

Herring Alternative 2.2 (100%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	9
Total Days at Sea	825	392	170	192
Total Number of Trips	275	451	129	103
Total Herring Revenue	$9,409,389	$11,042,232	$3,842,873	$1,483,242
Total Mackerel Revenue	$1,155,588	$225	$570,246	$97,806
Total Squid Revenue				$529,723
Total Other Species Revenue	$5,906		$50,399	$485,180
Total Revenue	$10,570,883	$11,042,457	$4,463,518	$2,595,951
Total ASM Cost	$585,750	$278,346	$120,477	$136,100
ASM as pct of Total Revenue	5.5%	2.5%	2.7%	5.2%
ASM as pct of Herring Revenue	6.2%	2.5%	3.1%	9.2%

Herring Alternative 2.2 – Sub Option 5 (100%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$1,026,390	$1,179,521	$2,057,720	$1,835,879
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$284,996	$267,061	$626,872	$501,818
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$292,093	$332,733	$583,258	$550,531
Annual Repair/Maint/Upgrade/Haulout	$177,888	$98,231	$182,172	$119,312	$120,240	$101,172	$141,508	$110,893
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$187,892	$200,926	$542,753	$581,061
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$163,329	$137,021
Annual Cost of ASM	$58,841	$31,959	$20,673	$11,434	$13,710	$12,124	$13,900	$11,034
ASM as pct of RTO	36.1%		8.6%		9.7%		8.5%	
post-ASM RTO	$104,239	$73,608	$220,508	$154,643	$127,459	$352,543	$149,429	$136,046
Percent of Revenue from Herring	94.9%	6.3%	100.0%	0.0%	88.0%	15.0%	88.5%	17.9%
Percent of Revenue from Mackerel	8.1%	6.1%	0.0%		19.5%	17.1%	2.1%	1.3%
Percent of Revenue from Squids							12.2%	8.5%
Percent of Revenue from Other Species	0.0%	0.1%			0.4%	0.5%	20.3%	12.5%
ASM as pct of herring RTO	38.0%		8.6%		11.0%		9.6%	
Average Number of Days at Sea	83	45	29	16	19	17	20	16
Average Number of Trips	28	15	46	29	12	15	10	12

Herring Alternative 2.2 – Sub Option 5 (100%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	6
Total Days at Sea	663	204	116	117
Total Number of Trips	221	320	73	59
Total Herring Revenue	$9,152,836	$10,263,855	$3,606,269	$1,352,045
Total Mackerel Revenue	$657,345	$225	$570,246	$28,633
Total Squid Revenue				$171,323
Total Other Species Revenue	$4,109		$2,721	$237,472
Total Revenue	$9,814,290	$10,264,080	$4,179,236	$1,789,473
Total ASM Cost	$470,730	$144,709	$82,257	$83,400
ASM as pct of Total Revenue	4.8%	1.4%	2.0%	4.7%
ASM as pct of Herring Revenue	5.1%	1.4%	2.3%	6.2%

Herring Alternative 2.2 (75%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$144,125	$113,903
Annual Cost of ASM	$54,936	$24,736	$29,898	$18,339	$15,021	$8,472	$11,709	$9,100
ASM as pct of RTO	33.7%		12.4%		10.6%		8.1%	
post-ASM RTO	$108,144	$80,253	$211,282	$159,725	$126,148	$356,073	$132,416	$111,831
Percent of Revenue from Herring	91.3%	9.4%	100.0%	0.0%	82.5%	16.2%	52.7%	42.0%
Percent of Revenue from Mackerel	13.8%	8.0%	0.0%		19.3%	16.7%	2.6%	4.0%
Percent of Revenue from Squids							44.3%	39.8%
Percent of Revenue from Other Species	0.1%	0.1%			7.5%	16.5%	22.6%	19.1%
Average Number of Days at Sea	77	35	42	26	21	12	16	13

Herring Alternative 2.2 (75%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	9
Total Days at Sea	619	295	127	148
Total Herring Revenue	$7,069,090	$8,301,401	$2,870,099	$1,106,513
Total Mackerel Revenue	$865,766	$225	$436,137	$73,907
Total Squid Revenue				$440,897
Total Other Species Revenue	$4,749		$39,714	$385,635
Total Revenue	$7,939,606	$8,301,626	$3,345,950	$2,006,952
Total ASM Cost	$439,489	$209,288	$90,126	$105,382
ASM as pct of Total Revenue	5.5%	2.5%	2.7%	5.3%
ASM as pct of Herring Revenue	6.2%	2.5%	3.1%	9.5%

