



Application City and Borough of Sitka Fisheries Enhancement Fund

Sitka Sound Science Center

2022

The Sitka Sound Science Center (SSSC) is grateful for the important funds we have received from the Fish Box tax in previous years. **These funds have made a difference in our ability to enhance salmon to the benefit of the entire community.** We respectfully request the City and Borough of Sitka Assembly consider providing the Sheldon Jackson (SJ) Salmon Hatchery \$30,600 from the Fisheries Enhancement Fund. **Importantly, our organization serves the entire community, not just one sector. Every student in the Sitka Schools experiences our programs, and all of Sitka has access to the enhanced fish that originate from the SJ Hatchery.** The SJ Salmon Hatchery work aligns perfectly with the purpose of the Fisheries Enhancement Fund and the Sitka Sound Science Center serves all of our community. Our facility is permitted for 12 million chum, 3 million pink and 250,000 coho salmon eggs. The Sitka Sound Science Center produces these fish for the charter, commercial, sport and subsistence harvest in Sitka Sound and Deep Inlet. We have a partnership with the Northern Southeast Regional Aquaculture, for whom we provide 9 million chum eggs, returning over \$9 million total value to the commercial fishing fleets of Sitka over the past ten years and millions to the guided sport industry. The salmon that SSSC release in front of our facility are valued at another \$400,000 just for the commercial catch. In 2021, SSSC contributed \$1.4 million to the commercial salmon fleet, and enhanced the guided sport fishery. Our hatchery fish are also caught by recreational and subsistence fishermen in Sitka Sound and surrounding waters. Our return site adjacent to the Sage Beach provides a unique opportunity for anglers of all ages to catch salmon.

History of the Organization: Sitka Sound Science Center

The Sitka Sound Science Center (SSSC) is a **non-profit 501c3** organization formed in 2007. The Sitka Sound Science Center is dedicated to increasing understanding and awareness of terrestrial and aquatic ecosystems of coastal Alaska through education and research. Our vision is to build on Sitka's legacy and potential as an educational and scientific community. We have 18 year-round staff members and 14 additional summer employees. We own the 1929-era Sage building and Sitka Sawmill that at one time housed the Sheldon Jackson College science classrooms and laboratories. Today we operate the Molly O Ahlgren Aquarium and the Sheldon Jackson Salmon Hatchery. Our hatchery contributes to the guided sport and recreational fisheries, Sitka Sound common property fishery, and the Deep Inlet chum fishery. The SJ Hatchery is also an educational tool that provides training to people in the UAS Fisheries Technology Training Program as well as in the Sitka School District and Mt. Edgecumbe High School. Students in these programs are the future of salmon enhancement and fisheries management. We provide an aquaculture class (funded by the National Science Foundation) with hands-on, experiential learning to Pacific High School, Mt. Edgecumbe and Sitka High School students as well as facilitated mentorships for fisheries enhancement and marine research.

The Sheldon Jackson Salmon Hatchery was the first hatchery permitted in the State of Alaska. The hatchery was a production facility and a training location where students learned fisheries biology, natural resource management, and fisheries enhancement techniques. Graduates from the fisheries program at Sheldon Jackson College from 1975 to 2007 are now professionals and leaders in fisheries enhancement, management, and policy around the State of Alaska. When the Science Center took over operation of the hatchery in 2007, our board remained committed to contributing to the common property fishery and the continuation of the unique training program our location and facility affords.

Today, SSSC delivers high quality science education programs and conducts collaborative research with several research institutions from around the nation. SSSC works to conduct research that reflects Sitka's locally relevant scientific questions and in close partnership with fishing interests such as DIPAC, Northern Southeast Aquaculture Association, Alaska Department of Fish and Game, National Oceanic and Atmospheric Administration, and Silver Bay Seafoods.

Our programs:

What's new? When NOAA announced it is ending its chinook hatchery research program at Little Port Walter this year, SSSC and NSRAA stepped up to take the 400,000 smolts, rear and then release them. SSSC is in the midst of constructing a new Spawning and Incubation Facility (SPIFY) that is expected to be completed by December 2022. This project is supported by the regional aquaculture associations, the Northern Southeast Regional Aquaculture Association (NSRAA) and the Douglas Island Pink and Chum (DIPAC), as well as the Rasmuson Foundation, the Murdock Trust, Cargill Inc, and the USDA. Sitka Sound Science Center is also a release site for chinook salmon reared by the Northern Southeast Aquaculture Association. These high value fish will be a large draw for the entire community and accessible to people without a boat.

