Annette Islands Reserve Salmon
4th Annual Surveillance Audit Report

Certificate Code F-SCS-0025

Authors Adrienne Vincent
Ray Beamesderfer

July 16, 2015

1. Contents

Glossary

AIR	Annette Islands Reserve
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CR	Certification Requirements
CWT	Coded Wire Tag
EEZ	Exclusive Economic Zone
ETP	Endangered, Threatened or Protected species
FAO	Food and Agriculture Organization of the United Nations
Kg	kilogram
lb.	Pound, equivalent to roughly 2.2 kg
LOA	Length Over-All
M	Million (lbs.)
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
nm	nautical mile
OFL	Over-Fishing Level
SCS	SCS Global Services
SSB	Spawning Stock Biomass
t and mt	metric ton
TAC	Total Allowable Catch
WWF	World Wildlife Fund

General Information

Fishery name	Annette Islands Reserve Salmon		
12 Units of assessment	chum, coho, king and pink salmon harvested by gillnet, troll and seine in waters of the Annette Islands Reserve located in southeast Alaska, USA.		
Date certified	17 June 2011	**Date of expiry**	16 June 2016
Surveillance level and type	*4th surveillance audit. Onsite. No change from previous schedule.*		
Date of surveillance audit			
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance	X	
	Other (expedited etc)		
Surveillance team	Lead assessor: Adrienne Vincent Assessor(s): Ray Beamesderfer		
CAB name	SCS Global Services		
CAB contact details	Address	2000 Powell St. Ste.600 Emeryville CA 94608, USA	
	Phone/Fax	+1.510-452-8000 main +1.510452-8001 fax	
	Email	msc@scsglobalservices.com	
	Contact name(s)	Dr. Sian Morgan	
Client contact details	Address	PO Box 8 Metlakatla, AK 99926, USA	
	Phone/Fax	+1.907-886-3474	
	Email	moranfw@aptalaska.net	
	Contact name(s)	Jeff Moran	

2. Background

SCS finds that the Annette Islands salmon fisheries are still in general compliance with the MSC standard. SCS recommends the continued use of the MSC certificate through to the expiry of the certificate.

During the 4th annual audit, the timelines for the conditions were adjusted to account for the time it will take for thermally marked chum salmon from Tamgas Creek hatchery released in 2013 to return to Annette Island. The hatchery has also contracted with a third party to conduct an evaluation of the impacts of the hatchery on naturally spawning populations. At the audit the team accepted this as evidence that progress was being made to close conditions relating to the evaluation. The timelines for these conditions have been adjusted to account for the publication of the evaluation and recommendation report. The fishery is therefore on-target for the remaining open conditions that will be carried over and evaluated in the re-assessment.

There were no appreciable changes to the way that the fishery was managed since the 2014 audit. Staff remained the same and there were also no appreciable changes to stock status or methods of fishing since the last audit.

No stakeholders presented views or opinions to during this audit, none are therefore included in this report.

Being a terminal salmon fishery, the fishery is managed such that escapement goals in steams are met. There is therefore no Total Allowable Catch (TAC), though escapement goals were generally met across the island.

Table 1. 2014 and 2013 Catch Data by Unit of Certification.

Total green weight	Year	Gillnet	Seine	Troll
King salmon	2014	23,582 lbs	2,243 lbs	1,439 lbs
	2013	17,905 lbs	3,840 lbs	880 lbs
coho salmon	2014	357,192 lbs	48,191 lbs	4,752 lbs
	2013	320,110 lbs	55,877 lbs	9,266 lbs
pink salmon	2014	2,073,386 lbs	6,119,820 lbs	1,479 lbs
	2013	1,652,960 lbs	8,299,260 lbs	717 lbs
chum salmon	2014	910,869 lbs	296,993 lbs	78 lbs
	2013	1,357,686 lbs	440,301 lbs	2,290 lbs

Table 2. Summary of Assessment Conditions. Open conditions are highlighted.

Condition number	Performance indicator (PI)	Species Condition Applied to	Status of Condition	PI original score to revised score
1	1.1.2	Coho	Closed in 2014	75 to 80
2	1.1.2	Chinook	Closed in 2013	75 to 80
3	2.1.1	Sockeye	Closed in 2014	60 to 80
4	1.2.3	Pink	Closed in 2014	75 to 80
5	1.2.3	Chum	Open & on target	75
6	1.2.3	Chum	Closed in 2012	75 to 80
7	1.2.3	Coho	Closed in 2013	75 to 80
8	1.2.3	Chinook	Closed in 2013	75 to 80
9	1.3.1	Chum	Closed in 2012	70 to 80
10	1.3.1	Coho	Open & on target	70
11	1.3.3	Chum	Open & on target	70
12	1.3.3	Coho	Open & on target	65
13	1.3.3	Chinook	Closed in 2013	70 to 80
14	2.2.3	All	Closed in 2013	70 to 80

Condition number	Performance indicator (PI)	Species Condition Applied to	Status of Condition	PI original score to revised score
15	2.3.3	All	Closed in 2013	70 to 80
16	2.4.1	Sockeye	Open & on target	70
17	2.4.2	Sockeye	Open & on target	70
18	2.5.3	All	Closed in 2014	70 to 80
19	3.1.2	All	Closed in 2014	75 to 80
20	3.1.3	All	Closed in 2014	75 to 80
21	3.2.4	All	Closed in 2012	65 to 90
22	3.2.5	All	Closed in 2012	70 to 80

3. Assessment Process

The Annette Island Reserve salmon fisheries entered MSC assessment in November 2009. The MSC default assessment tree was modified with the input from stakeholders to accommodate the enhancement aspect and used to assess the wild components of these fisheries. The successful salmon fisheries were certified as a sustainable source of seafood in June of 2011. Four species of salmon captured by three gear types within the limits of the reserve (3,000 ft from the island) are included in 12 units of certification.

Since the initial certification, the MSC has published the Certification Requirements (CR v2.0, April 2015). The assessment tree by which the fisheries were evaluated remains the same as it was in the original assessment. All other requirements for fishery surveillance follow the CR v2.0 criteria and guidance. On 7 April, 2015 an announcement was posted to the MSC website informing stakeholders that a meeting would take place in Metlakatla on Annette Island. The two person SCS surveillance assessment team met with Metlakatla Fish and Wildlife and Silver Bay Fish Seafoods Company staff on May 18 in Metlakatla, AK.

3.1 Methodology

The surveillance audit was carried out in accordance with the Marine Stewardship Council (MSC) Certification Requirements (CRv2.0, April 2015). The fishery surveillance frequency was determined to have annual onsite meetings after evaluating the fishery relative to table 5 in the CR.

The issues for the certifier are whether the fishery has sufficiently acted on the required conditions set forth in the original certification report, and whether a random check on the performance of the fishery verifies continued compliance with the MSC standards. Should a fishery fail the surveillance audit, and cannot address identified deficiencies in a reasonable period of time, then the use of the certificate and the MSC logo can be revoked by the certifier.

The annual surveillance audit process is comprised of four general parts:

1. The certification body provides questions around areas of inquiry to determine if the fishery is maintaining the level of management observed during the original certification. In addition, the surveillance team requires that the client provide evidence that the fishery management system has taken the necessary actions to meet all conditions placed on the fishery during the initial certification assessment or any previous surveillance audits.

2. The surveillance/assessment team meets with the client fishery to allow the client to present the information gathered in answer to the questions asked by the surveillance team The surveillance team can then ask questions about the information provided to ensure its full understanding of how well the fishery management system is functioning and if the fishery management system is continuing to meet the MSC standards.
3. The surveillance team presents its findings to the client fishery at the end of the site visit. The results outline the assessment team's understanding of the information presented and its conclusion regarding the fishery management system's continued compliance with MSC standards. Where indicated, the surveillance team may provide the client fishery with additional time to supplement the information provided if the surveillance team finds that there are still issues requiring clarification.
4. Where appropriate, the client fishery submits final information to the surveillance/assessment team for consideration in the surveillance findings and report. The surveillance team then reviews the final information and submits a final report to the client fishery and the MSC for posting on the MSC website. If there are continued compliance concerns, these are presented as non-conformances that require further action and audits as specified in the surveillance report.

3.2 Surveillance Team

The surveillance team consisted of two persons that met the qualifications for an MSC surveillance audit team. Below are their roles, responsibilities and short biographies.

Team Leader: Ms. Adrienne Vincent
Assessor MSC Principle 1: Mr. Ray Beamesderfer
Assessor MSC Principle 2: Ms. Adrienne Vincent
Assessor MSC Principle 3: Mr. Ray Beamesderfer

Ms. Adrienne Vincent, Lead Auditor and P2, representing SCS Global Services

Ms. Vincent was the lead auditor and conducted the review of issues in Principle 2. She serves as the primary contact person for SCS fisheries in assessment and throughout the surveillance period. Adrienne is a marine biologist that has worked closely with finfish species of commercial importance including. After completing her B.Sc. in biology from the University of Oregon she completed an e.M.B. with the Oregon Institute of Marine Biology where she focused on marine species management, estuarine trophic relationships, and plankton distribution based on real time oceanographic conditions. Adrienne thereafter joined the State Managed Finfish Project with the California Department of Fish and Game where she worked on stock assessment and management issues as well as catch and effort sampling design and biological sampling design. Vincent managed the hook-and-line and trawl fishery independent sampling (indices of abundance) and by-catch rate surveys as well as halibut movement and age structure studies. Since with SCS, she has been a lead auditor with several MSC assessments and surveillance audits including Iturup pink and chum salmon, Hokkaido chum salmon, Pacific halibut and sablefish (US and Canada), Scotian-Fundy haddock, Scotian Shelf shrimp and Macquarie Island toothfish. Adrienne is a certified lead auditor under the International Standard Organization (ISO) 90011:2008 certification requirement, an MSC fisheries and chain-of-custody lead auditor and an auditor for the social accountability standard: SA8000.