Herring Alternative 2.2 – Sub Option 5 (75%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$163,329	$137,021
Annual Cost of ASM	$44,198	$23,997	$15,571	$8,472	$10,298	$9,099	$10,474	$8,230
ASM as pct of RTO	27.1%		6.5%		7.3%		6.4%	
post-ASM RTO	$118,882	$76,712	$225,610	$156,562	$130,870	$354,992	$152,855	$136,065
Percent of Revenue from Herring	94.9%	6.2%	100.0%	0.0%	88.1%	14.8%	89.2%	16.8%
Percent of Revenue from Mackerel	8.7%	6.0%	0.0%		19.4%	17.0%	2.2%	1.1%
Percent of Revenue from Squids							11.8%	8.4%
Percent of Revenue from Other Species	0.0%	0.1%			0.5%	0.8%	19.6%	11.3%
Average Number of Days at Sea	62	34	22	12	15	13	15	12

Herring Alternative 2.2 – Sub Option 5 (75%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	6
Total Days at Sea	498	154	87	89
Total Herring Revenue	$6,874,690	$7,702,188	$2,712,401	$1,024,121
Total Mackerel Revenue	$526,863	$225	$433,487	$21,556
Total Squid Revenue				$130,869
Total Other Species Revenue	$3,148		$2,345	$190,706
Total Revenue	$7,404,700	$7,702,413	$3,148,233	$1,367,252
Total ASM Cost	$353,586	$108,996	$61,791	$62,845
ASM as pct of Total Revenue	4.8%	1.4%	2.0%	4.6%
ASM as pct of Herring Revenue	5.1%	1.4%	2.3%	6.1%

Herring Alternative 2.2 (50%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$163,080	$241,180	$241,180	$141,169	$141,169	$144,125	$144,125
Annual Cost of ASM	$36,875	$16,417	$19,846	$12,053	$10,145	$5,662	$8,483	$6,375
ASM as pct of RTO	22.6%		8.2%		7.2%		5.9%	
post-ASM RTO	$126,205	$82,980	$221,334	$160,394	$131,024	$358,152	$135,643	$112,417
Percent of Revenue from Herring	91.4%	9.3%	100.0%	0.0%	83.3%	15.4%	53.6%	42.2%
Percent of Revenue from Mackerel	14.1%	8.0%	0.0%		19.1%	16.2%	2.9%	4.4%
Percent of Revenue from Squids							44.5%	39.8%
Percent of Revenue from Other Species	0.1%	0.2%			8.2%	17.9%	24.7%	21.7%
Average Number of Days at Sea	52	23	28	17	14	8	12	9

Herring Alternative 2.2 (50%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	9
Total Days at Sea	415	196	86	108
Total Herring Revenue	4,732,456	5,510,474	1,943,001	748,019
Total Mackerel Revenue	591,520	225	310,908	56,804
Total Squid Revenue				369,787
Total Other Species Revenue	3,503		33,722	312,508
Total Revenue	5,327,480	5,510,699	2,287,630	1,487,117
Total ASM Cost	$294,999	$138,922	$60,867	$76,346
ASM as pct of Total Revenue	5.5%	2.5%	2.7%	5.1%
ASM as pct of Herring Revenue	6.2%	2.5%	3.1%	10.2%

Herring Alternative 2.2 – Sub Option 5 (50%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$163,329	$137,021
Annual Cost of ASM	$29,489	$15,844	$10,464	$5,525	$6,999	$6,001	$7,247	$5,562
ASM as pct of RTO	18.1%		4.3%		5.0%		4.4%	
post-ASM RTO	$133,591	$80,718	$230,716	$158,500	$134,170	$357,624	$156,082	$136,133
Percent of Revenue from Herring	95.0%	6.2%	100.0%	0.0%	88.5%	14.0%	90.2%	15.2%
Percent of Revenue from Mackerel	10.3%	6.6%	0.0%		19.3%	16.4%	2.7%	0.6%
Percent of Revenue from Squids							11.2%	7.8%
Percent of Revenue from Other Species	0.0%	0.1%			0.8%	1.3%	20.1%	9.6%
Average Number of Days at Sea	42	22	15	8	10	8	10	8

Herring Alternative 2.2 – Sub Option 5 (50%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	6
Total Days at Sea	332	103	59	61
Total Herring Revenue	$4,580,747	$5,158,742	$1,820,329	$708,574
Total Mackerel Revenue	$417,898	$225	$310,536	$15,657
Total Squid Revenue				$95,931
Total Other Species Revenue	$2,109		$2,117	$159,514
Total Revenue	$5,000,754	$5,158,967	$2,132,982	$979,676
Total ASM Cost	$235,915	$73,250	$41,994	$43,482
ASM as pct of Total Revenue	4.7%	1.4%	2.0%	4.4%
ASM as pct of Herring Revenue	5.2%	1.4%	2.3%	6.1%

Herring Alternative 2.2 (25%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$144,125	$113,903
Annual Cost of ASM	$18,578	$7,854	$10,041	$5,914	$5,498	$2,600	$5,642	$4,539
ASM as pct of RTO	11.4%		4.2%		3.9%		3.9%	
post-ASM RTO	$144,503	$86,107	$231,139	$161,277	$135,671	$360,600	$138,483	$112,951
Percent of Revenue from Herring	91.8%	9.0%	100.0%	0.0%	85.0%	13.7%	55.0%	42.1%
Percent of Revenue from Mackerel	16.3%	8.9%	0.1%		20.0%	15.2%	3.1%	4.4%
Percent of Revenue from Squids							44.6%	39.8%
Percent of Revenue from Other Species	0.2%	0.4%			9.0%	19.4%	27.6%	26.7%
Average Number of Days at Sea	26	11	14	8	8	4	8	6

