



SPAWNING NEWS

SOUTHERN SOUTHEAST REGIONAL
AQUACULTURE ASSOCIATION

14 Borch Street
Ketchikan, AK 99901
www.ssraa.org

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In 2016, more than 79 percent of harvested SSRAA chum, 86 percent of SSRAA coho and 91 percent of SSRAA chinook went to common property fishers

Enhanced salmon caught at sea—broodmates of cost recovery chums such as these—are achieving historically sought-after proportions.

PHOTO BY MATT ALLEN

Common-property catch percentages are attaining goals

ASSOCIATION IS EYEING NEW COST RECOVERY SITES AMID THRESHOLD SUCCESSES FOR COMMERCIAL HARVESTS

By **DAVID LANDIS**
SSRAA General Manager

Like every regional hatchery organization with dozens of employees and substantial operational and capital expenses, SSRAA carries a large revenue budget. One source of this revenue is the salmon enhancement tax—the 3 percent of exvessel value collected by the State of Alaska for Southeast regional hatchery associations when commercial fishers sell to processors.

This source of revenue is important, but the enhancement tax typically covers only 12-15 percent of SSRAA's revenue requirements. Where does the rest come from? The vast majority comes from cost recovery: the program

in which SSRAA sells a portion of its returning salmon directly to processors.

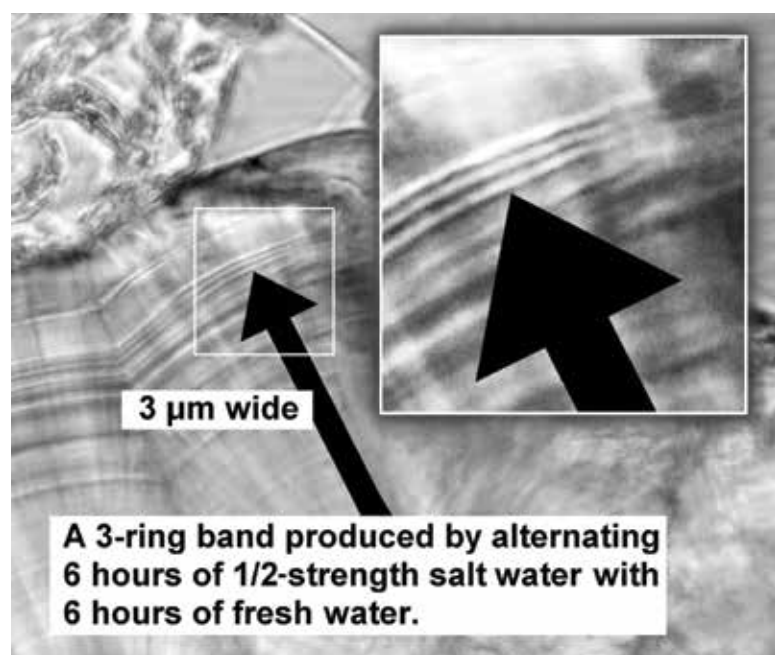
When regional salmon hatchery associations were conceived in the early 1970s, organizers optimistically thought that SSRAA would be able to cover yearly expenses based on cost recovery of 25 percent of returning salmon—leaving 75 percent for common property harvests by commercial fishers. Although it took decades, SSRAA has achieved and even surpassed that goal. In 2016, more than 79 percent of harvested SSRAA chum, 86 percent of SSRAA coho and 91 percent of SSRAA chinook went to common property fishers.

Cost recovery takes place at several SSRAA locations: primarily from the Neets Bay special

harvest area (SHA), but also to a lesser extent from raceways at the Whitman Lake, Klawock, and Neck Lake facilities. From time to time, there are also smaller, mostly unexpected harvests at places such as Burnett Inlet Hatchery, where there were summer coho in excess of broodstock requirements in 2016. Neets Bay dwarfs the other SHAs, with returns from an annual release of about 60 million summer chum.

