



Freshwater Fisheries  
Society of BC

ANNUAL REPORT  
2013-2014



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*Craig Schelter and Tony Andrychuck stocking Echo Lake just outside Campbell River with fall catchables from VITH.*



## FRESHWATER FISHERIES SOCIETY OF BC 2013-2014 HIGHLIGHTS



**MAKING FISHING MORE ACCESSIBLE** – Partnering with provincial, municipal, and local organizations, we continued to create easy-to-access fishing opportunities with new piers at Hastings Park in Vancouver, Edith and Walloper Lakes near Kamloops, Yellow Lake near Penticton, and Greeny Lake near 100 Mile House.



**RECOGNITION FOR INNOVATION** – We were awarded the Canadian Industry Program for Energy Conservation 2014 Leadership Award and an Award of Excellence by the American Fisheries Society's Fish Culture Section for the development and implementation of our airlift technology to conserve electricity and groundwater for hatcheries.



**SAVING THE NECHAKO STURGEON** – Thanks to contributions from the Province, Rio Tinto Alcan, DFO, FFSBC and the District of Vanderhoof, the funding goal for the Nechako White Sturgeon Conservation Centre was reached in March 2013. Construction of the new facility was completed on time and on budget in March 2014.



**A VERY SPECIAL FISH RELEASE** – the Honourable Steve Thomson, Minister of Forests, Lands and Natural Resource Operations, along with the City of Coquitlam mayor and council, local MP's, students and residents, joined us in the ceremonial release of the Society's 95 millionth fish since its formation in 2003.



**WE OPENED OUR DOORS** – As part of our ongoing 10 year anniversary celebration, we opened our doors to the public. Thousands of BC residents joined us at open house events at our hatcheries.

## A MESSAGE FROM OUR PRESIDENT AND BOARD CHAIR



*Don Peterson, President*

**On behalf of the Board of Directors and our senior management team, we are pleased to present the 2013-2014 Annual Report for the Freshwater Fisheries Society of BC (FFSBC).**

The FFSBC was formed in 2003 with a clear mandate: “To conserve, restore and enhance the freshwater fish resources of BC for the benefit of the public”. As we now begin our second decade we continue to work diligently towards delivering this mandate and realizing our Vision for BC to have “The Best Freshwater Fisheries in North America.”

To be successful over the long term the Society needs to sustain a healthy financial position. Freshwater fishing licence revenue is our primary source of funding so we were pleased to see modest growth in fishing licence sales over the past year. This licence revenue growth along with strong returns from our investment fund and operational savings allowed us to finish the year in surplus position.

Developing and sustaining angler activity and encouraging youth to fish are key priorities that require us to market and promote freshwater fishing and to work with the management agencies and provincial fish managers to improve fisheries performance. Our Learn to Fish Program was enjoyed by over 26,800 children and adults this year bringing our multi-year total to over 120,000 participants. Work under our science partnerships program continues to focus on our strategic priorities including understanding angler behavior, improving the quality and performance of hatchery fish and stocked lake fisheries.

The province-wide fish stocking program is our core business and where the majority of our staff and financial resources are focused. The stocking program supports 50% of all sport fishing on lakes in BC, generates about \$24 for every dollar invested and plays a key role in wild fish conservation. This year 100% of the province’s stocking requests were successfully delivered including 7.3M trout, char, kokanee and sturgeon that were stocked into 766 public lakes and streams.

We recognize that angling licence dollars are precious and have identified reducing energy and water consumption as ways to economize. This year we made substantial progress towards our goal of a 40% reduction in energy consumption at our major hatcheries. New water reuse technology (“Air-Lift”) that was developed by FFSBC has now been installed at Vancouver Island, Clearwater and Summerland hatcheries and planning is underway for our Fraser Valley and Kootenay facilities. FFSBC received awards from the *American Fisheries Society* and the *Canadian*



*Jon Pew, Board Chair*

*Industry Program for Energy Conservation* for this accomplishment and we have also signed a licensing agreement with PR Aqua to manufacture and market this technology to other fish culture organizations in North America. We extend our appreciation to BC Hydro for their ongoing financial support for our energy conservation programs.