Other Information

We continued our strong research partnerships with, NSRAA, Central Council Tlingit Haida Indian Association, University of Alaska Fairbanks, University of California, University of San Francisco, U.S. Coast Guard, RAND Corporation, National Weather Service, Canadian Geologic Survey, Alaska Volcano Observatory, University of Oregon, NOAA, US Geologic Survey, State Division of Geologic and Geophysical Services, U.S. Forest Service, and the Alaska Department of Fish and Game.

Our educational programs offer experiences for people of all ages. SSSC after school, and summer camps have become enormously popular and our Scientists in the Schools program, integrated into the K-12 curriculum for the Sitka School District and Mt. Edgecumbe High School continue to assist **all students** in all of our schools. Our other education programs include our Sprouts program for 3-5 years olds, and Sitka WhaleFest which brings scientists from around the nation to Sitka each fall to share their research findings and celebrate the marine environment. We institute community research and education programs with Sitka Tribe of Alaska, US Forest Service, University of California Santa Cruz, Williams College, Johns Hopkins University, Exeter College, and Sitka Conservation Society.

Enhancement

Sitka Sound Science Center is part of the almost \$1 billion fisheries enhancement industry in Alaska. Southeast Alaska hatcheries contribute millions of pounds of fish to commercial, charter, sport, personal use and subsistence fisheries, resulting in the injection of millions of dollars into the Sitka economy. The McDowell study (May 2017) demonstrates how important hatcheries are to our community and regional economy. Hatcheries create 2,000 jobs in Southeast Alaska and produce \$90 million in labor income. The SJ Hatchery facility is permitted by the State for 12 million Chums, 3 million Pinks, and 250,000 Coho, providing important local sport, commercial, and charter fishing opportunities near town. Sitka has 81 guided sport businesses and employs more than 160 people (with Sitka residencies). While we don't know the exact numbers of fish taken by nonresident guided anglers, we know hatcheries contribute to their catch. In addition, visitors target our fish when fishing near the Sea Walk and Sage Beach (adjacent to our facility). Our nonprofit organization provides 9 million chum eggs for the Deep Inlet remote release site. Because of our location, SSSC-reared salmon are easily accessible to commercial fishermen, recreational and guided sport fishermen including land-based sport fishing. The return site adjacent to Sage Beach provides a unique opportunity for anglers to catch salmon from the shore, an opportunity used by children, families and elders during the salmon return. We also provide salmon carcasses for locals to use for dog food and gardening. In addition, SSSC is training people to work in fisheries enhancement. We have regular



and long-term internships to train people in aquaculture. **We are the only working training facility hatchery in the State of Alaska, and one of only two in the Pacific Northwest.**

We are part of the State of Alaska \$20 million long term study on the interaction between wild and hatchery chum salmon overseeing the Southeast field crews conducting the research. SSSC continues to conduct controlled research experiments for the hatchery feed company Skroetting in which we are testing alternative fish food ingredients.

Our facility received approximately 19,000 visitors annually in 2019, including many charter clients in town for fishing as well as cruise ship passengers, students and scientists. As part of the visitor experience, we provide them with a history of salmon enhancement and commercial, sport and subsistence fishing in Alaska. We teach visitors about the salmon life cycle, how our community depends on fishing for an economic base and the importance of culture in our relationship with the natural world.

Community Support

Sitka Sound Science Center has a wide breadth of community support as represented by our donation and in-kind support from fish processors such as Silver Bay Seafoods, and Sitka Sound Seafoods; private foundations including the Sitka Permanent Charitable Trust, Rasmuson Foundation, individual members, and a breadth of individual donations. We are also supported by Douglas Island Pink and Chum (DIPAC) and the Northern Southeast Regional Aquaculture Association (NSRAA). Our Board of Directors represents a cross section of Sitka. Our board members are: Trish White (owner, White's Pharmacy); Kitty LaBounty (UAS); Elizabeth Bagley Linda Waller (retired Sitka Sound Seafoods); Rob Allen (chair); Alana Peterson (treasurer, and Spruce Root executive director) Jacqui Foss (USFS); Michael Mausbach (Spruce Root)

Dollars Requested: Sitka Sound Science Center respectfully requests the balance of the fisheries enhancement fund \$30,600.