Mr. Ray Beamesderfer, P1 & P3, R2 Resource Consultants

Mr. Beamesderfer was on the original assessment team for the Annette Island salmon fisheries. He holds a bachelor's degree in Wildlife and Fisheries Biology from the University of California, Davis, and a Master's in Fishery Resources from the University of Idaho. He previously worked for the

Oregon Department of Fish and Wildlife where his experience included stock assessment and management of Columbia River salmon fisheries. As a consultant, he has completed a wide variety of projects in fishery management, biological assessment, and conservation/recovery planning. He is the author of numerous reports, biological assessments, management plans, and scientific articles on fish population dynamics, fish conservation, fishery and hatchery management, sampling, and species interactions. Ray has also served with SCS on fishery Assessment Teams for salmon fisheries in Alaska, Russia and Japan.

3.3 Surveillance Meeting

A meeting took place on May 18, 2015 with the Metlakatla Indian Community representatives and MIC Department of Fish and Wildlife staff. The discussions focused on the ongoing activities associated with the conditions placed on the fishery as well as updates on the fishery since certification in 2011. The team also interviewed a fisher. A meeting also occurred on June 18 with a representative of the fish processing company (Silver Bay Metlakatla, formerly Annette Island Packing Company).

Related documents were presented by the client to SCS during the meeting in Metlakatla, AK USA. Some follow-up documents were also requested.

Table 3. Annual Assessment Meeting Attendees and Organizations.

Name	Role	Affiliation
Ms. Adrienne Vincent	Lead Auditor, Assessment P2	SCS
Mr. Ray Beamesderfer	Assessment team P1 and P3	R2 Resource Consultants
Mr. Jeff Moran	Fishery Science	MIC Fish & Wildlife Department
Mr. Dustin Winter	Fishery Management	MIC Fish & Wildlife Department
Mr. Steve Leask	Hatchery Management	Tamgas Creek Hatchery Manager
Ms. Sonia Smart	Fish Processing Company	Silver Bay - Metlakatla
Curtis Gaub	Interviewed	Fisher

4. Results

Table 4: Open Conditions at the 4th annual audit and the results from the audit.

Condition 5			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	1.2.3 Chum, all gear types	**Information is sufficient to estimate the significance of fishery harvests on stock components.**	**75**
Condition	*By [the re-certification audit], obtain information sufficient to estimate the significance of fishery harvests on stock components of chum salmon including local, non-local, hatchery and wild stocks as appropriate. The client shall consider including a combination of mark or tag recoveries, genetic stock identification, relative status and productivity, migration pattern or timing considerations. [Time frame adjusted in 2015]*		
Milestones	*Begin marking in September [2013] and each year thereafter marking will take place [The timeline was adjusted due to thermal marks not being applied until 2013 due to broken plumbing at the hatchery and time for the salmon to return from their ocean stage].*		

	Information and otolith gathering and monitoring will start in 2015 with the marked chum return.
Client action plan	*This condition will be met by working directly with ADF&G gathering information and documenting related stock structuring, target stock and productivity to determine what is local and non-local stock. Checking harvested fish for thermal markings will determine local and non-local stock, stock structuring and target stock. Summer chum will be thermally marked with a unique mark starting in 2013 and thereafter.*
Progress on Condition Year 4	*This condition concerns the need to determine the specific contributions of local and non-local, hatchery and non-hatchery chum salmon stocks to the AIR fishery, including both summer and fall chum. This condition is one of two placed on the chum fishery for PI 1.2.3. Assessment of hatchery contributions will involve fishery sampling for otolith marked fish from Tamgas and other SE AK chum salmon hatcheries. Estimates of stock composition based on marking will be most effective for the summer chum program where a very large majority of the AIR harvest originates from the Tamgas Hatchery program. Summer chum are endemic to the region but streams in the vicinity of the AIR do not support summer chum returns due to unfavorable habitat features for this run timing (i.e. increased temperature in AIR streams in summer months).* *Analyses of the composition of the fall chum harvest will involve a combination of mark sampling and other analysis similar to those under consideration for pink salmon. Fall chum production was discontinued at Tamgas hatchery after 2010. Hence, thermal marking of local Fall chum production does not present an alternative for stock composition analysis. However, thermal marking of Fall chum production currently occurs at other SE AK hatcheries and determinations might also involve genetic stock identification or inferences from relative production, migration and timing patterns. It is expected that the Fall chum assessment will primarily involve analysis of current and historical data. The need for the collection of additional information or the development of alternative methods for fall chum will be determined based on the results of the initial analysis.* *Effective evaluation is predicated on thermal marking of Tamgas hatchery production of summer chum. The hatchery withdraws water from Tamgas Lake where surface and submerged intakes allows control of water temperature in the hatchery. However, a mixing chamber between the intakes and the hatchery precludes use of different water temperatures for different portions of the production at any one time. An additional deep water intake and line is available for bringing in cold water which can be used for thermal otolith marking. However, substantial re-plumbing of the system was needed to make it operational. Thermal marking was initially scheduled to begin with the 2011 brood year so that marked fish would be available beginning in the 2014 for the 4th surveillance. However, engineering issues delayed reconfiguration of the water system until 2013. This delay relative to the condition action plan, led to identification of this condition as behind schedule and in major non-conformance in the 2013 (2nd) surveillance.* *Water system changes were completed during the summer of June 2013 and a representative sample (20%) of the Tamgas summer chum production was thermally marked in fall of 2013. The ADFG mark lab has confirmed that otolith marking was successful from test samples of the production. Similar marking will occur from hereon. Otolith marking and mark sampling is also now been instituted at other Southeast Alaska hatcheries and will provide a basis for a comprehensive evaluation.* *Funding from the state has also been identified to develop additional facilities to relocate a large portion of the summer chum production to a new facility on Melanson Creek in the Port Chester terminal fishery area. Hatchery design is underway. The new facility is being designed to facilitate thermal marking of all summer chum produced at the hatchery.* *This condition will be met in full by working directly with ADF&G to gather information and document related stock structuring, target stock and productivity and identifying local and non-local stock in the harvest. This work will be completed by the MIC Fisheries for monitoring. Tamgas Hatchery for otolith marking and SSRAA or ADF&G for otolith reading. Otolith gathering and analysis began with the 2014 return and will be*

	conducted annually. The 2015 run year will be the first where otolith-marked chum salmon (age 2) from Tamgas Hatchery production are expected to return.
Status of condition	*Open and on-target. Timeline requirements redefined until post 2015 spawning season. This condition will remain open and re-checked in January 2016. Due to the biology of chum salmon requiring 2 years at sea and the delays in hatchery marking caused by issues with hatchery plumbing that delayed thermal otolith marking until 2013.The team found that the hatchery manager did due diligence in repairing the plumbing, but it was too late in the incubation period to apply thermal otolith marks.*

Condition 10			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	1.3.1 Coho	**It is highly likely that the enhancement activities do not have significant negative impacts on productivity or diversity of wild stocks.**	**70**
Condition	*By the [re-assessment audit], demonstrate that enhancement activities do not have significant negative impacts on productivity and diversity of wild coho salmon on the AIR. This condition may be met if no significant straying or impact can be demonstrated, or effective remedies to address negative impacts are implemented. If necessary, the client shall consider remedies consistent with the extent and nature of the effect.*		
Milestones	*Micro wire tagging will be increased to 3% in 2011.* *Thermal marking will be done on all Coho in 2012.* *Analysis of tagged and marked returns will begin in 2014 and be done with the first year by 2015. Analysis will continue every year thereafter. The external review will be start by the first surveillance audit complete by the second surveillance audit.*		
Client action plan	*This condition will be met by monitoring and documenting missing adipose fins on Coho salmon in streams on AIR, micro wire tagging and thermal marking.* *Micro wire tagging will be increased to at least 2-3%. Coho thermal marking will be done on all Coho next year.* *Coho with missing adipose fins will be identified during stream walking surveys and spawn collecting.* *A third party external evaluation will be completed and include an assessment of the hatchery impacts on wild salmon populations.*		
Progress on Condition Year 4	*The potential for negative impacts of hatchery coho on local wild populations was initially planned to be evaluated based on the proportion of hatchery origin fish in spawning areas as identified from tagged hatchery fish. A sample of the coho hatchery production is currently marked with coded wire tags (approximately 2-3%). Plans also called for hatchery coho to be thermally marked so that hatchery fish can be identified by otolith samples. Thermal marking was expected to substantially improve the precision of hatchery contribution estimates in spawning areas. The need for hatchery thermal marking was to be contingent on the identification of effective sampling methods for adult coho in freshwater.* *Identification of marked hatchery coho in natural spawning areas was predicated on the effectiveness of spawning ground surveys. Spawning ground surveys have proven ineffective for coho in AIR streams due to high flows and turbid conditions in fall when coho are returning. Conditions prevented location of carcasses in sufficient numbers to evaluate hatchery contributions.* *Hatchery water control systems were finally modified in 2013 in order to conduct thermal marking of otoliths. However, thermal marking of hatchery coho proved to be infeasible due to a lack of warm water during incubation. Warmer surface water from Tamgas Lake was no longer available late in the season after coho are spawned. Coded wire tags might be used if significant numbers of coho carcasses could be sampled*		