SSRAA expects to conduct substantial summer chum cost recovery soon at Burnett Inlet on Etolin Island and at Port Asumcion on Baker Island.

For many years at the Neets Bay SHA, SSRAA's method of cost recovery depended on
See 'Cost recovery 101' on 3



Making waves in salmon culturing—Minuscule waves of calcium carbonate in this salmon ear bone may represent a vanguard technology for marking hatchery fish. The 3-ring otolith band results from bathing the egg in alternating salt water and fresh water at the same temperature. The band, only 3 microns across, results in rings as narrow as 0.5 micron. (A micron, or micrometer, is a millionth of a meter—about a fiftieth the width of human hair.)

Experiments in otolith marking are turning up potential positives

By **SUSAN DOHERTY**
For the Spawning News

An innovative and novel project can take on a life of its own. For an example, take our research into new methods for otolith-marking SSRAA salmon.

Our 36 individual experiments have grown to more than 70 manipulations of incubator temperature and chemical exposure over specific periods of time. Some strategies have been tested and confirmed to have exciting feasibility for otolith marking in our production program.

It's hard not to feel as if we're commercial fishers enjoying a record return year and we just have to keep our nets and hooks in the water as long as we can stand up in order to reap the gains!

John Holt, SSRAA's research and evaluation manager, and Susan Doherty, collaborating as Otolith Marking and Reading Research, presented SSRAA with a research project designed to address four main objectives: 1) to make a more cost-effective mark; 2) to exploit alternative methods to achieve a mark; 3) to increase the number of available marks; and 4) to develop computer learning software capable of reading the marks.

The marks need to be discernible from each other to replace existing methodology. As we begin final manipulations of otolith marking on the 2016 brood, the following are highlights.

- *Most temperature manipulations (down to 1 hr. chilled / 5 hrs. at ambient water temp) were readable*

See 'Otolith marking' on 2

In the December 2016 issue we described experiments in otolith marking and reported preliminary results. Here we outline our latest discoveries.

Otolith marking

CONTINUED FROM 1

with microscopic magnification. We call these "micro marks."

- We've used a combination of heated and chilled water for a total of six different temperatures, ranging from 2.5 to 13 degrees Celsius.

- Hatcheries routinely use formalin to control fungus on eggs prior to hatch, and salt water to dissolve egg shells after hatch. We wanted to see whether we could expand the application of these chemicals to also "mark" the otolith at the same time. This experiment, with varying concentrations and durations of exposure, has been fascinating. We are extremely excited about the possibility that many hatcheries could be liberated from their heating and chilling dependency (12-step plan). Salt water is the most promising technique.

- We have marked ponded fry with four different chemical marks.

- We have repeated chemical and thermal manipulations in production incubation systems (heath trays).

- We have marked both chum and coho eggs.

- We are evaluating otolith differences from individual release sites to investigate whether there are microscopically visible differences that discriminate between release sites.

- We have had discussions with staff at the Alaska Department of Fish and Game who are responsible for assigning marks in Alaska; we are hopeful that we can begin to implement some of the micro marks this fall.

- Because most of the marks are visible with microscopic magnification, it will make the computer-learned reading much easier to code. We are now anticipating a working program by fall 2017.

In January, we presented some of our data at the Alaska Fish Culture Conference in Sika. There is much interest and excitement around the state about the implementation of these techniques.

We have more data to analyze than we know what to do with at this point, but we're confident these techniques have the potential to save hundreds of thousands of dollars, if not millions, across Alaska each year. Additionally, the computer learned reading can be implemented as early as 2017 on juvenile samples and in 2019 to evaluate contributions to common property fisheries by SSRAA coho and chum.