Statement of what will be achieved with the funding: Fisheries Enhancement funding will enable Sitka Sound Science Center to maintain its hatchery production and enhancement operations. The monies from the Fisheries Enhancement Fund will go directly into supporting hatchery operations and staffing the hatchery. These positions are responsible for overseeing fish health, spawning, daily fish culture, tagging fish, water quality monitoring, research operations, facility issues and other essential hatchery tasks that support strong, healthy fish releases. Because of the small size of our facility, cost recovery fishing does not pay all the bills for our operations. We consider the fish box tax funds as recouping from some of the users who benefit from the Sitka Sound Science Center hatchery. **The funds provided by the fish box tax are vital for our organization, and our hatchery which serves all of Sitka.**

Explanation of how this will enhance the fisheries within the City and Borough of Sitka: Sitka Sound Science Center provides fisheries enhancement in many ways to the entire community. We directly contribute to salmon fishing opportunities for **all users** in Sitka by:

- Enhance the quantity of fish stocks returning to Sitka Sound by releasing 250,000 Coho, 3 million Chum and 3 million Pink salmon that return to Crescent Bay.
- Enhance and contribute to the Deep Inlet terminal fishery in partnership with NSRAA to release 9 million Chum salmon.
- Provide a release and terminal area for king salmon released by NSRAA.

Additionally, we ensure fisheries enhancement into the future by:

- Training adults and students to become competent aquaculture technicians for work at NSRAA or other hatcheries/salmon enhancement projects through on-the-job training
- Introduce **every Sitka K-12 student** to fisheries enhancement, science and other marine related disciplines as options for their future careers by providing hands-on laboratories and supporting science curriculum at all Sitka Schools.
- Educate visitors (including guided sport clients) about hatcheries and how salmon enhancement works in conjunction with wild salmon management and conservation in Southeast Alaska and the important role of commercial, sport and subsistence fishing to Sitka's economy, lifestyle and culture.
- Provide internship opportunities for high school and college students studying science and to work in science education and hatchery operations during the summer.
- Provide summer employment opportunities for Sitka High School students to work in science education and hatchery operations.

ATTACHED:

Hatchery Pro Forma

SSSC recent Balance Sheet

Balance Sheet Comparison

	12/31/2021	12/31/2020
Assets		
Current Assets		
Checking/Savings		
SSSC Checking	\$2,039,148.57	\$1,366,915.33
Wells Fargo Investment	\$280,174.43	\$248,853.27
PayPal	\$4,309.61	\$3,824.26
Petty Cash	\$2,193.44	\$225.70
Total Checking/Savings	\$2,325,826.05	\$1,619,818.56
Accounts Receivable	\$404,179.30	\$155,549.58
Other Current Assets		
AK Airlines Ticket Refunds	\$0.00	\$1,368.55
Prepaid Insurance	\$16,573.15	\$22,675.40
Rental Deposit	\$500.00	\$0.00
Total Other Current Assets	\$17,073.15	\$24,043.95
Total Current Assets	\$2,747,078.50	\$1,799,412.09
Fixed Assets		
Sage Building	\$1,839,550.83	\$1,839,550.83
Lincoln Street Land	\$416,950.00	\$416,950.00
Hatchery Improvements	\$252,009.00	\$252,009.00
Sawmill Creek Building	\$1,467,214.98	\$1,467,214.98
Equipment Capitalized	\$237,568.73	\$237,568.73
Accumulated Depreciation	(\$404,221.00)	(\$404,221.00)
Construction in Progress	\$55,840.04	\$55,840.04
Total Fixed Assets	\$3,864,912.58	\$3,864,912.58
Total Assets	\$6,611,991.08	\$5,664,324.67
Liabilities and Net Assets		
Liabilities		
Current Liabilities		
Accounts Payable	\$40,966.57	\$11,899.62
Credit Cards	\$4,921.49	\$1,811.59
Other Current Liabilites	\$97,010.56	\$100,386.37
Total Current Liabilities	\$142,898.62	\$114,097.58
Long Term Liabilities		
State of Alaska FELP #3	\$392,072.00	\$392,072.00
SBA PPP Loan I	\$0.00	\$192,433.00
SBA PPP Loan II	\$196,867.00	\$0.00
Total Long Term Liabilities	\$588,939.00	\$584,505.00
Total Liabilities	\$731,837.62	\$698,602.58
Net Assets		
Net Asset	\$5,415,461.85	\$4,501,030.48
Operating Reserve Fund	\$151,355.00	\$151,355.00
Debt Service Reserve Fund	\$147,423.91	\$147,423.91
Reserve for Replacement Fund	\$38,074.00	\$38,074.00
Scholarship Reserve Fund	\$22,138.70	\$22,138.70
Endowment Fund	\$105,700.00	\$105,700.00
Total Net Assets	\$5,880,153.46	\$4,965,722.09
Total Liabilities & Net Assets	\$6,611,991.08	\$5,664,324.67