	although sampling power would be low because only about 2% of hatchery coho are marked. *In the interim, Tamgas Hatchery has identified an appropriate party to conduct a third party evaluation of hatchery effectiveness in minimizing the potential for hatchery impacts on wild coho populations. This evaluation is being undertaken in concert with development of a comprehensive hatchery enhancement plan for the AIR. The assessment team found that this was acceptable progress and that the report and subsequent management recommendations being implemented would be checked at the re-certification audit. The fishery will close this condition by having a third party conduct an evaluation of hatchery effectiveness in minimizing the potential for hatchery impacts on wild coho populations. This evaluation is being undertaken in concert with development of a comprehensive hatchery enhancement plan for the AIR.*
Status of condition	*Open and on target.*

Condition 11			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	1.3.3 Chum	**Sufficient relevant information is available on the contribution of enhanced fish to the harvest and escapement of the wild stock.** **The assessment includes estimates of the impacts of enhancement activities on wild stock status, productivity and diversity.**	**65**
Condition	*By [the 2015 fishing season], initiate a sampling program to obtain information sufficient to estimate the significance of enhanced fish to escapement, status, productivity and diversity of wild fall chum.*		
Milestones	*Annually once sampling begins.*		
Client action plan	*This condition will be met by taking otoliths out of chum carcasses in the streams and having them read to determine their origin. This will determine if there is mixing of enhanced and wild salmon in the streams on AIR.* *Tamgas Hatchery now works with SSRAA, sampling a portion of AIR Chum for thermal markings. ADF&G may also read otoliths.*		
Progress on Condition Year 4	*This condition identifies the need for information adequate to assess the hatchery contribution to naturally-spawning fall chum populations. Changes in the fall chum program (elimination) have reduced the risk of local hatchery production to wild populations within the reserve. Other hatchery fall chum production programs in the region which might potentially stray into local streams (Piston and Heinl 2011). The current action plan calls for marking of Tamgas summer chum production but marking is for harvest stock composition estimates (Condition 5) rather than escapement assessments. Because of the elimination of the fall chum hatchery production and the non-overlap of fall and summer chum run timing, the action plan was previously revised to remove reference to summer chum marking. The summer chum marking requirement is more appropriately covered in Condition 5.* *This stream sampling is now focused on non-local hatchery strays. Piston and Heinl (2011) have documented large-scale thermal marking of hatchery chum throughout southeast Alaska and successful efforts to sample for straying of these fish based on spawning ground carcass surveys. Sampling of returning fall chum spawners to collect otoliths and determine if hatchery fish from other areas stray into local streams was scheduled to be implemented beginning in 2012. However, initial plans to collect otoliths by sacrificing fish were reconsidered due to the potential impact on spawning escapement.* *Chum carcass sampling was conducted in 2014. The purpose of the sampling was to*		

	identify strays from other hatcheries. Carcass sampling for otolith collection occurred in 2014 during normal spawning ground surveys to evaluate the feasibility and effort required. Sampling will continue in 2015 when the first returns of otolith-marked (age 2) chum salmon are expected. Timeline requirements were redefined until post the 2015 spawning season and will be checked by the CAB at the re-certification audit. This condition will remain open through into the re-assessment due to the biology of chum salmon requiring 2 years at sea and the delays in hatchery marking caused by issues with hatchery plumbing delaying thermal otolith marking until 2013.
Status of condition	*Open and on-target.*

Condition 12			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	1.3.3 Coho	**Sufficient relevant information is available on the contribution of enhanced fish to the harvest and escapement of the wild stock.**	**70**
Condition	*By [the re-assessment meeting], initiate a sampling program to obtain information sufficient to estimate the significance of enhanced fish to escapement, status, productivity and diversity of wild coho populations on the AIR.[timeline adjusted in 2015]*		
Milestones	*Annually once sampling begins.*		
Client action plan	*This condition will be met by monitoring and documenting hatchery origin Coho. They will be identified from wild fish by missing adipose fins, coded wire tags or thermal marking. Increases in the number of marked coho will begin this year (2011) and mass thermal marking will begin the following year. An analysis will be conducted to determine hatchery fish significance to escapement of wild Coho.*		
Progress on Condition Year 4	*This condition identifies the need for information adequate to assess the hatchery contribution to naturally-spawning coho populations. This assessment is proving to be problematic. First, sampling adult coho in streams has proven difficult. Stream surveys have been explored but coho are difficult to observe because they return later in the year after fall rains have appreciably increased stream flows and turbidity. Coho are widely distributed in relatively low densities and spawn over an extended period of time, making carcasses difficult to find for sampling. Similar problems have been encountered in coho assessments throughout SEAK.* *In 2013, stream surveys were concentrated in streams near the hatchery where hatchery-origin coho would be most likely to occur in significant numbers. No coho concentrations were observed but streams in the vicinity of the hatchery are very small and may not be representative of significant coho production areas in other areas of the island. Juvenile salmonid surveys were initiated in 2013 to identify significant coho production streams on Annette Island.* *It must also be possible to distinguish whether coho are of hatchery or wild origin for the returning adults. Marking of a sample of the coho produced at Tamgas and other SE AK hatcheries with coded wire tags and by removal of the adipose fin provides a means of evaluating hatchery stray rates. However, because not all hatchery fish are marked, limited sample sizes of returning adults can make hatchery fractions difficult to estimate. Otolith marking of coho hatchery production would increase sampling power to estimate hatchery proportions if carcasses are available. However, marking of Tamgas hatchery coho has proven to be ineffective due to a lack of warm water during coho incubation.* *The propensity of Tamgas Hatchery to stray long distances can be assessed by the occurrence of CWT fish in hatchery or natural coho escapements in monitoring systems in other areas of SE AK. Tag recoveries of Tamgas Hatchery coho are reported through the state tag reporting system. The database has been queried to determine the*		

	distribution of Tamgas fish. Most of the recovered CWTs at Tamgas Creek hatchery are from Tamgas Creek (70.5%) followed by Neets Bay Hatchery (11.0%), Witman Lake hatchery (9.2%) and Deer Mountain hatchery (8.5%). A small number of tags have been recovered from other hatcheries as well. Additionally, Tamgas origin CWTs have been recovered at Deer Mountain hatchery and Witman Lake hatchery as well as a few others in SE AK. Whether this level of straying is affecting wild populations is still being evaluated (MIC 2015). *Tamgas Hatchery has identified an appropriate party to conduct a third party evaluation of hatchery effectiveness in minimizing the potential for hatchery impacts on wild coho populations. This evaluation is being undertaken in concert with development of a comprehensive hatchery enhancement plan for the AIR. The fishery will close this condition by having a third party conduct an evaluation of hatchery effectiveness in minimizing the potential for hatchery impacts on wild coho populations. This evaluation is being undertaken in concert with development of a comprehensive hatchery enhancement plan for the AIR.*
Status of condition	*Open and on target.*

Condition 16			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	2.4.1 Coho and Sockeye	**The enhancement activities are highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.**	**70**
Condition	*By the 3rd annual surveillance, demonstrate that enhancement activities are highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm to Coho and sockeye salmon or implement a strategy for reducing harm.*		
Milestones	*Annually.*		
Client action plan	*This condition will be met by allowing escapement past the weir timed and equivalent to at least historical levels based on the Biggs, 1981 survey (see reference section).*		
Progress on Condition Year 4	*The requirement of this condition was revised to clarify that it refers to both coho and sockeye impacted by a lack of passage at the Tamgas Hatchery weir. Sockeye had been previously treated under condition 3 (PI 2.1.1, See 2012 surveillance audit report (SCS 2012)) but habitat impacts of enhancement operations are more appropriately considered here. This clarification does not change the terms of the conditions. It does allow for closure of condition 3 based on fishery effects but precludes closure at this time of this condition 16 based on habitat effects.* *To address this condition, approximately 190 adult coho salmon were passed in 2013 and 2014 into the Tamgas system upstream from the hatchery weir to spawn naturally in suitable habitat upstream. Coho are currently diverted at the weir into adult holding ponds at the hatchery where they are subsequently spawned for hatchery broodstock or sold for cost recovery. Historically, anadromous fish were not allowed to pass upstream in order to avoid introduction of pathogens into the hatchery water supply. However, coho disease transmission is much less a concern for the hatchery program than is disease transmission from other species such as sockeye. Coho are much less prone to IHN viral infection than are sockeye. Releases match the normal run timing of coho. Similar releases are planned annually in the future.* *Similar releases of sockeye are not planned. After considering the pros and cons of restoration of naturally-producing Tamgas Creek sockeye, the MIC have elected to not pursue remediation for this population due to hatchery fish health risks.* *Passage of coho salmon represents a substantive step in addressing this condition and the significance of this action by the MIC to restore a natural production of coho in the*		