The Society continues to work with management agencies in support of sturgeon conservation programs on the Kootenay, Columbia and Nechako rivers and this year a special highlight was the successful construction of the Nechako White Sturgeon Conservation Centre in Vanderhoof. This \$5.3M state-of-the-art facility was completed on budget and on time – and ready for operation in the spring of 2014. We thank our partners the District of Vanderhoof, Rio Tinto Alcan, and the federal and provincial governments who helped to make this possible.

Success is achieved through a team effort and we wish to extend our sincere gratitude to our partners, the FFSBC's Board of Directors and to all employees of FFSBC. Your dedication, professionalism and creativity are the reasons for the Society's success – it simply would not happen without you!

Don Peterson, President  
Jon Pew, Chair  
Freshwater Fisheries Society of BC

*Thompson River steelhead  
caught by Jeff Taylor from  
Nanoose Bay.*





*Dan Krenz, seasonal fish culturist,  
with a fish on in the Skagit River.*

## WHO WE ARE



*Outgoing Chair, Ev Van Eerden and his wife Audrey were honoured at our June 2013 Board Meeting.  
L-R: Tim Yesaki, Marla Zarelli, Jon Pew, James Gordon, Dana Atagi, Andrew Wilson, Don Krogseth, Audrey Van Eerden, Ev Van Eerden, Gord Argue, Bill Camden, Adrian Clark, and Don Peterson*

**FFSBC was registered under the BC Societies Act in March of 2003 as a private, not-for-profit organization with a mandate to conserve and enhance freshwater fish resources in BC for the benefit of the public.**

The FFSBC Board of Directors is made up of five independent members, the Society's President and two members appointed by the province. The Board sets policy, provides strategic direction and monitors the financial and operational health of the organization.

The Society's President is responsible for the ongoing operations and management of the organization.

The purposes of the FFSBC are to provide fish culture and stocking services that support freshwater recreational fishing and the conservation and restoration of wild freshwater fish; to promote and market recreational fishing; and to inform and educate the public about fish, conservation and fishing.

Primary funding for the FFSBC comes from its 53% share of revenue from provincial freshwater angling licence fees. The FFSBC also receives annual payments from the province for conservation services and for hatchery infrastructure. FFSBC also generates revenue through the delivery of programs, products and services.

### 2013-2014 BOARD OF DIRECTORS

**Chair:**  
Jon Pew

**Vice-Chair:**  
Donald Krogseth

**Secretary/Treasurer:**  
James Gordon

**Director:**  
Jon Pew

**Director:**  
Bill Camden

**Director:**  
Dana Atagi

**Director:**  
Andrew Wilson

**President:**  
Don Peterson  
(ex-officio)

## OUR VISION

# THE BEST FRESHWATER FISHERIES IN NORTH AMERICA



*This beautiful Blackwater rainbow trout was stocked into Dragon Lake just three years ago.*

## OUR STRATEGIC OBJECTIVES

- ▶ To steadily increase the numbers of anglers.
- ▶ To have thriving recreational fisheries in BC.
- ▶ To be recognized as the leader in wild freshwater fish culture services and technology.
- ▶ To play a key role in the conservation and restoration of BC's wild fish populations.
- ▶ To be a valued employer and a respected partner.
- ▶ To be a sound and successful non-profit business.

## OUR CORE VALUES

### PEOPLE ARE OUR MOST IMPORTANT ASSET

We attract, develop, and retain high quality employees to help secure a successful future for the FFSBC.

### ENVIRONMENTAL INTEGRITY

We operate in an environmentally responsible manner and are advocates for the fish, habitat, and freshwater resources of BC.

### CLIENT FOCUS

We deliver services and products that meet the needs of anglers and our other clients.

### ACCOUNTABILITY

We set measurable goals and provide the authority, training, and resources needed to achieve them. We live within our means.

### PARTNERSHIPS

We collaborate with other organizations to enhance the recreational fishery, to conserve and restore the fisheries resource, and to improve our effectiveness as an organization.