Herring Alternative 2.2 (25%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	9
Total Days at Sea	209	99	46	72
Total Herring Revenue	$2,394,688	$2,774,156	$981,948	$448,402
Total Mackerel Revenue	$357,710	$225	$213,945	$39,547
Total Squid Revenue				$305,034
Total Other Species Revenue	$2,470		$28,154	$249,797
Total Revenue	$2,754,868	$2,774,381	$1,224,046	$1,042,780
Total ASM Cost	$148,622	$70,288	$32,987	$50,782
ASM as pct of Total Revenue	5.4%	2.5%	2.7%	4.9%
ASM as pct of Herring Revenue	6.2%	2.5%	3.4%	11.3%

Herring Alternative 2.2 – Sub Option 5 (25%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$141,169	$362,448	$163,329	$137,021
Annual Cost of ASM	$14,949	$7,649	$5,370	$2,578	$3,994	$2,978	$4,560	$3,380
ASM as pct of RTO	9.2%		2.2%		2.8%		2.8%	
post-ASM RTO	$148,131	$85,224	$235,811	$160,535	$137,175	$360,395	$158,769	$136,042
Percent of Revenue from Herring	95.4%	5.8%	100.0%	0.0%	89.3%	12.8%	90.9%	14.1%
Percent of Revenue from Mackerel	15.5%	9.9%	0.1%	#DIV/0!	20.1%	15.6%	3.1%	0.1%
Percent of Revenue from Squids							11.0%	7.2%
Percent of Revenue from Other Species	0.0%	0.1%			1.3%	2.0%	21.7%	8.6%
Average Number of Days at Sea	21	11	8	4	6	4	6	5

Herring Alternative 2.2 – Sub Option 5 (25%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	6	6
Total Days at Sea	168	53	34	39
Total Herring Revenue	$2,317,299	$2,591,280	$940,773	$452,532
Total Mackerel Revenue	$336,069	$225	$205,825	$10,562
Total Squid Revenue				$68,202
Total Other Species Revenue	$1,128		$1,920	$135,106
Total Revenue	$2,654,496	$2,591,505	$1,148,518	$666,402
Total ASM Cost	$119,591	$37,587	$23,964	$27,358
ASM as pct of Total Revenue	4.5%	1.5%	2.1%	4.1%
ASM as pct of Herring Revenue	5.2%	1.5%	2.5%	6.0%

Herring Alternative 2.3 (100%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$912,105	$1,024,851	$1,875,233	$1,505,034
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$264,620	$232,352	$594,112	$412,374
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$239,242	$297,854	$519,728	$451,846
Annual Repair/Maint/Haulout	$177,888	$98,231	$182,172	$119,312	$110,742	$90,131	$149,714	$94,073
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$163,296	$175,943	$467,553	$476,899
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$134,205	$310,157	$144,125	$113,903
Annual Cost of ASM			$39,527	$24,426			$14,057	$11,107
Annual Cost of EM - year 1	$48,516	$15,113			$22,300	$5,316		
Annual Cost of EM - year 2	$33,516	$15,113			$7,300	$5,316		
Annual Cost of PS	$23,684	$15,503			$9,471	$16,229		
Total Monitoring Costs as pct of RTO - year 1	44.3%		16.4%		23.7%		9.8%	
Total Monitoring Costs as pct of RTO - year 2	35.1%		16.4%		12.5%		9.8%	
Post-monitoring RTO -- year 1	$90,881	$74,211	$201,653	$159,527	$102,434	$292,275	$130,068	$110,673
Post-monitoring RTO -- year 2	$105,881	$74,211	$201,653	$159,527	$117,434	$292,275	$130,068	$110,673
Percent of Revenue from Herring	91.2%	9.5%	100.0%		86.0%	16.3%	52.4%	42.0%
Percent of Revenue from Mackerel	13.9%	8.2%	0.0%		15.5%	17.1%	2.6%	4.1%
Percent of Revenue from Squids					2.9%		44.3%	39.7%
Percent of Revenue from Other Species	0.1%	0.1%			6.4%	15.5%	21.5%	17.9%
ASM as pct of herring RTO -- year 1	48.5%		16.4%		27.5%		18.6%	
ASM as pct of herring RTO -- year 2	38.4%		16.4%		14.5%		18.6%	
Average Number of Days at Sea	103	47	56	34	23	17	21	17
Average Number of Trips	34	16	64	37	18	18	11	16

Herring Alternative 2.3 (100%)