	Tamgas system is recognized. Hatchery risks of sockeye restoration upstream from the weir are also appreciated and acknowledged by the surveillance team. However, satisfaction of the condition under this indicator is predicated on the likelihood that enhancement activities do not reduce habitat structure and function to a point where the salmon species management units are not harmed. Because hatchery weir operation has practically reduced the number of sockeye population components in the AIR sockeye species management unit by half, this condition has not been completely addressed. *The condition may be closed relative to coho, but not for sockeye. Tamgas Hatchery has identified an appropriate party to conduct a third party evaluation of alternatives for in-place or in-kind mitigation alternatives for the impacts of hatchery weir operations on natural production of sockeye in the Tamgas system. This evaluation is being undertaken in concert with development of a comprehensive hatchery enhancement plan for the AIR. The team found this to be acceptable and adjusted the timeline to coincide with the re-assessment onsite meetings.*
Status of condition	*Open and on target for sockeye. Closed for coho. Score remains 70.*

Condition 17			
Performance Indicator(s) & Score(s)	**Insert relevant PI number(s)**	**Insert relevant scoring issue/ scoring guidepost text**	**Score**
	2.4.2 Coho and Sockeye	**There is a partial strategy in place for managing the impact of the fishery and enhancement activities on habitat types, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.** **There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or habitats involved.**	**70**
Condition	*By the 3rd annual surveillance audit, demonstrate if necessary, that there is a partial strategy in place for managing the impact of the fishery and enhancement activities on habitat and some objective basis for confidence that the partial strategy will work.*		
Milestones	*N/A*		
Client action plan	*This condition will be met by allowing escapement past the weir timed and equivalent to at least historical levels based on the Biggs, 1981 survey (see reference section).*		
Progress on Condition Year 4	*See Condition 16 conclusion. Condition has been met for Tamgas coho but not for Tamgas sockeye.*		
Status of condition	*Open and on target for sockeye. Closed for coho. Score remains 70.*		

5. Conclusion

Although there are six conditions that remain open after the 4th annual audit, it is still SCS's view that Annette Islands Reserve salmon fisheries generally continue to meet the standards of the MSC and to comply with the 'Requirements for Continued Certification.' SCS recommends the continued use of the MSC certificate through to at least the re-assessment onsite meeting when conditions will be re-evaluated. A total of 16 of 22 conditions have been closed. No conditions were closed in the 2014 audit but the Metlakatla Indian Community has addressed the behind target conditions with

corrective actions to be checked after the current fishing season or the re-assessment onsite meeting.

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Appendix 1. Background information on the Fishery and Hatchery Operations

1 General background about the fishery

1.1 Location and History of the Fishery

Annette Islands Reserve (AIR) is located in extreme Southeast Alaska, just south of Ketchikan, Alaska and less than 20 miles north from the Canadian/US border (**Figure 1**). AIR includes Annette, Ham, Walker, Lewis, Spire, and Hemlock Islands. AIR is unique in that it is the only fishery managed by indigenous peoples in Alaska. Settled in 1887 by Tsimshian peoples from what is now British Columbia, the Reserve was established by US presidential proclamation on 3 March 1891. The reserve has management authority over waters 3,000 feet from the shoreline at mean low tide. All waters bordering this concession are subject to the management of the Alaska Department of Fish and Game.

Figure 1. **Map of Annette Islands Reserve (dashed line is approximate boundary).**

1.2 Target Fish Stocks & Harvests

The fishery occurs from May through October. Pink salmon comprise the majority of the harvest, followed by chum, coho, sockeye, and Chinook based on recent average numbers (**Table 3**). Harvest typically averages approximately 1.1 million salmon including 900,000 pink, 125,000 chum, 40,000 coho, 21,000 sockeye, and 1,900 Chinook. Average harvests increased from 300,000 per year prior to 1980 to 1.3 million per year since 1981. Harvest has fluctuated from about 0.5 million to 2.9 million salmon per year over the last 30 years. A peak harvest of 2.9 million salmon was observed in 2013.

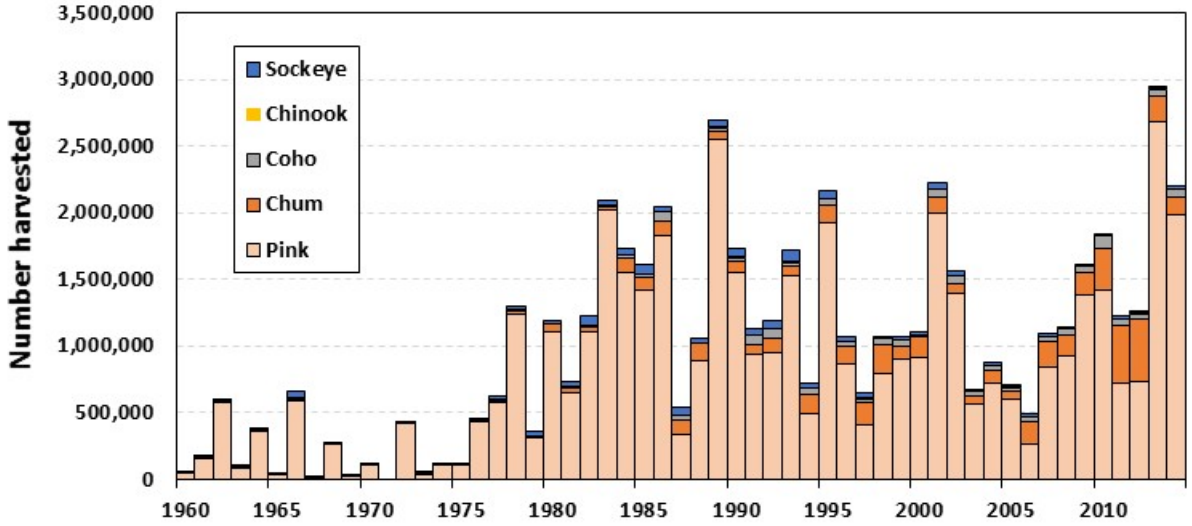

Figure 2. Annual harvest of salmon by species in the Annette Island fishery.

Salmon harvests in the AIR comprise just 2% on average of the annual total by fish number for Southeast Alaska commercial fisheries (Tingley and Davidson 2011). Species-specific shares averaged 2% of pink, 2% of sockeye, 1% of coho, 1% of chum, and <1% of Chinook salmon.

Table 1. Annual salmon harvest by as number of fish per species in the Annette Islands fishery.

Year	Pink	Chum	Coho	Chinook	Sockeye	Total
1960	45,409	3,796	2,387	0	1,753	53,345
1961	157,046	8,648	5,740	0	9,949	181,383
1962	579,917	6,911	3,975	0	7,489	598,292
1963	88,145	2,282	1,688	0	4,194	96,309
1964	356,697	12,301	6,960	0	11,445	387,403
1965	33,883	248	2,280	0	3,359	39,770
1966	588,680	7,308	16,144	0	45,310	657,442
1967	6,949	323	374	0	3,170	10,816
1968	258,722	4,281	1,956	122	4,129	269,210
1969	29,238	258	400	0	970	30,866
1970	102,907	1,387	2,499	0	2,947	109,740
1971	0	0	0	0	0	0
1972	416,701	5,290	4,706	149	8,178	435,024
1973	41,692	226	324	25	1,118	43,385
1974	109,053	375	1,006	15	2,615	113,064
1975	108,400	1,306	570	3	622	110,901
1976	436,421	3,810	1,354	45	5,022	446,652
1977	575,077	15,208	12,126	74	27,798	630,283
1978	1,235,444	25,605	8,671	197	23,619	1,293,536

Year	Pink	Chum	Coho	Chinook	Sockeye	Total
1979	308,234	16,437	5,649	339	31,345	362,004
1980	1,105,482	57,064	5,263	180	23,734	1,191,723
1981	653,409	30,312	7,839	301	37,528	729,389
1982	1,102,077	40,362	14,312	838	70,317	1,227,906
1983	2,017,294	24,237	17,498	367	32,478	2,091,874
1984	1,556,298	104,951	25,125	7	49,740	1,736,121
1985	1,424,695	86,916	30,849	713	67,946	1,611,119
1986	1,823,069	112,679	75,384	121	36,510	2,047,763
1987	338,763	109,029	35,790	565	54,186	538,333
1988	890,272	127,711	8,681	941	30,979	1,058,584
1989	2,550,624	65,415	23,870	892	50,496	2,691,297
1990	1,546,186	84,519	35,104	1,840	59,644	1,727,293
1991	933,309	82,102	63,146	4,015	45,130	1,127,702
1992	954,756	102,290	71,282	1,210	61,169	1,190,707
1993	1,521,934	75,489	32,690	639	95,063	1,725,815
1994	498,031	136,341	48,900	230	41,615	725,117
1995	1,925,156	133,380	51,452	133	55,503	2,165,624
1996	867,799	126,294	42,044	243	29,859	1,066,239
1997	410,054	166,573	30,846	505	41,365	649,343
1998	839,436	216,283	38,464	297	16,520	1,111,000
1999	853,296	99,922	49,337	743	21,987	1,025,285
2000	864,828	156,315	3,899	4,700	22,286	1,052,028
2001	1,888,938	125,861	56,510	4,350	40,153	2,115,812
2002	1,302,825	68,766	66,865	2,206	30,321	1,470,983
2003	480,747	55,512	39,411	775	7,546	583,991
2004	671,637	100,604	30,910	1,910	31,349	836,410
2005	493,340	58,092	35,257	1,701	12,915	601,305
2006	276,194	173,956	30,472	752	22,106	503,480
2007	828,819	192,001	34,662	1,209	19,413	1,076,104
2008	923,364	161,914	48,990	689	5,834	1,140,791
2009	1,387,837	160,564	49,690	1,028	14,673	1,613,792
2010	1,327,205	313,618	85,055	936	14,769	1,741,590
2011	717,914	441,420	42,258	1,642	28,767	1,232,001
2012	733,075	469,391	42,410	1,580	21,967	1,268,423
2013	2,684,987	190,360	52,875	1,476	11,125	2,940,822
2014	1,989,953	130,854	52,499	1,447	27,789	2,196,542