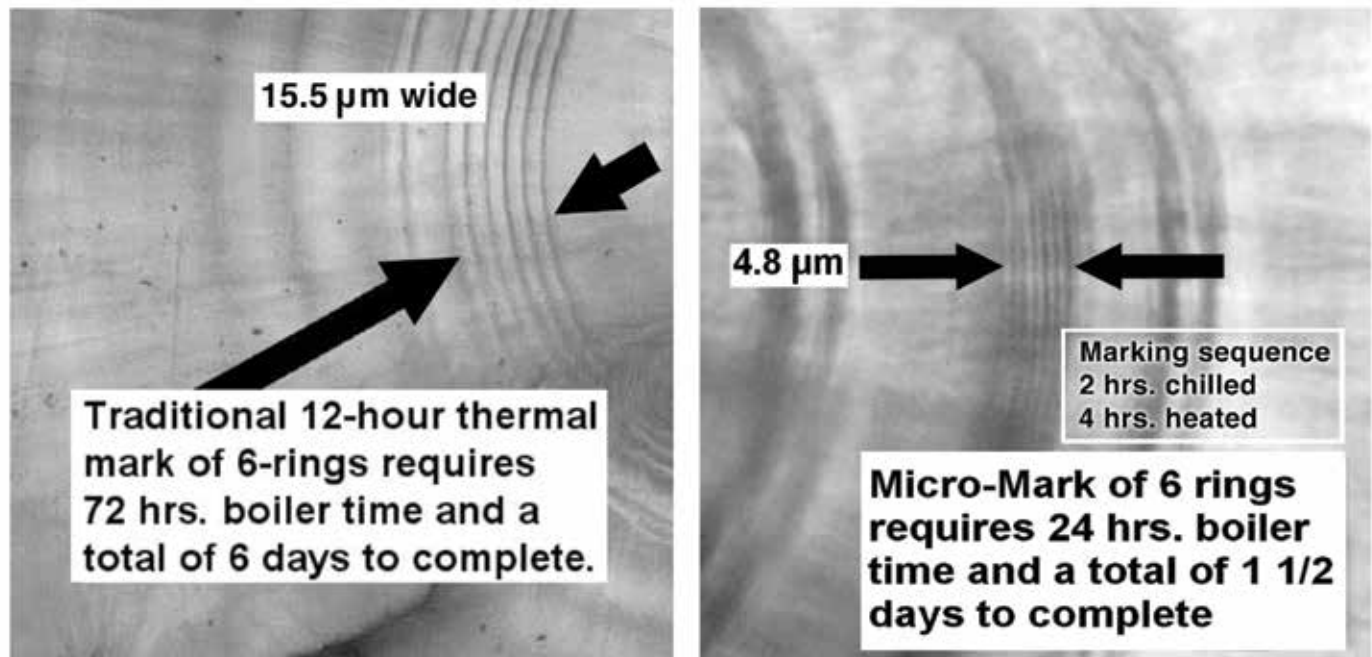
There are still questions to be answered. Along the way, we've stumbled upon several interesting findings that make us question the mechanism that is responsible for the mark. Further, more stringently controlled manipulations may lead to answers for those questions.

- Would a different mounting and grinding procedure leave the entire life history intact on the otolith, leading to more available data to separate release groups?

- Can we apply this technology to monitor wild stocks and have a better way to manage mixed-stock fisheries that have stocks of concern?

- Can we develop a computer learning program to read wild and innate marks?

Between now and next fall, when the next batch of eggs becomes available, we'll be busy completing analyses of our current data and planning future experiments to answer questions created by our results so far. We'll continue updating you with new findings in future editions of *Spawning News*.



Saving time and fuel—Traditional otolith marking (left) requires a lot of time and boiler fuel in building those wide ridges. Laying down micro marks can be less expensive and less time-consuming, and all but the narrowest one-hour marks are readable with present technology.

We send a very heartfelt thank you to the **Deer Mountain staff** for five months of putting up with project participants' coming and going at all hours of the day and night, and for always figuring out a way to make "just one other thing" possible to evaluate. Also, thanks to otolith super-reader **Alan Murray**, SSRAA's lead research technician, for coming in at unpredictable times to read the latest marks so we could start the next series before the eggs hatch. It's definitely been a team effort.