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	8	9
Total Days at Sea	825	392	183	192
Total Number of Trips	275	451	143	103
Total Herring Revenue	$9,409,389	$11,042,232	$3,887,878	$1,483,242
Total Mackerel Revenue	$1,155,588	$225	$570,248	$97,806
Total Squid Revenue			$441	$529,723
Total Other Species Revenue	$5,906		$50,421	$485,180
Total Revenue	$10,570,883	$11,042,457	$4,508,988	$2,595,951
Total ASM Cost		$276,692		$126,515
Total EM Cost - year 1	$388,125		$178,398	
Total EM Cost - year 2	$268,125		$58,398	
Total PS Cost	$189,470		$75,767	
Total Monitoring Costs - year 1	$577,595	$276,692	$254,165	$126,515
Total Monitoring Costs - year 2	$457,595	$276,692	$134,165	$126,515
Monitoring Costs as pct of Total Revenue -- year 1	5.5%	2.5%	5.6%	4.9%
Monitoring Costs as pct of Total Revenue -- year 2	4.3%	2.5%	3.0%	4.9%
Monitoring Costs as pct of Herring Revenue -- year 1	6.1%	2.5%	6.5%	8.5%
Monitoring Costs as pct of Herring Revenue -- year 2	4.9%	2.5%	3.5%	8.5%

Herring Alternative 2.3 – Sub Option 5 (100%)

Per Vessel	Paired MWT		Purse Seine		Single MWT		SMBT	
	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$1,364,372	$920,296	$990,082	$1,081,027	$2,057,720	$1,835,879
Annual Variable Costs	$318,252	$167,769	$330,865	$233,767	$284,110	$243,803	$626,872	$501,818
Annual Crew Share	$410,406	$213,633	$358,167	$270,086	$259,816	$315,519	$583,258	$550,531
Annual Repair/Maint/Haulout	$177,888	$98,231	$182,172	$119,312	$120,806	$92,369	$141,508	$110,893
Annual Fixed Costs	$268,728	$172,799	$251,988	$177,397	$175,636	$186,264	$542,753	$581,061
Annual Return-to-owner	$163,080	$89,827	$241,180	$162,152	$149,714	$331,640	$163,329	$137,021
Annual Cost of ASM			$20,436	$11,155			$12,421	$10,633
Annual Cost of EM - year 1	$41,934	$14,629			$20,425	$5,543		
Annual Cost of EM - year 2	$26,934	$14,629			$5,425	$5,543		
Annual Cost of PS	$22,205	$15,461			$9,943	$17,483		
Total Monitoring Costs as pct of RTO - year 1	39.3%		8.5%		20.3%		7.6%	
Total Monitoring Costs as pct of RTO - year 2	30.1%		8.5%		10.3%		7.6%	
Post-monitoring RTO -- year 1	$98,941	$73,425	$220,744	$154,839	$119,346	$312,177	$150,908	$135,428
Post-monitoring RTO -- year 2	$113,941	$73,425	$220,744	$154,839	$134,346	$312,177	$150,908	$135,428
Percent of Revenue from Herring	94.9%	6.3%	100.0%		89.7%	14.4%	88.5%	17.9%
Percent of Revenue from Mackerel	8.1%	6.1%	0.0%		19.5%	17.1%	2.1%	1.3%
Percent of Revenue from Squids							12.2%	8.5%
Percent of Revenue from Other Species	0.0%	0.1%			0.4%	0.5%	20.3%	12.5%
ASM as pct of herring RTO -- year 1	41.4%		8.5%		22.6%		8.6%	
ASM as pct of herring RTO -- year 2	31.8%		8.5%		11.4%		8.6%	
Average Number of Days at Sea	83	45	29	16	17	17	20	16
Average Number of Trips	28	15	46	29	11	15	10	12

Herring Alternative 2.3 – Sub Option 5 (100%

Fleet Level	Paired MWT	Purse Seine	Single MWT	SMBT
Number of Vessels	8	7	7	6
Total Days at Sea	663	204	117	117
Total Number of Trips	221	320	75	59
Total Herring Revenue	$9,152,836	$10,263,855	$3,618,705	$1,352,045
Total Mackerel Revenue	$657,345	$225	$570,246	$28,633
Total Squid Revenue				$171,323
Total Other Species Revenue	$4,109		$2,721	$237,472
Total Revenue	$9,814,290	$10,264,080	$4,191,672	$1,789,473
Total ASM Cost		$143,055		$74,525
Total EM Cost - year 1	$335,475		$142,978	
Total EM Cost - year 2	$215,475		$37,978	
Total PS Cost	$177,642		$69,602	
Total Monitoring Costs - year 1	$513,117	$143,055	$212,580	$74,525
Total Monitoring Costs - year 2	$393,117	$143,055	$107,580	$74,525
Monitoring Costs as pct of Total Revenue -- year 1	5.2%	1.4%	5.1%	4.2%
Monitoring Costs as pct of Total Revenue -- year 2	4.0%	1.4%	2.6%	4.2%
Monitoring Costs as pct of Herring Revenue -- year 1	5.6%	1.4%	5.9%	5.5%
Monitoring Costs as pct of Herring Revenue -- year 2	4.3%	1.4%	3.0%	5.5%