Courtesy (Oliver 1992, Tingley 2008, Tingley and Davidson 2011, MIC unpublished data).

1.3 Seasons

The salmon season for gillnet and purse seine fisheries typically extends for four months from the second week of June (statistical week 24 or 25) through mid-October (statistical weeks 40-42). The July opener is typically limited to gillnets. Seine openers typically begin around the first week of August. Earlier openers occurred in 2009 and 2010 but only one boat participated.

The commercial season is managed in the early summer, late summer, and fall seasons. The early summer season harvests Chinook, sockeye, and summer chum from early June through mid-July (roughly statistical weeks 24 to 29). A two- or three-week period of transition occurs in late July between early summer and late summer components to account for the differences in run timing of sockeye and pink salmon from year to year (weeks 30 to 32). The late summer season from August into early September (weeks 32 to 36) traditionally targets pink salmon except in years of poor market conditions. The fall season targets chum and coho from early September through mid-October (weeks 37-42).

Under an average annual fishing schedule, about 64 gillnet days and 32 purse seine days are open per year during the 5 months from June to October. Fisheries may be opened on alternative days or scheduled at different times on the same days. Several fishing days are typically open per week. The gillnet fishery typically begins with three or four days open per week and increases to 5 days per week at the peak of the run. Fall gillnet openers are typically limited to 2 or 3 days per week. Minimum mesh size restrictions are used in the gillnet fishery during late summer and early fall seasons – large mesh is employed to avoid pink salmon and target coho.

A Troll fishery also operates but effort is very low (<1% of total salmon catch). The troll fishery used to target Chinook salmon, but effort has dropped off in recent years. Now most Chinook (80%) are caught by gillnet.

Fishery openers and seasons are managed in-season based on run strength and escapement monitoring. Catches in state-managed fisheries in near-by areas are also evaluated through the state system for indications of run strength. Tribal fishery managers typically attempt to match seasons with the state (e.g. close when the state is closed). Closures of all or part of a fishery have occurred. In-season management interactions with the State are conducted through informal working relationships. If there is a concern with escapement, Alaska Department of Fish & Game (ADF&G) commercial fishery managers will call the tribe to request restrictions. Tribal Fisheries Managers typically match restrictions to state fisheries.

1.4 Areas

Fisheries occur throughout the AIR but much of the effort is concentrated in Port Chester and outside of Tamgas Bay to target hatchery fish returning to areas of release after acclimation in the hatchery or net pens at Port Chester and Tamgas Bay (**Figure 1**). Fisheries also occur along the capes on the front and south sides of the island using gillnets and purse seines primarily to access pink and chum stocks returning to areas outside the reserve. Fish movement patterns past the island are typically south to north (especially for chum salmon) but can vary from year to year. Closed areas are often established around creek mouths to protect escapement. The commercial fishery is also typically closed inside Tamgas Bay although the hatchery operates a cost recovery fishery in the bay for Chinook and sometimes coho.

1.5 Processing & Catch Accounting

All fish caught on Annette Islands Reserve must be sold to Silver Bay – Metlakatla (formerly Annette Island Packing Company (AIP) unless refused by the company or used for subsistence. The processing

facility, located in Metlakatla, is jointly operated by Silver Bay Seafoods and the Metlakatla Indian Community.

The fishery is managed for high quality catch. Daily deliveries are required. All catch is iced on the vessels with ice provided by the processor. Fisheries are typically closed when fish quality, as identified by the processer, declines later in the season. Fishery openers were historically managed in part based on processor capacity. Fisheries, particularly the seine fishery, were opened and closed as needed for efficient operations at the packing company.

Prior to the partnership with Silver Bay Seafoods beginning in 2014, gillnet landings were generally processed in Metlakatla while purse seine catches of pink salmon are often delivered to tenders in Port Chester and transported to Ketchikan for processing. With upgrades in capacity at the Metlakatla plant, all AIR catch is now processed locally. Plant capacity has been increased from 110 to 200 thousand pounds per day. This increase in processor capacity is expected to reduce the need for capacity-based fishery restrictions when large numbers of fish are available.

Landings are monitored and reported through fish tickets that are picked up daily at the processor during the fishing season. Harvest and tag recovery data is currently reported daily and shared through the Alaska state system. Tag recovery data is sampled in a representative random fashion. Fishery data including species, gear type, area, poundage, and amount paid to fisherman is provided to the ADF&G commercial fishery database at the end of each salmon season by processing Company. ADF&G uses this data to estimate hatchery contributions to common property fisheries for cost recovery purposes. Estimates are based on a combination of production, time, area, and mark sample data and assumptions (White 2010). State commercial fisheries contribute 3% of landed value back to the state, a portion of which is distributed among regional hatchery programs. The Metlakatlas do not pay this tax or receive revenue from this source. Annette Islands Reserve hatchery fish are harvested by other regional fisheries without compensation, but Annette Islands Reserve fisheries also harvest hatchery fish produced elsewhere.

Subsistence harvest by commercial fishers was historically accounted for in end-of-season questionnaires filled out by a sample of fishers. A fishing log system was implemented beginning in 2011 to estimate retained species, by-catch and endangered species. Fishers are required to turn in logs weekly prior to receiving payment for their catch. Log book data indicates that bycatch rates are very low and consist primarily of the common spiny dogfish (*Squalus suckleyi*). More than 2,500 trips were logged for the 2014 salmon season.

1.6 Enhancement

Hatchery enhancement of AIR fisheries is significant, as is the case in many southeast Alaska fisheries. The MIC has operated a hatchery program on Annette Island since 1977at Tamgas Creek downstream from Tamgas Lake (**Figure 1**). The facility is located seven miles south of Metlakatla on the shore of Tamgas Harbor. Facilities include an incubation/early rearing building, outside raceways, and rearing ponds.

In order of production goals, Tamgas hatchery produces summer chum, coho, and Chinook (king) salmon. Pink salmon and steelhead are not produced in the hatchery. Production of fall chum salmon at the Tamgas Hatchery was discontinued in 2011 as this program was shifted to summer chum in order to enhance early season fishing opportunity. Discontinuing the fall chum production helps insure that there is not competition between hatchery and wild fall chum salmon returning to AIR streams.

Currently, a weir is operated in Tamgas Creek to divert returning spawners into holding ponds at the hatchery for use as broodstock. A small dam at the mouth of Tamgas Lake is also a partial upstream passage barrier. Salmon are not passed upstream of the weir in order to protect the hatchery water source (Tamgas Lake) from pathogens that might cause disease outbreaks in the hatchery. A block net can also be suspended from pilings in the bay at the mouth of the creek to control escapement of hatchery fish into the stream and adult collection facility and to protect staging fish from pinniped predation. Hatchery spawning operations are conducted throughout the summer and fall on the various hatchery runs (Chinook, summer chum, sockeye, and coho). Spawning is spread throughout the run (typically over a 30 day period twice a week). Broodstock number targets involve spawning as many males as possible with females based on egg take capacity.

Production is released directly from the hatchery via net pens in Port Chester and Tamgas Bay. Net pens are used to acclimate and attract fish to return to release sites in order to provide enhancement for local fisheries. Returning fish typically mill in these areas where they may be targeted with intensive terminal fisheries. Returning fish are typically harvested from salt water rather than in the hatchery trap due to fish quality and price issues. Acclimation activities were reported to have little or no impact on wild fish rearing in these habitats. Pens are reported to attract salmon predators. Significant numbers of residualized coho or Chinook were not reported in the area of the acclimation sites which were also removed from significant natural production areas where residualized fish might attempt to spawn. No other significant natural production streams are present in Tamgas Bay.

Hatchery monitoring includes catch composition in the fisheries and adult returns (brood, cost recovery), and annual survival estimates. Size and age data from the hatchery return is used for planning forecasts. Much of this information is maintained by the hatchery but not otherwise formally reported. Information is reported in the MIC annual salmon management plan and in a post season report. Hatchery numbers are also reported in the regional ADF&G enhancement report. Monitoring of catch to determine origin takes place by sampling for coded wire tags and adipose fin clips for coho, sockeye and Chinook and checking otoliths for thermal marks for chum. Marking studies are done in conjunction with SSRAA's thermal marking program.