Sheldon Jackson Hatchery (SSSC) Proforma - Revenue
Return Projections & Revenue

Updated 23-May-22 WHC

Actual

Fish
Pounds
Value

SSSC			
Estimated Commercial contribution			2022-2030
PINK	CHUM	COHO	TOTAL
801,896	363,809	35,998	
2,886,824.15	2,874,094.25	269,981.25	
\$ 519,628.35	\$ 2,241,793.52	\$ 210,585.38	\$ 2,972,007.24

Pinks																																																																																																																					
Brood Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029																																																																																																								
Permitted Eggs	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000																																																																																																								
Associated Release	2,700,000	2,700,000	2,819,195	2,901,782	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000																																																																																																								
Recovery	<table border="1"> <thead> <tr> <th>Return Year</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> <th>2025</th> <th>2026</th> <th>2027</th> <th>2028</th> <th>2029</th> <th>2030</th> </tr> </thead> <tbody> <tr> <td>3 yr olds</td> <td>191,826</td> <td>268,455</td> <td>283,566</td> <td>150,893</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> <td>148,200</td> </tr> <tr> <td>Brood stock</td> <td>5,812</td> <td>5,001</td> <td>9,667</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> <td>5,000</td> </tr> <tr> <td>Commercial catch</td> <td>115,096</td> <td>58,532</td> <td>127,603</td> <td>90,536</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> <td>88,920</td> </tr> <tr> <td>Cost Recovery (CR) Fish</td> <td>113,259</td> <td>185,924</td> <td>273,889</td> <td>55,357</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> <td>54,280</td> </tr> <tr> <td>CR price \$/lb</td> <td>\$ 0.18</td> <td>\$ 0.18</td> <td>\$ 0.22</td> <td>\$ 0.18</td> <td>\$ 0.19</td> <td>\$ 0.19</td> <td>\$ 0.20</td> <td>\$ 0.20</td> <td>\$ 0.21</td> <td>\$ 0.21</td> <td>\$ 0.22</td> <td>\$ 0.22</td> </tr> <tr> <td>CR Pounds</td> <td>390,421</td> <td>669,326</td> <td>662,547</td> <td>199,285</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> <td>195,408</td> </tr> <tr> <td>Revenue</td> <td>\$ 68,599.71</td> <td>\$ 120,478.75</td> <td>\$ 142,447.61</td> <td>\$ 36,768.16</td> <td>\$ 36,954.10</td> <td>\$ 37,877.95</td> <td>\$ 38,824.90</td> <td>\$ 39,795.52</td> <td>\$ 40,790.41</td> <td>\$ 41,810.17</td> <td>\$ 42,855.42</td> <td>\$ 43,926.81</td> </tr> </tbody> </table>													Return Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	3 yr olds	191,826	268,455	283,566	150,893	148,200	148,200	148,200	148,200	148,200	148,200	148,200	148,200	Brood stock	5,812	5,001	9,667	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	Commercial catch	115,096	58,532	127,603	90,536	88,920	88,920	88,920	88,920	88,920	88,920	88,920	88,920	Cost Recovery (CR) Fish	113,259	185,924	273,889	55,357	54,280	54,280	54,280	54,280	54,280	54,280	54,280	54,280	CR price \$/lb	\$ 0.18	\$ 0.18	\$ 0.22	\$ 0.18	\$ 0.19	\$ 0.19	\$ 0.20	\$ 0.20	\$ 0.21	\$ 0.21	\$ 0.22	\$ 0.22	CR Pounds	390,421	669,326	662,547	199,285	195,408	195,408	195,408	195,408	195,408	195,408	195,408	195,408	Revenue	\$ 68,599.71	\$ 120,478.75	\$ 142,447.61	\$ 36,768.16	\$ 36,954.10	\$ 37,877.95	\$ 38,824.90	\$ 39,795.52	\$ 40,790.41	\$ 41,810.17	\$ 42,855.42	\$ 43,926.81
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Assumptions		
marine survival	5.2%	price
commercial harvest %	60%	inflation
comm. price per pound	\$ 0.18	2.5%
average weight	3.60 lbs	