### ADAPTABILITY

We adapt to changing business and operating conditions by adopting innovative solutions (including the appropriate application of technology) in order to deliver superior products and services within our financial capacity.

### OPEN COMMUNICATIONS

We communicate openly and honestly to build mutually respectful working relationships within the Society and with our partners, our clients, and the public.

## WHAT WE DO

**We work in close cooperation with the provincial government, which is responsible for the management of BC's fisheries resource.** At FFSBC we:

- ▶ Culture trout, char and kokanee and stock them into lakes and streams throughout BC to support recreational fisheries.
- ▶ Create new freshwater fishing opportunities and improve access to fisheries.
- ▶ Conduct research to improve stocked fisheries, cultured fish performance and angler satisfaction.
- ▶ Deliver conservation fish culture services to assist with the recovery of fish species at risk.
- ▶ Promote and market sport fishing.
- ▶ Educate the public regarding environmental, economic, social and cultural benefits of recreational fishing and fish conservation.

*Rainbow trout yearlings being loaded onto a Clearwater Trout Hatchery truck. The hatchery releases fish into approximately 330 lakes in BC's interior each year.*





*Kirstin Gale and Marcus Boucher, research biologists, sampling kokanee as part of our ongoing efforts to improve the growth, survival and quality of this fish stock.*

## OUR EMPLOYEES

**The FFSBC is supported by highly specialized and experienced employees who are committed to BC's fisheries and to meeting the Society's vision and strategic objectives.**

- Our organization has four divisions: Sport Fishing, Operations, Science, and Corporate Services.
- We operate six major hatcheries in Abbotsford, Clearwater, Duncan, Fort Steele, Summerland and Vanderhoof as well as a trout distribution centre in Prince George, nine seasonal egg collection stations, the provincial fish health laboratory in Duncan, research offices at Abbotsford and UBC, and the Society's corporate headquarters in Victoria.
- We employ about 71 regular staff and 32 seasonal staff at various locations throughout British Columbia.

## OUR MANAGEMENT TEAM

- Don Peterson, President
- Marla Zarelli, Executive Coordinator/  
Corporate Secretary
- Tim Yesaki, Vice President, Operations
- Adrian Clarke, Vice President, Science
- Ian McGregor / Andrew Wilson,  
Vice President, Sport Fishing
- Ray Billings, Vice President,  
Strategic Initiatives/Energy Manager
- Melina Barnes, Chief Financial Officer
- Tammy Longbottom, Director,  
Human Resources
- Craig Schelter, Production Manager
- Brian Martin, Manager,  
Vancouver Island Trout Hatchery
- Steve Arnold, Manager,  
Fraser Valley Trout Hatchery
- Craig Schelter / Kyle Girgan, Manager,  
Summerland Trout Hatchery
- Mark Green, Manager,  
Clearwater Trout Hatchery
- Ken Scheer, Manager,  
Kootenay Trout Hatchery
- Cory Williamson, Manager, Nechako  
White Sturgeon Conservation Centre
- Jim Powell, Manager, Program Support  
and Business Development
- Sherry Mead, Manager,  
Fish Health Services

## OUR PARTNERS

### Partnerships are essential to achieving our vision.

Our most important partner is the Province of BC through the Ministry of Forest, Lands and Natural Resources and the Ministry of Environment. We work very closely with the Fish, Wildlife and Habitat Management Branch and regional fisheries biologists on many initiatives, including the development and delivery of the provincial stocking program, improvements to the management of sport fishing and the delivery of endangered species recovery initiatives.

Another key partner is the Habitat Conservation Trust Foundation, which has been a key supporter of our Learn to Fish, Fishing in the City and angler marketing programs.

Contributions from our partners, big or small, are important to our organization.