Herring Alternative 2.3 (75%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$920,296	$1,875,233	$1,505,034
Annual Variable Costs	$330,865	$233,767	$594,112	$412,374
Annual Crew Share	$358,167	$270,086	$519,728	$451,846
Annual Repair/Maint/Haulout	$182,172	$119,312	$149,714	$94,073
Annual Fixed Costs	$251,988	$177,397	$467,553	$476,899
Annual Return-to-owner	$241,180	$162,152	$144,125	$113,903
Annual Cost of ASM	$29,688	$18,340	$11,022	$8,409
Total Monitoring Costs as pct of RTO	12.3%		7.6%	
Post-monitoring RTO	$211,493	$159,855	$133,103	$111,484
Percent of Revenue from Herring	100.0%	0.0%	51.2%	41.7%
Percent of Revenue from Mackerel	0.0%		2.6%	4.2%
Percent of Revenue from Squids			44.4%	39.7%
Percent of Revenue from Other Species			25.2%	22.9%
Average Number of Days at Sea	42	26	16	12

Herring Alternative 2.3 (75%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	9
Total Days at Sea	293	140
Total Herring Revenue	$8,241,208	$1,001,949
Total Mackerel Revenue	$225	$75,775
Total Squid Revenue		$449,327
Total Other Species Revenue		$390,835
Total Revenue	$8,241,433	$1,917,887
Total ASM Cost	$207,816	$99,201
ASM as pct of Total Revenue	2.5%	5.2%
ASM as pct of Herring Revenue	2.5%	9.9%

Herring Alternative 2.3 – Sub Option 5 (75%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$920,296	$2,057,720	$1,835,879
Annual Variable Costs	$330,865	$233,767	$626,872	$501,818
Annual Crew Share	$358,167	$270,086	$583,258	$550,531
Annual Repair/Maint/Upgrade/Haulout	$182,172	$119,312	$141,508	$110,893
Annual Fixed Costs	$251,988	$177,397	$542,753	$581,061
Annual Return-to-owner	$241,180	$162,152	$163,329	$137,021
Annual Cost of ASM	$15,398	$8,297	$9,485	$8,100
Total Monitoring Costs as pct of RTO	6.4%		5.8%	
Post-monitoring RTO	$225,782	$156,687	$153,844	$135,795
Percent of Revenue from Herring	100.0%		89.2%	16.7%
Percent of Revenue from Mackerel			2.3%	1.0%
Percent of Revenue from Squids			11.7%	8.3%
Percent of Revenue from Other Species			19.6%	11.2%
Average Number of Days at Sea	22	12	13	11

Herring Alternative 2.3 – Sub Option 5 (75%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	6
Total Days at Sea	152	80
Total Herring Revenue	$7,650,163	$911,714
Total Mackerel Revenue	$225	$22,315
Total Squid Revenue		$131,929
Total Other Species Revenue		$189,011
Total Revenue	$7,650,388	$1,254,969
Total ASM Cost	$107,786	$56,912
ASM as pct of Total Revenue	1.4%	4.5%
ASM as pct of Herring Revenue	1.4%	6.2%

Herring Alternative 2.3 (50%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$920,296	$1,875,233	$1,505,034
Annual Variable Costs	$330,865	$233,767	$594,112	$412,374
Annual Crew Share	$358,167	$270,086	$519,728	$451,846
Annual Repair/Maint/Haulout	$182,172	$119,312	$149,714	$94,073
Annual Fixed Costs	$251,988	$177,397	$467,553	$476,899
Annual Return-to-owner	$241,180	$162,152	$144,125	$113,903
Annual Cost of ASM	$19,846	$12,187	$8,068	$6,006
Total Monitoring Costs as pct of RTO	8.2%		5.6%	
Post-monitoring RTO	$221,334	$160,452	$136,058	$112,294
Percent of Revenue from Herring	100.0%		52.4%	41.7%
Percent of Revenue from Mackerel			2.7%	4.1%
Percent of Revenue from Squids			44.4%	39.8%
Percent of Revenue from Other Species			26.7%	25.4%
Average Number of Days at Sea	28	17	11	8

Herring Alternative 2.3 (50%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	9
Total Days at Sea	196	102
Total Herring Revenue	$5,497,621	$687,022
Total Mackerel Revenue	$225	$55,011
Total Squid Revenue		$369,165
Total Other Species Revenue		$312,299
Total Revenue	$5,497,846	$1,423,497
Total ASM Cost	$138,923	$72,608
ASM as pct of Total Revenue	2.5%	5.1%
ASM as pct of Herring Revenue	2.5%	10.6%