Chum																																																																																																																																																																									
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Permitted Eggs	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000																																																																																																																																																									
Associated Release	2,902,360	2,795,979	2,293,105	2,743,086	2,987,634	2,966,004	2,978,000	2,760,000	2,760,000	2,760,000	2,760,000	2,760,000	2,760,000	2,760,000	2,760,000	2,760,000																																																																																																																																																									
Recovery	<table border="1"> <thead> <tr> <th>Return Year</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> <th>2025</th> <th>2026</th> <th>2027</th> <th>2028</th> <th>2029</th> <th>2030</th> </tr> </thead> <tbody> <tr> <td>3-year-old</td> <td>6,054</td> <td>10,208</td> <td>9,197</td> <td>7,830</td> <td>7,862</td> <td>7,286</td> <td>7,286</td> <td>7,286</td> <td>7,286</td> <td>7,286</td> <td>7,286</td> <td>7,286</td> </tr> <tr> <td>4-year-old</td> <td>40,598</td> <td>15,612</td> <td>50,581</td> <td>39,830</td> <td>43,380</td> <td>43,066</td> <td>43,241</td> <td>40,075</td> <td>40,075</td> <td>40,075</td> <td>40,075</td> <td>40,075</td> </tr> <tr> <td>5-year-old</td> <td>10,781</td> <td>5,704</td> <td>16,094</td> <td>12,673</td> <td>12,673</td> <td>13,803</td> <td>13,703</td> <td>13,758</td> <td>12,751</td> <td>12,751</td> <td>12,751</td> <td>12,751</td> </tr> <tr> <td>6-year-old</td> <td>648</td> <td>30</td> <td>766</td> <td>504</td> <td>603</td> <td>657</td> <td>653</td> <td>655</td> <td>607</td> <td>607</td> <td>607</td> <td>607</td> </tr> <tr> <td>Total adults</td> <td>58,081</td> <td>31,554</td> <td>76,638</td> <td>60,837</td> <td>64,519</td> <td>64,813</td> <td>64,882</td> <td>61,775</td> <td>60,720</td> <td>60,720</td> <td>60,720</td> <td>60,720</td> </tr> <tr> <td>Brood stock</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> <td>2,500</td> </tr> <tr> <td>Commercial catch</td> <td>6,970</td> <td>20,510</td> <td>35,503</td> <td>39,544</td> <td>41,937</td> <td>42,128</td> <td>42,174</td> <td>40,154</td> <td>39,468</td> <td>39,468</td> <td>39,468</td> <td>39,468</td> </tr> <tr> <td>Cost Recovery (CR) Fish</td> <td>20,690</td> <td>12,299</td> <td>35,700</td> <td>18,793</td> <td>20,082</td> <td>20,185</td> <td>20,209</td> <td>19,121</td> <td>18,752</td> <td>18,752</td> <td>18,752</td> <td>18,752</td> </tr> <tr> <td>CR price \$/lb</td> <td>\$ 0.48</td> <td>\$ 0.78</td> <td>\$ 0.78</td> <td>\$ 0.80</td> <td>\$ 0.82</td> <td>\$ 0.84</td> <td>\$ 0.86</td> <td>\$ 0.88</td> <td>\$ 0.90</td> <td>\$ 0.93</td> <td>\$ 0.95</td> <td>\$ 0.97</td> </tr> <tr> <td>CR Pounds</td> <td>188,437</td> <td>97,162</td> <td>240,822</td> <td>148,465</td> <td>158,645</td> <td>159,458</td> <td>159,650</td> <td>151,058</td> <td>148,141</td> <td>148,141</td> <td>148,141</td> <td>148,141</td> </tr> <tr> <td>Revenue</td> <td>\$ 