We thank them all for their support, including those listed on the next page:



*Our 10th Anniversary celebrations included a ceremonial fish stocking with Minister Steve Thomson. Also pictured are MLA Douglas Horne, Don Peterson, Myki, and MLA Linda Reimer.*

**UNIVERSITIES**

Simon Fraser University  
 University of British Columbia  
 University of Calgary  
 University of Northern British Columbia  
 University of Windsor  
 Vancouver Island University

**FIRST NATIONS**

Kootenai Tribe of Idaho

**PUBLIC ADVISORS**

Brian Chan (Kamloops)  
 Nick Basok (Chilliwack)  
 Rod Hsu (Coquitlam)  
 Sean Simmons (Prince George)

**PUBLIC ORGANIZATIONS**

BC Hydro and Power Authority  
 BC Parks  
 City of Duncan  
 Columbia Basin Fish and Wildlife  
 Compensation Program  
 Columbia Basin Trust  
 Community Gaming Grants  
 (Province of British Columbia)  
 Department of Fisheries and Oceans  
 Canada  
 District of Vanderhoof  
 Ministry of Forests, Lands and Natural  
 Resource Operations  
 Natural Sciences and Engineering  
 Research Council (NSERC)



*Kootenay sturgeon release near Creston, BC.*

**PRIVATE ORGANIZATIONS**

Camping and RVing British Columbia  
 Coalition  
 Gibbs-Delta Tackle  
 Rapala Canada  
 Rio Tinto Alcan Inc.  
 Teck Highland Valley Copper  
 Vancity Credit Union

**NON-PROFIT AND OTHER  
ORGANIZATIONS**

BC Wildlife Federation and affiliated  
 members  
 Sport Fishing Institute of BC  
 Columbia River White Sturgeon Recovery  
 Initiative  
 Family Fishing Society of BC  
 Habitat Conservation Trust Foundation  
 Kootenai River White Sturgeon  
 Recovery Team  
 Nechako White Sturgeon Recovery  
 Initiative

## SPORT FISHING DIVISION

**The Sport Fishing Division leads initiatives aimed at developing and promoting BC sport fishing on behalf of the FFSBC and its partners.** Sustaining freshwater fishing in BC is important as it is a healthy outdoor activity that creates significant social, economic and environmental benefits for British Columbians.

The FFSBC strategic plan guides all our investments in sport fishing activities. The plan advocates for an angler-focused approach to recreational fisheries management in BC and outlines strategies to maintain and rebuild angler interest in fishing. The following projects were delivered in support of the strategic plan over the past year:

### LEARN TO FISH PROGRAM

The Learn to Fish program was developed to introduce recreational angling to youth and their families and to foster environmentally responsible anglers. Participants learn about freshwater ecosystems, fish biology, fishing techniques and ethics, and have a chance to catch a fish themselves. In 2013:

- ▶ 26,850 youth and their families took part in Learn to Fish sessions – for a total of 120,000 participants since the program's inception in 2006.
- ▶ 871 sessions were held at locations across BC, including the Fraser Valley Trout Hatchery in Abbotsford, the Kootenay Trout Hatchery near Cranbrook and numerous lakes across the Lower Mainland, southern Vancouver Island and the Thompson/Okanagan.
- ▶ New programs were initiated to provide additional opportunity for anglers including 5 Learn to Ice Fish events, and 11 Learn to Fly Fish events.

*Since 2006 over 100,000 children and parents have attended our Learn to Fish programs.*





*School children in the East Kootenays hold up a paper cut-out of an adult white sturgeon.*

Primary funding for Learn to Fish is generously provided by the Habitat Conservation Trust Foundation and the Columbia Basin Trust Fund – but demand for the program continually exceeds its funding. Other sponsors are now being invited to play a role, and we anticipate additional resources in the next fiscal year.

### **ROD LOAN PROGRAM**

The Rod Loan program was initiated as a means of increasing access to fishing by providing rods, reels, and fishing gear to potential anglers at a number of venues around the province. The rod loan program was initiated in 2012 and has proven to be very popular with both resident and tourist anglers. In 2013:

- 4,830 rods were loaned out (up from 2,500 in 2012) from 12 locations around the province.