SSRAA Board of Directors

SEINERS

Dan Castle	Ketchikan	F/V Little Lady
Jim Castle (sec.)	Ketchikan	F/V Miss Ada
Leif Dobszinsky	Port Townsend	F/V Chasina
Brad Haynes	Ketchikan	F/V Sovereign Grace

GILLNETTERS

Brennon Eagle	Wrangell	F/V Danegeld
Chris Guggenbickler (pres.)	Wrangell	F/V Noelani
David Klepser	Ketchikan	F/V Hannah Point
Bob Martin	Petersburg	F/V Sumner

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Dave Otte	Ketchikan	F/V Sarah E
Tom Sims	Wrangell	F/V Arctic Nomad
Brian Warmuth	Ketchikan	F/V Shannon Hope

HAND TROLLER

Craig Ring	Ketchikan
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John Clifton (treas.)	Ketchikan	Sportfish
Paul Cyr	Ketchikan	Processor
Mary Edenshaw	Klawock	Native Corporation
Cindy Lasiter	Ketchikan	Public at Large
Lynnette Logan	Craig	Chamber of Comm.
Mike Painter	Ketchikan	Municipality
Sandy Souter	Ketchikan	Public at Large
John Yeager	Wrangell	Subsistence

The 21-member SSRAA Board of Directors includes 13 commercial fishers along with representatives of interest groups and the public.

SSRAA Spawning News is published by the Southern Southeast Regional Aquaculture Association, a private, non-profit aquaculture corporation based in Ketchikan, Alaska.

Our web site is www.ssraa.org.

This publication is mailed free to all limited-entry salmon permit holders for purse seine, drift gillnet, power troll and hand troll in Alaska Districts 1-8. It is also mailed free to any person interested in SSRAA.

To receive Spawning News, send a request with your name, your organization's name and your address to:

Spawning News
14 Borch St., Ketchikan, AK 99901

For changes of address for permit holders, send notification to:
Commercial Fisheries Entry Commission
8800-109 Glacier Highway
Juneau, AK
99801. The CFEC fax number is 907-789-6170.

SSRAA uses mailing labels from the CFEC. If your address is wrong, please contact CFEC; SSRAA cannot correct your address for CFEC.

SSRAA Staff

ADMINISTRATION AND OPERATIONS

Dave Landis	General Manager
Bret Hiatt	Operations Manager
Bill Gass	Production Manager
Steve Reid	Assistant Production Manager
Cindy Walters	Executive Administrative Assistant
Liz Jones	Administrative Assistant
Jay Johnson LLC	Accounting Services

RESEARCH & EVALUATION

John Holt	Research & Evaluation Manager
Stephanie Sanguinetti	Lab Supervisor
Alan Murray	Lead Research Technician
Whitney Crittenden	Lead Research Technician

WHITMAN LAKE HATCHERY

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Mark Tollfeldt	Assistant Hatchery Manager
Cody Pederson	Lead Fish Culturist
Caitlin Brady	Fish Culturist
Mike Moreno	Fish Culturist

NEETS BAY HATCHERY

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Vacant	Assistant Hatchery Manager
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Stan Rice	Fish Culturist
Ryan Patten	Fish Culturist
Mike McWaters	Seasonal Fish Culturist
Vacant	Seasonal Fish Culturist
Richard Flagg	Maintenance Supervisor
Will Champlain	Lead Maintenance Technician
James Adams	Seasonal Maintenance Technician

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Cain DePriest	Assistant Manager
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Wesley Malcom	Fish Culturist
Stephan Smith	Fish Culturist

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Dolores Loucks	Lead Fish Culturist
William Pattison	Seasonal Fish Culturist