78,522.00</td> <td>\$ 75,786.44</td> <td>\$ 187,841.16</td> <td>\$ 118,698.10</td> <td>\$ 130,007.40</td> <td>\$ 133,940.47</td> <td>\$ 137,454.41</td> <td>\$ 133,308.63</td> <td>\$ 134,002.37</td> <td>\$ 137,352.43</td> <td>\$ 140,786.24</td> <td>\$ 144,305.90</td> </tr> </tbody> </table>													Return Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	3-year-old	6,054	10,208	9,197	7,830	7,862	7,286	7,286	7,286	7,286	7,286	7,286	7,286	4-year-old	40,598	15,612	50,581	39,830	43,380	43,066	43,241	40,075	40,075	40,075	40,075	40,075	5-year-old	10,781	5,704	16,094	12,673	12,673	13,803	13,703	13,758	12,751	12,751	12,751	12,751	6-year-old	648	30	766	504	603	657	653	655	607	607	607	607	Total adults	58,081	31,554	76,638	60,837	64,519	64,813	64,882	61,775	60,720	60,720	60,720	60,720	Brood stock	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	Commercial catch	6,970	20,510	35,503	39,544	41,937	42,128	42,174	40,154	39,468	39,468	39,468	39,468	Cost Recovery (CR) Fish	20,690	12,299	35,700	18,793	20,082	20,185	20,209	19,121	18,752	18,752	18,752	18,752	CR price \$/lb	\$ 0.48	\$ 0.78	\$ 0.78	\$ 0.80	\$ 0.82	\$ 0.84	\$ 0.86	\$ 0.88	\$ 0.90	\$ 0.93	\$ 0.95	\$ 0.97	CR Pounds	188,437	97,162	240,822	148,465	158,645	159,458	159,650	151,058	148,141	148,141	148,141	148,141	Revenue	\$ 78,522.00	\$ 75,786.44	\$ 187,841.16	\$ 118,698.10	\$ 130,007.40	\$ 133,940.47	\$ 137,454.41	\$ 133,308.63	\$ 134,002.37	\$ 137,352.43	\$ 140,786.24	\$ 144,305.90
Return Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030																																																																																																																																																													
3-year-old	6,054	10,208	9,197	7,830	7,862	7,286	7,286	7,286	7,286	7,286	7,286	7,286																																																																																																																																																													
4-year-old	40,598	15,612	50,581	39,830	43,380	43,066	43,241	40,075	40,075	40,075	40,075	40,075																																																																																																																																																													
5-year-old	10,781	5,704	16,094	12,673	12,673	13,803	13,703	13,758	12,751	12,751	12,751	12,751																																																																																																																																																													
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Brood stock	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500																																																																																																																																																													
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Revenue	\$ 78,522.00	\$ 75,786.44	\$ 187,841.16	\$ 118,698.10	\$ 130,007.40	\$ 133,940.47	\$ 137,454.41	\$ 133,308.63	\$ 134,002.37	\$ 137,352.43	\$ 140,786.24	\$ 144,305.90																																																																																																																																																													