Herring Alternative 2.3 – Sub Option 5 (50%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$920,296	$2,057,720	$1,835,879
Annual Variable Costs	$330,865	$233,767	$626,872	$501,818
Annual Crew Share	$358,167	$270,086	$583,258	$550,531
Annual Repair/Maint/Upgrade/Haulout	$182,172	$119,312	$141,508	$110,893
Annual Fixed Costs	$251,988	$177,397	$542,753	$581,061
Annual Return-to-owner	$241,180	$162,152	$163,329	$137,021
Annual Cost of ASM	$10,354	$5,375	$6,660	$5,446
Total Monitoring Costs as pct of RTO	4.3%		4.1%	
Post-monitoring RTO	$230,827	$158,636	$156,669	$135,837
Percent of Revenue from Herring	100.0%	0.0%	90.0%	15.5%
Percent of Revenue from Mackerel			2.5%	0.7%
Percent of Revenue from Squids			11.3%	7.6%
Percent of Revenue from Other Species			20.4%	10.8%
Average Number of Days at Sea	15	8	9	8

Herring Alternative 2.3 – Sub Option 5 (50%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	6
Total Days at Sea	102	56
Total Herring Revenue	$5,097,080	$646,236
Total Mackerel Revenue	$225	$15,486
Total Squid Revenue		$97,456
Total Other Species Revenue		$161,940
Total Revenue	$5,097,305	$921,118
Total ASM Cost	$72,475	$39,960
ASM as pct of Total Revenue	1.4%	4.3%
ASM as pct of Herring Revenue	1.4%	6.2%

Herring Alternative 2.3 (25%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$1,364,372	$1,875,233	$1,875,233
Annual Variable Costs	$330,865	$330,865	$594,112	$594,112
Annual Crew Share	$358,167	$358,167	$519,728	$519,728
Annual Repair/Maint/Haulout	$182,172	$182,172	$149,714	$149,714
Annual Fixed Costs	$251,988	$251,988	$467,553	$467,553
Annual Return-to-owner	$241,180	$162,152	$144,125	$113,903
Annual Cost of ASM	$10,019	$5,962	$5,421	$4,430
Total Monitoring Costs as pct of RTO	4.2%		3.8%	
Post-monitoring RTO	$231,162	$161,355	$138,705	$112,934
Percent of Revenue from Herring	100.0%		54.1%	41.7%
Percent of Revenue from Mackerel			3.2%	4.4%
Percent of Revenue from Squids			44.6%	39.7%
Percent of Revenue from Other Species			29.1%	28.6%
Average Number of Days at Sea	14	8	8	6

Herring Alternative 2.3 (25%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	9
Total Days at Sea	99	69
Total Herring Revenue	$2,743,261	$406,896
Total Mackerel Revenue	$225	$40,081
Total Squid Revenue		$303,807
Total Other Species Revenue		$255,297
Total Revenue	$2,743,486	$1,006,081
Total ASM Cost	$70,132	$48,785
ASM as pct of Total Revenue	2.6%	4.8%
ASM as pct of Herring Revenue	2.6%	12.0%

Herring Alternative 2.3 – Sub Option 5 (25%) – Vessels with ASM Costs Only

Per Vessel	Purse Seine		SMBT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,364,372	$920,296	$2,057,720	$1,835,879
Annual Variable Costs	$330,865	$233,767	$626,872	$501,818
Annual Crew Share	$358,167	$270,086	$583,258	$550,531
Annual Repair/Maint/Upgrade/Haulout	$182,172	$119,312	$141,508	$110,893
Annual Fixed Costs	$251,988	$177,397	$542,753	$581,061
Annual Return-to-owner	$241,180	$162,152	$163,329	$137,021
Annual Cost of ASM	$5,332	$2,509	$4,245	$3,354
Total Monitoring Costs as pct of RTO	2.2%		2.6%	
Post-monitoring RTO	$235,849	$160,539	$159,084	$135,911
Percent of Revenue from Herring	100.0%		91.2%	13.6%
Percent of Revenue from Mackerel			3.0%	0.1%
Percent of Revenue from Squids			10.7%	6.8%
Percent of Revenue from Other Species			22.0%	8.2%
Average Number of Days at Sea	8	4	6	5

Herring Alternative 2.3 – Sub Option 5 (25%) – Vessels with ASM Costs Only

Fleet Level	Purse Seine	SMBT
Number of Vessels	7	6
Total Days at Sea	53	36
Total Herring Revenue	$2,576,105	$414,982
Total Mackerel Revenue	$225	$10,547
Total Squid Revenue		$67,727
Total Other Species Revenue		$139,331
Total Revenue	$2,576,330	$632,588
Total ASM Cost	$37,322	$25,472
ASM as pct of Total Revenue	1.4%	4.0%
ASM as pct of Herring Revenue	1.4%	6.1%