Table 2. Annual salmon production from Tamgas Hatchery.

Brood year	Chinook	Chum	Coho	Pink	Sockeye	Steelhead	Total
1978			46,500				46,500
1979		200,000	237,696				437,696
1980		483,918	339,929	2,009,700			2,833,547
1981		341,192	530,000		372,500	11,341	1,255,033
1982	48,000	1,318,512	466,770	3,465,000		10,504	5,308,786
1983	461,248	2,000,000	2,257,500	2,700,170		13,200	7,432,118
1984	574,000	4,351,200	3,505,000	1,200,000			9,630,200
1985	3,001,100	1,328,000	3,296,150	2,200,000			9,825,250
1986	2,111,700	3,722,600	11,927,395	1,046,080			18,807,775
1987	2,644,392	3,531,041	6,940,108	1,038,276			14,153,817
1988	1,243,708	27,747,739	3,283,480	2,932,000			35,206,927
1989	1,392,108	4,020,733	5,398,412	4,340,000			15,151,253
1990	1,297,834	1,499,032	6,162,047	5,437,000			14,395,913
1991	625,599	2,147,000	3,599,198	525,000			6,896,797
1992	1,252,000	6,440,000	3,208,062	1,250,000			12,150,062
1993	1,138,560	4,157,450	3,485,450	1,944,840			10,726,300
1994	578,245	1,566,005	3,976,091	190,000			6,310,341
1995	1,345,719	1,545,219	3,879,884	0			6,770,822
1996	720,329	1,000,000	3,517,912	0			5,238,241
1997	501,171	330,000	3,087,889	0			3,919,060
1998	485,583	450,000	3,403,319	0	7,882		4,346,784
1999	471,581	1,222,218	3,161,810	0	7,838		4,863,447
2000	731,555	262,000	2,089,033	0	56,856		3,139,444
2001	636,400	773,000	2,007,210	0	968		3,417,578
2002	569,702	3,100,848	1,994,310	0	44,095		5,708,955
2003	327,250	4,761,000	2,056,530	0	100,357		7,245,137
2004	527,000	4,719,382	2,014,083	0	159,161		7,419,626
2005	363,418	7,527,581	2,110,872	0	0		10,001,871
2006	218,192	5,918,958	1,746,800	0	0		7,883,950
2007	411,639	5,968,414	1,296,708	0	80,000		7,756,761
2008	296,980	10,200,000	1,789,645	0	0		12,286,625
2009	138,042		2,640,000	0	0		2,778,042
2010	250,000	5,560,000		0	0		5,810,000
2011	250,000	5,560,000	2,640,000	0	0		8,450,000
2012	299,667	1,821,417	2,640,000	0	157,000		4,918,084
2013	350,000	8,200,000	2,300,000	0	0		10,850,000
2014	367,000	11,000,000	2,544,000	0	0		13,911,000

1.7 Ecosystem

1.7.1 Retained Species

Salmon fisheries in Alaska typically have low bycatch rates of non-salmonids. This is supported by fish tickets and survey data collected by the processing plant. Only steelheads (*Oncorhynchus mykiss*), sockeye (*O. nerka*) and Pacific halibut (*Hippoglossus stenolepis*) are retained and sold on AIR. Neither Pacific halibut nor steelhead comprises 5% or more of the total catch by weight and are less than 0.5% of the catch by weight or number of fish. In addition, populations of both steelhead and halibut appear to be healthy (Henry et al, 2012; and ADFG 2012) the AIR salmon-directed fishing operations constitute a very small fraction of the total catches of these species in the region. The fishery does intercept sockeye salmon that originate from SE Alaska as well as from Annette Island itself. Throughout Southeast Alaska, sockeye harvest was above average and escapement goals for most sockeye runs were met in 2015 (Gray et al. 2015; Munro 2015). Regulations include fishing seasons, gear restrictions and seasonal closures to ensure that escapement goals are reached. Sockeye are a main retained species in the pink, coho and Chinook fisheries.

1.7.2 Non-retained Bycatch Species

The bycatch rates are usually very low in the Alaskan salmon fisheries due to gear and seasonal selectivity. The AIR salmon fishery is no exception. Bycatch that are released include spiny dogfish, juvenile pollock, cod, wolf eel and birds (usually gulls or surf scoters). Historically surveys were conducted post-season to estimate bycatch composition and levels. More recently AIP is requiring fishers to fill in a bycatch log that must be completed and returned for every trip. Logs must be turned in weekly in order to be paid by the processor. Logbook data indicates that spiny dogfish (*Squalus suckleyi*) and surf scoters (*Melanitta* sp.) were encountered at low levels. Fishers will actively avoid spiny dogfish as they tend to damage fishing gear at cost to the fishers. For instance, night time salmon fishing does not occur because of large catches of spiny dogfish after dark. Risks to non-retained bycatch species are considered very low.

1.7.3 Endangered, Threatened and Protected (ETP) Species

ETP species are those that are recognized by national legislation and/or binding international agreements to which the jurisdictions controlling the fishery under assessment are party. The Assessment Team considered any species that is listed as endangered and protected by the US Endangered Species Act as well as any species listed on the Convention on International Trade in Endangered Species (CITES) list to be an ETP species. Seals and whales are protected under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA) and are the only ETP species that the AIR salmon fisheries potentially interact with. A variety of other salmon and steelhead species are listed under the ESA. Several Canadian salmon stocks have been identified as stocks of concern although no Pacific salmon have yet been designated under the Canadian Species at Risk Act (SARA). However, other listed or designated salmon and steelhead either do not occur in AIR waters or are not affected by AIR fisheries. Incidental take of ESA listed salmon species in Southeast Alaska fisheries is regulated by consultations with the National Marine Fisheries Service (NMFS). No ETP species were reported as encountered in the 2014 season. Risks to ETP species are considered very low.

1.7.4 Habitats

Salmon fishing gear typically has little contact with the bottom substrate. All salmon gear is usually used off the ocean floor so there is little contact with the sea floor or rocky habitats. Contact with the bottom would lead to gear loss or entanglement, which could be costly to fishers. Purse seines and drift gill nets are often fished in waters deep enough to avoid contact with the substrate in order to protect nets. In some areas, purse seines and drift gill nets are fished in relatively shallow waters

and do contact the bottom. In these areas, substrates are typically soft rather than hard rocky bottoms that would ensnare the nets.

1.7.5 Ecosystem

Due to their unique life cycle, the salmon ecosystem includes rivers and streams as well as oceans and terrestrial grounds in vast areas adjacent to both the Bering Sea and the whole North Pacific Ocean. Anadromous salmonoid adults return to freshwater streams where they stop feeding, spawn and die. After a few months, young emerge and depending on the species of salmon spend up to 2 years in freshwater habitats before migrating to the ocean. They remain in the ocean for 1 to 7 years before returning to the freshwater habitat to complete the life cycle (Groot and Marogolis 1991).

Wilson et al. (1998) demonstrate that nutrients derived from salmon carcasses (after spawning in the rivers and streams) have a significant impact on freshwater communities as well as those communities in the freshwater to terrestrial interface. The flux of salmon biomass entering fresh water from the ocean can be massive (e.g. 5.4×10^7 kg) (Gende et al. 2002).

There is some evidence that high salmon abundances in the ocean, due to the release of hatchery reared juveniles, may have possible adverse effects on wild salmon populations due to competitive interactions among wild and hatchery salmon in the North Pacific Ocean (Peterman 1991). Ocean growth of pink salmon has been shown to be sometimes inversely related to their own abundance and survival of chum, Chinook, and sockeye appears to be reduced in years of high pink salmon abundance (Ruggerone et al. 2003, Ruggerone and Goetz 2004, Ruggerone and Nielsen 2004, Ruggerone et al. 2005). Increases in salmon abundance since the early 1970s have occurred due to increases in chum, sockeye, and pink salmon populations throughout Alaska, Russia, and Japan. In some regions like Japan, southeastern and central Alaska, hatchery reared salmon contribute substantially to the adult abundance (Ruggerone et al. 2010). It is estimated that in southeastern Alaska hatchery reared chum salmon represents more than 55% of the total adult abundance. There is widespread concern within the scientific community regarding the ocean carrying capacity for pink and chum salmon. However, the contribution of the Tamgas hatchery production to the overall abundance of salmon in the North Pacific is very small and hatchery production for pink was stopped in 1994.

1.8 Management System

Annette Islands Reserve was granted to a group of Tsimshian Indians originally from Metlakatla, British Colombia by the U.S. Congress in 1891 ("An Act to Repeal Timber-Culture Laws", section fifteen of March 3, 1891, 26 stat., 1101) following an 1887 petition from a minister of the English Church Missionary Society of England that petitioned congress for land in which to move. Management authority for local waters was established on April 28th, 1916, when President Woodrow Wilson proclaimed the “waters within three thousand feet from the shore lines at mean low tide of Annette Island, Ham Island, Walker Island, Lewis Island, Spire Island, Hemlock, and adjacent rocks and islets located within the area segregated by the broken line upon the diagram hereto attached and made a part of this proclamation(2), be reserved for the Metlakatlans to fish subject to the laws and regulations of the United States.” This fishery management authority has been clearly established by the Courts on numerous occasions.