Assumptions		
marine survival	2.2%	price
3 yr	12%	
4 yr	66%	
5 yr	21%	
6 yr	1%	price
commercial harvest %	65%	inflation
comm. price per pound	\$ 0.78	2.5%
average weight	7.90 lbs	

Coho																																																																																																																					
Brood Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029																																																																																																							
Permitted Eggs	170,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000																																																																																																							
Associated Release	157,554	212,500	225,775	235,000	177,000	235,000	235,000	235,000	235,000	235,000	235,000	235,000	235,000	235,000																																																																																																							
Recovery	<table border="1"> <thead> <tr> <th>Return Year</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> <th>2025</th> <th>2026</th> <th>2027</th> <th>2028</th> <th>2029</th> <th>2030</th> </tr> </thead> <tbody> <tr> <td>3 yr olds</td> <td>9,355</td> <td>3,695</td> <td>7,902</td> <td>8,225</td> <td>6,195</td> <td>8,225</td> <td>8,225</td> <td>8,225</td> <td>8,225</td> <td>8,225</td> <td>8,225</td> <td>8,225</td> </tr> <tr> <td>Brood stock</td> <td>519</td> <td>199</td> <td>231</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>Commercial catch</td> <td>7,516</td> <td>1,212</td> <td>4,182</td> <td>4,113</td> <td>3,098</td> <td>4,113</td> <td>4,113</td> <td>4,113</td> <td>4,113</td> <td>4,113</td> <td>4,113</td> <td>4,113</td> </tr> <tr> <td>Cost Recovery (CR) Fish</td> <td>1,074</td> <td>1,796</td> <td>136</td> <td>3,813</td> <td>2,798</td> <td>3,813</td> <td>3,813</td> <td>3,813</td> <td>3,813</td> <td>3,813</td> <td>3,813</td> <td>3,813</td> </tr> <tr> <td>CR price \$/lb</td> <td>\$ 1.03</td> <td>\$ 0.78</td> <td>\$ 0.78</td> <td>\$ 0.80</td> <td>\$ 0.82</td> <td>\$ 0.84</td> <td>\$ 0.86</td> <td>\$ 0.88</td> <td>\$ 0.90</td> <td>\$ 0.93</td> <td>\$ 0.95</td> <td>\$ 0.97</td> </tr> <tr> <td>CR Pounds</td> <td>8,368</td> <td>13,470</td> <td>709</td> <td>28,594</td> <td>20,981</td> <td>28,594</td> <td>28,594</td> <td>28,594</td> <td>28,594</td> <td>28,594</td> <td>28,594</td> <td>28,594</td> </tr> <tr> <td>Revenue</td> <td>\$ 8,627</td> <td>\$ 10,506.6</td> <td>\$ 553.0</td> <td>\$ 22,860.7</td> <td>\$ 17,193.9</td> <td>\$ 24,018.0</td> <td>\$ 24,618.5</td> <td>\$ 25,233.9</td> <td>\$ 25,864.8</td> <td>\$ 26,511.4</td> <td>\$ 27,174.2</td> <td>\$ 27,853.5</td> </tr> </tbody> </table>													Return Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	3 yr olds	9,355	3,695	7,902	8,225	6,195	8,225	8,225	8,225	8,225	8,225	8,225	8,225	Brood stock	519	199	231	300	300	300	300	300	300	300	300	300	Commercial catch	7,516	1,212	4,182	4,113	3,098	4,113	4,113	4,113	4,113	4,113	4,113	4,113	Cost Recovery (CR) Fish	1,074	1,796	136	3,813	2,798	3,813	3,813	3,813	3,813	3,813	3,813	3,813	CR price \$/lb	\$ 1.03	\$ 0.78	\$ 0.78	\$ 0.80	\$ 0.82	\$ 0.84	\$ 0.86	\$ 0.88	\$ 0.90	\$ 0.93	\$ 0.95	\$ 0.97	CR Pounds	8,368	13,470	709	28,594	20,981	28,594	28,594	28,594	28,594	28,594	28,594	28,594	Revenue	\$ 8,627	\$ 10,506.6	\$ 553.0	\$ 22,860.7	\$ 17,193.9	\$ 24,018.0	\$ 24,618.5	\$ 25,233.9	\$ 25,864.8	\$ 26,511.4	\$ 27,174.2	\$ 27,853.5
Return Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030																																																																																																									
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CR price \$/lb	\$ 1.03	\$ 0.78	\$ 0.78	\$ 0.80	\$ 0.82	\$ 0.84	\$ 0.86	\$ 0.88	\$ 0.90	\$ 0.93	\$ 0.95	\$ 0.97																																																																																																									
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Assumptions		
marine survival	3.5%	price
commercial harvest %	50%	inflation
comm. price per pound	\$ 0.78	2.5%
average weight	7.50 lbs	