DEER MOUNTAIN HATCHERY

Matt Allen	Assistant Hatchery Manager
Michelle Leitz	Lead Fish Culturist

KLAWOCK RIVER HATCHERY

Jeff Lundberg	Hatchery Manager
Troy Liske	Assistant Hatchery Manager
Sheldon Sammon	Fish Culturist
Paul Young	Fish Culturist
Jesse Knock	Seasonal Fish Culturist
Jason Allen	Maintenance Supervisor

MAINTENANCE DEPARTMENT

Ted Addington	Maintenance Manager
Jacob Arnold	Lead Maintenance Technician

SSRAA PEOPLE

TOW HOLD Tugboat skipper and crew anchor remote-site operations

Contract towing for SSRAA is not a casual business. It's time-sensitive. It's tide-sensitive. It's climate-, site- and fry-sensitive.

Bobby Cowan has handled SSRAA's remote marine transport for 26 years and he seems relatively easygoing for someone whose job is fitting tugboats and barges through narrow windows of time, winds and rocks.

Cowan Towing Co. provides its most essential service to the aquaculture association in January and February, when Cowan and his crew move barge-borne remote camps, fish food, rearing nets and miscellaneous gear to SSRAA's five far-flung rearing sites. When it's necessary, they also help SSRAA personnel bring wave-shifted net-pen arrays and breakwaters back into place. All of this occurs while SSRAA's production staff are back at the hatcheries prepping tens of millions of salmon fry for meticulously timed transport.

"**WE MAKE IT WORK**," said Cowan during a restaurant lunch with his crew: Burton Morrison and his son, Brandon Morrison. "We fit into a window that's going to work for SSRAA. I can tell them where I'm going to be and the packers with the fish come in right behind me. We have to get it right: there are 70 million babies there."

SSRAA production manager Bill Gass credits Cowan Towing Co. as an indispensable gear in the enhancement machinery.

"The nature of our operation requires the camps to be in place in January," Gass wrote. "They are typically towed out with \$100,000 of fish food on board each barge, as well as housing units for the staff. There really is not a viable alternative if one of the camps did not make it to the destination. We place the entire operation in (Cowan's) hands once we have the camp ready to go."

Burton Morrison, who's worked for Cowan Towing Co. for 20 years, said Cowan's waterfront moniker is "Bobby Saltwater." Cowan said he was nicknamed by someone who worked for a logging company and observed Cowan's expertise in assembling and towing log rafts. "I towed 250 million board feet of logs in rafts from Carroll Inlet and didn't lose a single stick," Cowan said.

THAT SKILL GOES back five decades. "I started out in my teens, working with my Uncle Clyde. He had Amak Towing and we towed logs anywhere from Dry Pass to Hoonah," Cowan said. "That training is a huge advantage in learning about weather and tides and rigging up tows."

Cowan Towing Co. runs two steel-hulled tugboats named for Cowan's children.

He bought the 41-foot Melissa C brand-new in 1989, before the boat was even finished in a Tacoma shipyard. He'd made some money with older, wood-hulled tugs during clean-up after the Exxon Valdez oil spill. The single-screw Melissa C has a unique "speed at sea" hull that can run at 13 knots when it's essential to hustle to a job. That capability suited Cowan early in his career. "We were trying to be every place at once," he said.

The 49-foot Michael C, like the Melissa C, develops about 700hp, but power



Bobby Cowan

“One thing I know is, if you're going to be in this business for this long, you'd better have an angel on your shoulder

— BOBBY COWAN



NARROW WINDOW—Cowan Towing Co.'s MV Michael C slots a SSRAA remote camp into place in a tight cove. Timing and site are critical factors.

PHOTO COURTESY OF BOBBY COWAN

is divided between two diesels driving twin screws. "The maneuverability is as good as any boat I've ever run," Cowan said of that tugboat, built in New Orleans. "That's one of the things that helps SSRAA, especially when we're going into tight places and it's shallow draft."