Pursuant to this authority, salmon fisheries in the Reserve are managed by the Council, the governing body of the Metlakatla Indian Community, in conjunction with the Bureau of Indian Affairs (BIA). The Council establishes general fishery regulations that are approved by the BIA. Fishery Laws and Regulations have been developed by the Council taking in consideration of Title 25 Code of Federal Regulations Part 241, Indian Fishing in Alaska. The State of Alaska does not approve or review annual tribal management plans. Annual management plans are provided to the State for information purposes and fisheries and the MIC considers State regulations, fish runs and fisheries in developing a management plan but the MIC is responsible for the basis of management decisions.

MIC fisheries are consistent with the Pacific Salmon Treaty between the U.S. and Canada as implemented through the Pacific Salmon Commission. The Pacific Salmon Treaty was signed in 1985 with the intent of limiting harvest of Columbia River fish in Canada and Alaska, and harvest of Fraser River fish in United States waters. In May, 2008 the Pacific Salmon Commission recommended a new bilateral agreement for the conservation and harvest sharing of Pacific salmon to the Governments of Canada and the United States. The new fishing regimes are in force from the beginning of 2009 through the end of 2018. This agreement obligates U.S. domestic management entities to manage fisheries under their respective jurisdictions to regulate catch or mortality levels so as not to exceed specified levels.

1.8.1 Season Management

An annual fishery management plan is adopted with resolution of the tribal council. The tribal council is an elected body. Much of the council work on fisheries is addressed by a Natural Resources Committee. The management plan establishes fishery start and end dates, and identifies an expected weekly fishing schedule by gear based on expected stock assessment, harvest rates, and escapements. The management plan also considers State of Alaska Fish and Game stock assessments and escapements, and references state regulations. The adopted management plan is forwarded with a letter to the BIA. The BIA reviews the management plan and provides a letter of intent and authorization. Hatchery plans are also prepared by a hatchery advisory committee consisting of hatchery and fish program staff. Hatchery plans are reviewed by the Council's Natural Resources Committee.

In-season management of the salmon fishery is overseen by the Fisheries Management Board (FMB). The FMB consists of two voting members and supporting biological staff. One voting member, the Metlakatla Indian Community Mayor, represents the Community and the second voting member represents the BIA. Disagreement between the two voting members of the FMB would trigger an appeal process to the BIA supervisor of the BIA fishery representative. However, this appeal process is rarely, if ever, needed.

The FMB meets bi-weekly to determine opening and extensions of weekly fish openings and closings. Meetings are usually held: 1) at the end of each week to evaluate the fishery and establish schedules for the following week of fishing, and 2) midweek to consider adjustments to the current week's schedule. This Management Board also has the authority to have special harvest openings outside the normal commercial salmon openings. These openings could include special Hatchery Harvest Openings, Subsistence Openings, etc. MIC Fisheries staff provides in-season data on catch and escapement. Staff also provides support to process in the form of recommendations. The FMB generally adheres with staff recommendations.

Fisheries are managed in-season based on escapement levels. Fisheries are restricted or liberalized based on observed escapements relative to weekly goals based on historical run patterns. Management also compares weekly harvest levels to historic harvest levels. Should the CPUE (historical) be lower than the weekly catch, Fish and Wildlife recommends to the fisheries board to lower the amount of days to fish, and recommends gill net size restrictions to select for certain species. Time and area closures may be enacted to protect specific streams. Complete fishery closures have occurred in some years. Fisheries on the back side (eastern side) of the Island have been shut down in some years when run timing was late. Other closures have occurred in dry years when low water flows triggered significant pre-spawn mortality.

FMB meetings are informal and open to the public. Fishers also participate in the process through Natural Resources Committee meetings of the tribal council process.

Weekly fishery openings are publicized with weekly fisheries announcements issued by the FMB. This announcement also specifies what areas are open or closed and what size nets can be used during the fishery. The Fisheries Announcement is delivered to Processing Company, and an announcement is made over the VHF radio throughout the day.

Annual fishery reports are prepared post-season utilizing the catch and escapement reports prepared by fish program staff and provided to the council (and subsequently to the natural resources committee). Post season assessments are made by the BIA, identifying problems and making recommendations for the next year.

1.8.2 Monitoring

Fishery harvest is reported daily and submitted to the ADF&G system where results are available in real time. MIC fisheries are required to make daily deliveries. Transport of catch outside of the reserve requires a limited entry permit from the state. This provides a high level of control and accountability for harvest. Management is typically based on numbers of fish but the processer manages based on poundage. The processor reports both numbers and weight (translating poundage to numbers based on average weights). Species composition, size, age, and mark data is also collected from the catch and available in real time. These data are used to gauge expected survival and returns (survival is generally correlated with larger average fish size.) Catch composition reflects gear type. Average weight and sex information is monitored by gear type.

1.8.3 Research

Research is generally focused on monitoring and evaluation. Management programs are reviewed annually based on new fishery and escapement data. The enhancement program involves extensive experimentation, data collection and analysis to guide the development and refinement of effective practices. More formal fish and fishery research projects are periodically undertaken. Research goals are described in the Research and Monitoring Plan.

1.8.4 Enforcement

Fishery enforcement is conducted via the tribal police. This is a certified police agency. Staff includes dedicated fish and wildlife enforcement officers. A wildlife enforcement officer provided by Metlakatla Police Department provides enforcement for all fisheries on and around the Annette Islands. The U.S. Coast Guard also provides patrol assistance. Fishing grounds are patrolled. Violations are typically limited to line or gear violations. Enforcement also patrols reserve boundaries for unlicensed outside fisheries (charters, power trollers). Violations can lead to suspension of fishing privileges – during the last couple years perhaps one boat per year has had their license suspended. Cases are heard by the local court. Violations may also be enforced in Federal Court. There were about 4 cases of fishers drifting outside of the 3,000' AIR jurisdiction in 2012, though fishers were not far from the boundary. A small number of similar infractions were also reported to occur in 2013. No other grievous offences were reported. Other deterrents from breaking regulations include fines and incarceration.

2 Results

2.1 General discussion

The section below provides the general information about the status of the stock, the ecosystem impacts from fishing, and management arrangements for this reporting period. According to the terms of the Action Plan, the client has provided the following information on the work undertaken since the initial certification in 2011:

- Annette Islands Reserve 2011, 2012, 2013 and 2014 Commercial Salmon Catch and Escapement Report. MIC DF&W and Tamgas Creek Hatchery.

- Evaluation of the Effectiveness of Harvest Control Rules for Annette Island Chum Salmon. MIC DF&W. 2012.
- Research and Monitoring Plan of the Metlakatla Indian Community. 2012. MIC DF&W, Tamgas Creek Hatchery, Metlakatla Natural Resources Committee.
- Post Season Catch Report by gear and species. 2011, 2012, 2013, 2014. MIC DF&W.
- Summary Report of Fisher Logs, a new requirement for salmon landed on AIR. 2012, 2013, 2014. AIP/Silver Bay.
- Annual Report. Fishery Management Report. 2010-2014. ADF&G
- Summary of management actions taken in 2010-2014.
- Consultations undertaken by Metlakatla Natural Resources Committee in 2013 summary
- Sockeye Restoration and Enhancement Plan, 2013. MIC Natural Resources Committee.
- Report on chum salmon marking from 2013 and 2014. S Leask.
- Metlakatla Indian Community Policy Statement for Fisheries. MIC, 2013.
- Commitment Memo relating to coho at Tamgas Creek weir. Winters and Moran. 2014.

2.2 Principle 1 - Stock Status and Harvest Strategy

2.2.1 2014 Harvest

Total harvest was above average for salmon fisheries in the Annette Islands Reserve (**Table 4)**. Total volume of 10.0 million pounds was above average. Catches of pink salmon were well above average. Coho and king catches were average or above. Chum catches were below average for both summer and fall runs. Sockeye catches were below average.

Table 3. Cumulative Salmon Catch Report adopted from Annette Islands Reserve 2014 Commercial Salmon Catch and Escapement Report (MIC DF&W, 2015).

Gear		Chinook	Sockeye	Coho	Pink	Chum	Total
Gillnet	**# of fish**	1,156	8,656	44,209	465,661	99,871	619,553
	Avg. Fish	977	10,543	36,082	243,214	127,330	418,146
	Lbs.	23,582	54,002	357,192	2,073,386	910,869	3,409,031
Seine	**# of fish**	181	13,132	7,647	1,524,031	30,975	1,575,966
	Avg. Fish	200	6,697	6,695	772,140	33,726	819,458
	Lbs.	2,243	77,791	48,191	6,119,820	296,993	6,545,038
Troll	**# of fish**	110	1	643	261	8	1,023
	Lbs.		7	4,752	1,479	78	7,755
All	**# of fish**	1,447	21,789	52,499	1,989,953	130,854	2,196,542
	Avg. Fish	1,177	17,240	42,777	1,015,354	161,056	1,237,604
	Lbs.	17,264	131,800	410,135	8,194,685	1,207,940	9,961,824

The 2014 season began in June and ended 8 October. Fishery management in 2014 involved typical in-season actions for time, area, and gear transition schedules based on species run patterns. Additional restrictions were adopted during the fall season in response to a lower-than-average chum run. Areas on the east (back) side of the island were closed to fishing. (Most chum salmon streams are located on the east side.) Gillnet mesh size was restricted to a 5 ½' minimum in order to reduce harvest of dark pinks. Purse seine openings were also limited during a transitional period between runs.