Herring Alternative 2.4

Per Vessel	Paired MWT		Single MWT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$912,105	$1,024,851
Annual Variable Costs	$318,252	$167,769	$264,620	$232,352
Annual Crew Share	$410,406	$213,633	$239,242	$297,854
Annual Repair/Maint/Haulout	$177,888	$98,231	$110,742	$90,131
Annual Fixed Costs	$268,728	$172,799	$163,296	$175,943
Annual Return-to-owner	$163,080	$89,827	$134,205	$310,157
Annual Cost of EM - year 1	$48,516	$15,113	$22,300	$5,316
Annual Cost of EM - year 2	$33,516	$15,113	$7,300	$5,316
Annual Cost of PS	$23,684	$15,503	$9,471	$16,229
Total Monitoring Costs as pct of RTO - year 1	44.3%		23.7%	
Total Monitoring Costs as pct of RTO - year 2	35.1%		12.5%	
Post-monitoring RTO -- year 1	$90,881	$74,211	$102,434	$292,275
Post-monitoring RTO -- year 2	$105,881	$74,211	$117,434	$292,275
Percent of Revenue from Herring	91.2%	9.5%	86.0%	16.3%
Percent of Revenue from Mackerel	13.9%	8.2%	15.5%	17.1%
Percent of Revenue from Squids			2.9%	
Percent of Revenue from Other Species	0.1%	0.1%	6.4%	15.5%
ASM as pct of herring RTO -- year 1	48.5%		27.5%	
ASM as pct of herring RTO -- year 2	38.4%		14.5%	
Average Number of Days at Sea	103	47	22	16
Average Number of Trips	34	16	18	18

Herring Alternative 2.4

Fleet Level	Paired MWT	Single MWT
Number of Vessels	8	8
Total Days at Sea	825	180
Total Number of Trips	275	140
Total Herring Revenue	$9,409,389	$3,873,778
Total Mackerel Revenue	$1,155,588	$570,248
Total Squid Revenue		$441
Total Other Species Revenue	$5,906	$50,421
Total Revenue	$10,570,883	$4,494,888
Total EM Cost - year 1	$388,125	$178,398
Total EM Cost - year 2	$268,125	$58,398
Total PS Cost	$189,470	$75,767
Total Monitoring Costs - year 1	$577,595	$254,165
Total Monitoring Costs - year 2	$457,595	$134,165
Monitoring Costs as pct of Total Revenue -- year 1	5.5%	5.7%
Monitoring Costs as pct of Total Revenue -- year 2	4.3%	3.0%
Monitoring Costs as pct of Herring Revenue -- year 1	6.1%	6.6%
Monitoring Costs as pct of Herring Revenue -- year 2	4.9%	3.5%

Herring Alternative 2.4 – Sub Option 5

Per Vessel	Paired MWT		Single MWT	
	Average	Stnd Dev	Average	Stnd Dev
Annual Gross Revenue	$1,338,354	$704,254	$990,082	$1,081,027
Annual Variable Costs	$318,252	$167,769	$284,110	$243,803
Annual Crew Share	$410,406	$213,633	$259,816	$315,519
Annual Repair/Maint/Haulout	$177,888	$98,231	$120,806	$92,369
Annual Fixed Costs	$268,728	$172,799	$175,636	$186,264
Annual Return-to-owner	$163,080	$89,827	$149,714	$331,640
Annual Cost of EM - year 1	$41,934	$14,629	$20,425	$5,543
Annual Cost of EM - year 2	$26,934	$14,629	$5,425	$5,543
Annual Cost of PS	$22,205	$15,461	$9,943	$17,483
Total Monitoring Costs as pct of RTO - year 1	39.3%		20.3%	
Total Monitoring Costs as pct of RTO - year 2	30.1%		10.3%	
Post-monitoring RTO -- year 1	$98,941	$73,425	$119,346	$312,177
Post-monitoring RTO -- year 2	$113,941	$73,425	$134,346	$312,177
Percent of Revenue from Herring	94.9%	6.3%	89.7%	14.4%
Percent of Revenue from Mackerel	8.1%	6.1%	19.5%	17.1%
Percent of Revenue from Squids				
Percent of Revenue from Other Species	0.0%	0.1%	0.4%	0.5%
ASM as pct of herring RTO -- year 1	41.4%		22.6%	
ASM as pct of herring RTO -- year 2	31.8%		11.4%	
Average Number of Days at Sea	83	45	17	17
Average Number of Trips	28	15	11	15

Herring Alternative 2.4 – Sub Option 5

Fleet Level	Paired MWT	Single MWT
Number of Vessels	8	7
Total Days at Sea	663	117
Total Number of Trips	221	75
Total Herring Revenue	$9,152,836	$3,618,705
Total Mackerel Revenue	$657,345	$570,246
Total Squid Revenue		
Total Other Species Revenue	$4,109	$2,721
Total Revenue	$9,814,290	$4,191,672
Total EM Cost - year 1	$335,475	$142,978
Total EM Cost - year 2	$215,475	$37,978
Total PS Cost	$177,642	$69,602
Total Monitoring Costs - year 1	$513,117	$212,580
Total Monitoring Costs - year 2	$393,117	$107,580
Monitoring Costs as pct of Total Revenue -- year 1	5.2%	5.1%
Monitoring Costs as pct of Total Revenue -- year 2	4.0%	2.6%
Monitoring Costs as pct of Herring Revenue -- year 1	5.6%	5.9%
Monitoring Costs as pct of Herring Revenue -- year 2	4.3%	3.0%