SSRAA is just one of Cowan Towing Co.'s clients. Cowan and the Morrisons (the younger Morrison has worked with Cowan for a couple of years) tow logs along Revilla and Prince of Wales islands. They deliver equipment and supplies to mining operations. They work with docks and sea anchors.

BETWEEN PAYING GIGS, Cowan dabbles at prospecting. "I'm getting into prospecting a little bit. I'm a rock nut. It's more or less a hobby," he said. "But we've probably had 5,000 pounds of rock on the boat."

SSRAA's remote rearing camps are towed out in deep winter and are retrieved in May. Individual transits—35 miles to Kendrick and McLean, 85 miles to Nakat Inlet—add up to more than 400 miles. Every tow must be timely and everything has to arrive intact. Cowan said his long experience with Southeast's fickle winds and rough waters is invaluable, but he wouldn't give up radar, GPS and reliable five-day marine weather forecasts. "In the old days with Uncle Clyde, we watched the way the sea gulls took a bath" and read other natural signs—hoping portents worked as forecasts. But Mother Nature can still stall a job despite a skipper's sea savvy and wheelhouse tech.

"Bobby is extraordinarily easy to work with and has on many occasions gone well beyond the call of duty, including spending the better part of a week tied up in Metlakatla waiting for a storm to clear," wrote Gass, the SSRAA production boss. "His knowledge and commitment are a critical piece of getting our fish to the fishermen every year."

COWAN SAID he regards SSRAA as more than just a contract client. "One advantage

that they have with me is that I'm an owner-operator, and I can be there for them when they need me. Those fish get priority when they're ready to move," he said. "It's just too big a thing for this community." He cited the tens of millions of dollars of estimated annual benefit to the regional economy from SSRAA's programs. "Without SSRAA, I don't think the economy would be the same here."

Cowan's been a tugboat skipper for 43 years and said he has no thought of retiring—and that he'll work for SSRAA "as long as they put up with me."

He acknowledges that his career has been relatively trouble-free, considering the myriad risks that come with running commercial boats in Southeast Alaska. But so-called Bobby Saltwater credits more than experience and skill.

"One thing I know is, if you're going to be in this business for this long, you'd better have an angel on your shoulder."

Cost recovery 101 CONTINUED FROM 1

self-marketing, in which the association formed partnerships with processors and marketers. Staff expended a great deal of effort on these business activities. For the past three years, SSRAA has gone with a more conventional processor-licensing method: we simply license one or more processors to catch returning fish for a royalty on a round-pound basis. Each year since 2014, SSRAA has licensed a processor to catch and tender Neets Bay salmon, and we're set up to do it again for the summer of 2017.

One new cost recovery idea for 2017 is to conduct an early-season cost recovery fishery in June at Neets Bay, targeting the king salmon return to extract maximum value from these fish—and to be in position to catch summer chum that return early. (In 2016, substantial numbers of summer chum entered the bay weeks earlier than is typical). Another essentially new cost recovery effort in 2017 is coho harvest at the Klawock River Hatchery weir.

Last year's cost recovery at Klawock River simply continued the program of the previous operator, Prince of Wales Hatchery Association. The 2017 program is a fresh start, licensing that opportunity.

Final details on these cost recovery programs will be hammered out in meetings of a committee and the Board of Directors on March 7-8. We'll outline cost recovery in the April issue of *Spawning News*. The request for proposals for SSRAA cost recovery sites will be posted online and mailed to interested processors about March 15, with a mid-April deadline for responses.

Cost recovery will always be vital for SSRAA's viability, but it's also fraught with the risks all fishermen face: the availability of fish to catch and the price of those fish once we catch them.

Here's to the anticipation that both aspects of our mutual livelihoods turn out well in 2017! We wish good fishing and fair weather to all of you.