2.2.2 2014 Escapement

Fisheries are managed with time and area restrictions based on in-season spawning ground surveys in index streams measured against long-term average escapement numbers.

Peak counts of pink salmon escapement to AIR streams were 146% of average during. Important pink salmon indicator streams include Annette Pt., Crab Creek, Hemlock Creek and Nadzaheen Creek. Pink salmon exceeded escapement goals for all main systems. This is the eighth year in a row of above-average escapements.

Peak counts of fall chum salmon escapement to AIR streams were below average for the third year in a row. However, both 2013 and 2014 counts were underestimates because rainy weather and high flows precluded counts during the normal peak of the run. . Important chum salmon streams are Crab Creek, Hemlock Creek and Nadzaheen Creek.

Table 4 Salmon escapement in Annette Island Reserve index systems (sum of peak counts and percent of average) (MIC 2015).

	Pink salmon		Chum salmon		Sockeye (Trout Lk.)	
	Count	v. avg.	Count	v. avg.	Count	v. avg.
2009	108,959	118%	2,442	139%	768	530%
2010	124,265	134%	2,080	117%	411	245%
2011	121,921	130%	1,828	102%	199	112%
2012	110,717	117%	1,214	68%	217	122%
2013	112,677	118%	982 [a]	55% [a]	759	424%
2014	140,008	146%	243 [a]	14%	377	219%

[a] *underestimate due to late season high water.*

Strong sockeye counts were observed in Trout Lake for the sixth consecutive year. The 2014 return was comprised of naturally-produced progeny of sockeye spawning in 2010. The 2013 return was produced naturally from adult returns of hatchery releases following a lake fertilization program.

Coho occurrence in AIR streams was assessed for the first time in 2013 based on juvenile surveys during summer. This effort continued in 2014. The presence and relative abundance of juvenile coho was documented inNadzaheen, Annette Point, Crab and Hemlock creeks.

2.2.3 2014 Enhancement

Tamgas Hatchery production was similar to recent averages. Returns were excellent for chum, average for coho and good for kings relative to the amount of yearlings released. The conversion of chum production from fall run to summer run stock was completed in 2014. In 2014 there were no strays from other hatcheries or wild systems into Tamgas Creek. One Tamgas tagged coho and one Tamgas tagged king were recovered at Whitman Lake Hatchery in Ketchikan in 2013. For the period 1982-2000, tagged Tamgas Hatchery kings were occasionally reported from Deer Mountain hatchery (157), Whitman Lake Hatchery (137), Chickamin River (60), Ketchikan area (44), Margaret Lake (24), Neets Bay Hatchery (20), McDonald Lake (19), and the Unuk River (9).

Table 5 Summary of Tamgas hatchery egg take, fry released and the number of returning adult salmon to the hatchery in 2014.

Species	# of returning adults	Egg take	# released
Chum	68,400	13,500,000	11,000,000
Coho	156,239	3,100,000	2,544,000
King	2,915	385,000	367,000
Sockeye	500	40,000	0
Total	**227,553**	**17,025,000**	**13,911,000**

In 2013, Tamgas hatchery was re-fitted to cold water from the bottom of Trout Lake so that all production of summer chum could be thermally-marked beginning. Approximately 20% of the 2013 and 2014 brood years were marked with a hatchery-specific otolith banding pattern. Effectiveness of otolith marking was confirmed by the ADFG laboratory from test samples of sacrificed fish. The last 3 of 7 bands were relatively indistinct because of decreasing availability of warm water for marking. However, ADFG reported that the marks were sufficiently distinct to identify the hatchery of origin. Coho salmon were not thermally marked. Water of different temperatures needed for marking is not available during coho incubation because it occurs later in the year after the lake water source has cooled and the lake is no longer thermally-stratified. Nor is it practical to sample returning adults in the escapement. Hatchery contributions of coho to the fishery are already effectively estimated based on coded wire tags.

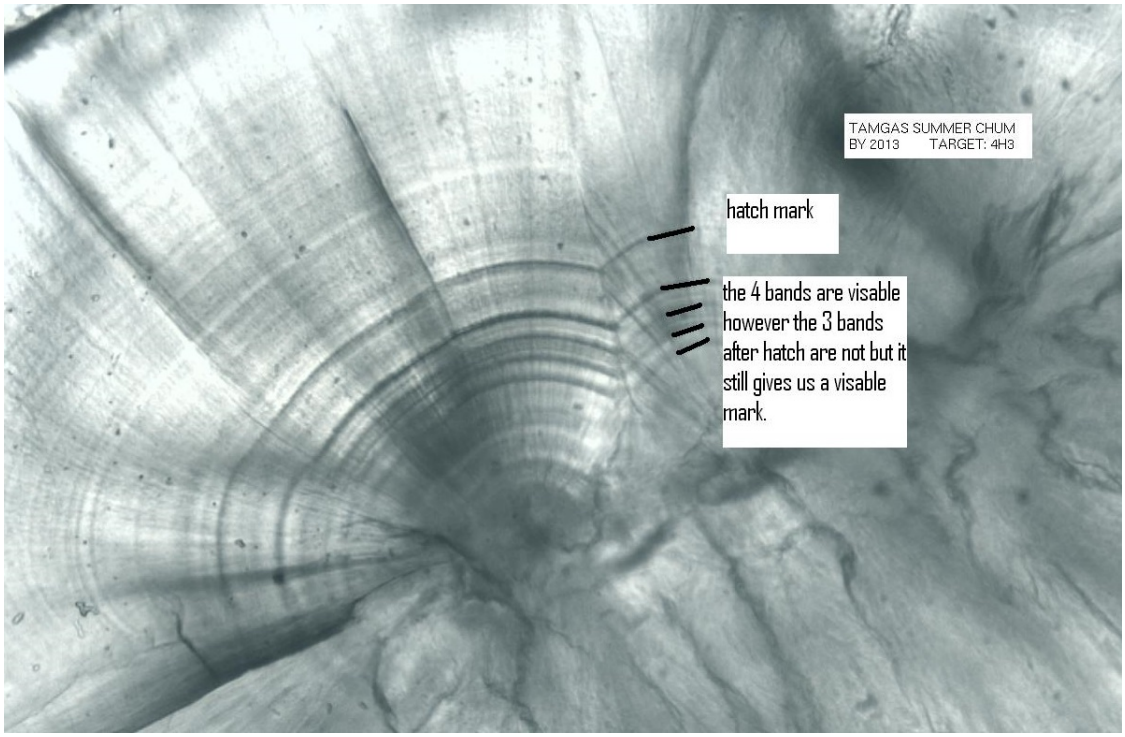

Figure 3.Otolith marking pattern for Tamgas Hatchery summer chum salmon in 2013.

In 2013, approximately 180 adult coho salmon were collected at the Tamgas Creek hatchery weir and released into Tamgas Lake to meet conditions of this certification. This was the first release of this type. An additional 180 adult coho were similarly released in 2014.

In FY2012, funding was identified in the State budget for design of additional hatchery facilities in Port Chester at the mouth of Melanson Creek for collection, spawning and rearing of summer chum salmon. Melanson Creek is a non-fish bearing system due to passage barriers. The new facility is expected to be built with the capacity to thermal mark all production. The MIC are currently developing a reserve-wide enhancement plan which will provide programmatic guidance of the new facility. A preliminary hatchery plan and cost estimates have been developed for the Melanson Creek facility and will be completed as per the enhancement plan. Funds for hatchery construction remain to be appropriated.

2.3 Principle 2 – Ecosystem impacts from fishing

Sockeye is the only main retained species. Harvest of sockeye is reported in processor fish tickets.

Beginning in 2011 AIR fishers were required to return a new log book where interactions with non-salmon species are recorded. Logbooks are turned in weekly. Fishers are not paid for their landings until a logbook sheet is turned in for the week. The logbooks record all non-target species of fish, fish retained for subsistence as well as ETP and marine mammal interactions. This new logbook program replaces the Metlakatla Fish and Wildlife end of the season bycatch survey. Bycatch numbers in 2012-2014 logbooks were similar to what were reported in the year end surveys. The log book program will be discontinued in 2015 because it has effectively determined that bycatch rates are very low.

Spiny dogfish is the only bycatch species reported with any frequency but numbers fall far short of the 5% level denoting a main bycatch species. Spiny dogfish are abundant throughout southeast Alaska and the minor levels of incidental harvest are of no concern. Fishers actively avoid their catch to avoid gear damage. For instance, fishers do not fish for salmon at night because large numbers of spiny dogfish may be caught.

No other changes relating to habitat or ecosystem were reported.

2.4 Principle 3 – Management and Regulation

No major structural changes to the fishery management system were reported for 2014.

—END REPORT—