Chinook - NSRAA smolt release																																																																																																																																															
Brood Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029																																																																																																																																		
Permitted Eggs	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000																																																																																																																																		
Associated Release	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000																																																																																																																																		
Recovery	<table border="1"> <thead> <tr> <th>Return Year</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> <th>2025</th> <th>2026</th> <th>2027</th> <th>2028</th> <th>2029</th> <th>2030</th> <th>2031</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>17</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> <td>228</td> </tr> <tr> <td>5</td> <td>106</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> <td>1414</td> </tr> <tr> <td>6</td> <td>48</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> <td>638</td> </tr> <tr> <td>Total adults</td> <td>171</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> <td>2280</td> </tr> <tr> <td>Commercial catch</td> <td>92</td> <td>2133</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> <td>1231</td> </tr> <tr> <td>Cost Recovery (CR) Fish</td> <td>5</td> <td>11</td> <td>147</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> <td>1049</td> </tr> <tr> <td>CR price \$/lb</td> <td>\$ 2.63</td> <td>\$ 2.88</td> <td>\$ 2.95</td> <td>\$ 3.03</td> <td>\$ 3.10</td> <td>\$ 3.18</td> <td>\$ 3.26</td> <td>\$ 3.34</td> <td>\$ 3.42</td> <td>\$ 3.51</td> <td>\$ 3.60</td> <td>\$ 3.69</td> </tr> <tr> <td>CR Pounds</td> <td>70</td> <td>160</td> <td>2,058</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> <td>14,683</td> </tr> <tr> <td>Revenue</td> <td>\$ 184.10</td> <td>\$ 460.80</td> <td>\$ 6,075.22</td> <td>\$ 44,428.43</td> <td>\$ 45,539.14</td> <td>\$ 46,677.62</td> <td>\$ 47,844.56</td> <td>\$ 49,040.67</td> <td>\$ 50,266.69</td> <td>\$ 51,523.35</td> <td>\$ 52,811.44</td> <td>\$ 54,131.72</td> </tr> </tbody> </table>													Return Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	4	17	228	228	228	228	228	228	228	228	228	228	228	5	106	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	6	48	638	638	638	638	638	638	638	638	638	638	638	Total adults	171	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	Commercial catch	92	2133	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	Cost Recovery (CR) Fish	5	11	147	1049	1049	1049	1049	1049	1049	1049	1049	1049	CR price \$/lb	\$ 2.63	\$ 2.88	\$ 2.95	\$ 3.03	\$ 3.10	\$ 3.18	\$ 3.26	\$ 3.34	\$ 3.42	\$ 3.51	\$ 3.60	\$ 3.69	CR Pounds	70	160	2,058	14,683	14,683	14,683	14,683	14,683	14,683	14,683	14,683	14,683	Revenue	\$ 184.10	\$ 460.80	\$ 6,075.22	\$ 44,428.43	\$ 45,539.14	\$ 46,677.62	\$ 47,844.56	\$ 49,040.67	\$ 50,266.69	\$ 51,523.35	\$ 52,811.44	\$ 54,131.72
Return Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031																																																																																																																																			
4	17	228	228	228	228	228	228	228	228	228	228	228																																																																																																																																			
5	106	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414	1414																																																																																																																																			
6	48	638	638	638	638	638	638	638	638	638	638	638																																																																																																																																			
Total adults	171	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280																																																																																																																																			
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Cost Recovery (CR) Fish	5	11	147	1049	1049	1049	1049	1049	1049	1049	1049	1049																																																																																																																																			
CR price \$/lb	\$ 2.63	\$ 2.88	\$ 2.95	\$ 3.03	\$ 3.10	\$ 3.18	\$ 3.26	\$ 3.34	\$ 3.42	\$ 3.51	\$ 3.60	\$ 3.69																																																																																																																																			
CR Pounds	70	160	2,058	14,683	14,683	14,683	14,683	14,683	14,683	14,683	14,683	14,683																																																																																																																																			
Revenue	\$ 184.10	\$ 460.80	\$ 6,075.22	\$ 44,428.43	\$ 45,539.14	\$ 46,677.62	\$ 47,844.56	\$ 49,040.67	\$ 50,266.69	\$ 51,523.35	\$ 52,811.44	\$ 54,131.72																																																																																																																																			

Assumptions		
marine survival	0.60%	price
4 yr	10%	
5 yr	62%	
6 yr	28%	price
commercial harvest %	54%	inflation
comm. price per pound	\$ 2.63	2.5%
average weight	14.00 lbs	