FINANCIAL STATEMENTS

Southern Southeast Regional Aquaculture Association

For the years ended June 30, 2016, and June 30, 2015

BALANCE SHEET

	2016	2015
CURRENT ASSETS:		
Cash and cash equivalents	\$ 10,051,794	\$ 10,095,426
Other current assets	615,271	1,553,921
Total Current Assets	10,667,065	11,649,347
PROPERTY, FIXTURES and EQUIPMENT, net	12,150,659	12,067,812
OTHER ASSETS	277,778	271,566
TOTAL ASSETS	23,095,502	23,988,725
LIABILITIES and NET ASSETS		
Current liabilities	1,439,327	3,957,352
Long term liabilities	5,119,116	3,448,650
Total Liabilities	6,558,443	7,406,002
NET ASSETS	16,537,059	16,582,723
TOTAL LIABILITIES AND NET ASSETS	\$ 23,095,502	\$ 23,988,725

INCOME STATEMENT

REVENUE		
Fish harvest revenue	\$ 6,451,290	\$ 8,282,457
Grant revenue, fisheries enhancement tax	2,375,149	2,425,080
Contract and agreement revenue	613,357	1,497,867
DIPAC cost recovery income	1,854,000	530,000
Tours	129,605	205,868
Other	96,808	39,080
Total operating revenue	11,520,209	12,980,352
OPERATING EXPENSES		
Hatchery operations	9,452,096	7,718,295
General and administrative expenses	2,136,619	1,935,435
Total operating expenses	11,588,715	9,653,730
Change in net assets from operations	(68,506)	3,326,622
OTHER REVENUE	22,842	457,707
Change in net assets	(45,664)	3,784,329
NET ASSETS, BEGINNING OF YEAR	16,582,723	12,798,394
NET ASSETS, END OF YEAR	\$ 16,537,059	\$ 16,582,723

CASH FLOWS

NET CASH PROVIDED BY (USED FOR) OPERATING ACTIVITIES	\$ (703,645)	\$ 5,756,631
NET CASH USED FOR INVESTING ACTIVITIES	(1,010,453)	(2,726,982)
NET CASH PROVIDED BY FINANCING ACTIVITIES	1,670,466	141,111
NET (DECREASE) INCREASE IN CASH	(43,632)	3,170,760
CASH AND CASH EQUIVALENTS		
Beginning balance	10,095,426	6,924,666
Ending balance	\$ 10,051,794	\$ 10,095,426

Complete audited financial statements for SSRAA can be obtained from the SSRAA offices.
907-225-9605 admin@ssraa.org 14 Borch St. Ketchikan AK 99901

Troller wins his first term on association's board of directors

SSRAA ballots counted in December brought one new member to the board of directors and returned three incumbents to board service.

Brian Warmuth began his first three-year term as a troll representative in January after finishing first in balloting by his gear group.

Three incumbents won re-election. Seiner Dan Castle of Ketchikan, troller Tom Fisher of Ketchikan and gillnetter Brennon Eagle of Wrangell remain on the board for three-year terms.

Nominations sought for five board seats

Nominations are open for a handful of seats on the SSRAA Board of Directors.

SSRAA encourages salmon fishers to turn in nominations for five gear seats coming open in January 2018. Nominations are due in mid-October.

Gear groups will elect board members to two seine seats; one gillnet seat; one power troll seat, and one hand troll seat. All are three-year terms.

Nominations must be in writing and must include the permit holder's name; address; vessel name; and phone number. Include a brief statement of interest with self-nominations; if you're nominating another fisher, provide a short summary of the nominee's background. Limited-entry permit holders nominate only people in their gear groups. Nominees must be active southern Southeast commercial salmon permit holders.

Nominations are due at the SSRAA office on Oct. 16, 2017.

If you're interested in serving on the SSRAA board of directors, or want to nominate a fellow gear-group fisher, please submit nominations to ...

- SSRAA, Attn: Liz Jones, 14 Borch St., Ketchikan, AK 99901

You may also send nominations via email to ...

- lizj@ssraa.org

For more information, call the association at 907-225-9605.



April 5

Regional Planning Team

Sitka