Herring Alternative 2.5

Per Vessel	Average	Stnd Dev
Annual Gross Revenue	$1,752,994	$822,480
Annual Variable Costs	$409,945	$181,028
Annual Crew Share	$527,920	$227,404
Annual Repair/Maint/Upgrade/Haulout	$208,650	$73,627
Annual Fixed Costs	$340,386	$171,281
Annual Return-to-owner	$266,094	$239,382
Annual Cost of NEFOP	$9,353	$7,604
NEFOP as pct of RTO	3.5%	
post-NEFOP RTO	$256,740	$244,116
Percent of Revenue from Herring	99.9%	0.4%
Percent of Revenue from Mackerel		
Percent of Revenue from Squids		
Percent of Revenue from Other Species	0.2%	0.4%
Average Number of Days at Sea	11	9
Average Number of Trips	4	3

Fleet Level	
Number of Vessels	8
Total Days at Sea	92
Total Number of Trips	33
Total Herring Revenue	$1,437,094
Total Mackerel Revenue	
Total Squid Revenue	
Total Other Species Revenue	$1,170
Total Revenue	$1,438,264
Total NEFOP Cost	$74,827
NEFOP as pct of Total Revenue	5.2%
NEFOP as pct of Herring Revenue	5.2%

Herring Alternative 2.5 – Sub Option 5

Per Vessel	Average	Stnd Dev
Annual Gross Revenue	$1,752,994	$822,480
Annual Variable Costs	$409,945	$181,028
Annual Crew Share	$527,920	$227,404
Annual Repair/Maint/Upgrade/Haulout	$208,650	$73,627
Annual Fixed Costs	$340,386	$171,281
Annual Return-to-owner	$266,094	$239,382
Annual Cost of NEFOP	$6,293	$3,131
NEFOP as pct of RTO	2.4%	
post-NEFOP RTO	$259,800	$241,604
Percent of Revenue from Herring	100.0%	0.0%
Percent of Revenue from Mackerel		
Percent of Revenue from Squids		
Percent of Revenue from Other Species	0.0%	0.0%
Average Number of Days at Sea	8	4
Average Number of Trips	3	1

Fleet Level	
Number of Vessels	8
Total Days at Sea	62
Total Number of Trips	23
Total Herring Revenue	$1,379,191
Total Mackerel Revenue	
Total Squid Revenue	
Total Other Species Revenue	
Total Revenue	$1,379,191
Total NEFOP Cost	$50,347
NEFOP as pct of Total Revenue	3.7%
NEFOP as pct of Herring Revenue	3.7%

Herring Alternative 2.6

Analyses are not yet complete for this alternative. Alternative 2.6 applies the same criteria as found in Alternatives 2.2, 2.3, and 2.4 but only for vessels that fish in groundfish closed areas. However, in order to provide a means for obtaining a reasonably reliable estimate of the impacts of Alternative 2.6, the following two tables are provided. The first table shows the major differences between Alternatives 2.1 and 2.5 at 100% coverage for trips with > 1 lb of herring landed (the second table shows the differences for trips > 25 mt – Sub-Option 5). These two alternatives are identical except that Alternative 2.5 applies only to vessels that fish in groundfish closed areas and applies to MWT vessels with category A through E herring permits whereas Alternative 2.1 applies to vessel with category A and B permits only. Therefore, these differences can be used to estimate the impacts of Alternative 2.6.

Trips with Herring Landings > 1 lb (includes all gear types)

	Herring Alternative 2.1	Herring Alternative 2.5	Herring Alternative 2.5 as a Percent of Alternative 2.1	
Number of Vessels	30	8	26.7%	
Total Days at Sea	1,579	92	5.8%	
Number of Trips	958	33	3.4%	
Total Revenue	$28,672,809	$1,438,264	5.0%	Use this for estimating portside sampling costs for Alternative 2.6
Total NEFOP Cost	$1,287,985	$74,827	5.8%	Use this for estimating EM and ASM costs for Alternative 2.6

Trips with Herring Landings > 25 mt (Sub-Option 5) (includes all gear types)

	Herring Alternative 2.1	Herring Alternative 2.5	Herring Alternative 2.5 as a Percent of Alternative 2.1	
Number of Vessels	27	8	29.6%	
Total Days at Sea	1,100	62	5.6%	
Number of Trips	673	23	3.4%	
Total Revenue	$246,047,079	$1,379,191	5.6%	Use this for estimating portside sampling costs for Alternative 2.6
Total NEFOP Cost	$897,711	$50,347	5.6%	Use this for estimating EM and ASM costs for Alternative 2.6