### **FISHING IN THE CITY**

The Fishing in the City program is designed to provide fishing opportunities close to home for urban residents. This is done through increased stocking frequency, improved access and promotion of fishing opportunities on urban lakes. With continued support from provincial fisheries managers, the Habitat Conservation Trust Foundation and several municipalities across BC, Fishing in the City is now a highly popular program that attracts many new and lapsed anglers, most of whom are only willing to travel short distances to fish.

This program has been operating for six years and has far exceeded expectations. Our research shows that:

- Approximately 50% of anglers from urban areas state that these lakes are their number one fishing destination.
- Anglers under 25 and young families make up a significant proportion of the new/lapsed anglers at Fishing in the City lakes.
- Over 10,000 licences were sold to new/lapsed anglers on Fishing in the City lakes in 2011/2012.

FFSBC is now looking to partner with other municipalities to expand this highly successful program to even more urban centres across BC.

## FISHING BUDDIES PROGRAM

The Fishing Buddies program works with stakeholder groups around the province to encourage experienced anglers to introduce new people to fishing. Recruitment efforts also take place on-line and at Learn to Fish sessions, Family Fishing Weekend, tradeshows and other outreach events. The results speak for themselves:

- In 2013, 35,000+ Fishing Buddies received our e-newsletter, with monthly fishing tips from experts and current news on Society programs.
- 625 people renewed their Fishing Buddies promise during our March 2014 campaign. They each pledged to introduce at least one new person to fishing in 2014.

## FAMILY FISHING WEEKEND

The FFSBC works closely with the Family Fishing Society of BC to deliver the annual BC Family Fishing Weekend on Father's Day weekend. In addition to being a licence-free weekend, a number of free community fishing events are held around the province. In 2013:

- 48 community events took place over the weekend.
- A record 17,500 youth and their families attended these events.
- FFSBC assisted by stocking fish, coordinating several of the largest events, and provided promotion and marketing support.

## PUBLIC COMMUNICATIONS

A multitude of events and media are used to ensure FFSBC is highly visible in BC, Canada and North America. Tactics include:

- Brian Chan, a former provincial fisheries biologist, now known throughout North America as an angling expert, author, speaker and TV personality, promoting sports fishing on TV and radio on behalf of FFSBC.
- FFSBC appeared at 35 public events and reached about 100,000 people last year.
- Maintaining [www.gofishbc.com](http://www.gofishbc.com) as one of the premier websites for BC fishing information.
- Delivering online marketing campaigns to increase traffic to our website and grow our followers on social media channels, including Facebook, Twitter and YouTube. The 2013 campaign resulted in our Facebook fans increasing from 3,000 in 2012 to 8,000 and the number of unique visitors to our website climbed from 102,000 in 2012 to 202,000 in 2013.
- Promoting fishing opportunities in BC through newspapers, magazine editorials and online coverage

## OPERATIONS DIVISION

*Suzanne Minor (Nature Preschool Instructor) and Marla Zarelli, Executive Coordinator release catchable sized Fraser Valley trout into Glen Lake, near Victoria, BC.*

*The Vancouver Island Trout Hatchery, located in Duncan, is home to the Fraser Valley rainbow trout broodstock, supplying eggs and fry to three other Society hatcheries for their stocking programs.*



**The Operations Division manages the Society's five major trout hatcheries, three sturgeon conservation culture facilities, a satellite fish distribution facility, nine egg collection stations and delivers stocking programs to over 750 public fisheries and conservation projects throughout the province.** In addition to fish culture services, the division is responsible for the operation, maintenance and upgrading of the fish hatcheries and their various satellite facilities.

Operations staff also assists other agencies, including federal salmon hatcheries and community salmon enhancement projects, with the culture of rainbow, cutthroat and steelhead trout at 10 satellite rearing facilities.

### FISH PRODUCTION FOR RECREATIONAL FISHERIES ENHANCEMENT

Over 7.3 million trout, char and kokanee salmon were produced in the five FFSBC hatcheries and stocked into 766 lakes and streams this year. The fish originated from approximately 50 separate fish stocks and seven distinct species. The program occurs during the spring and the fall seasons. Highlights from the past year include:

- For the second year in a row we experienced a long cool spring providing ideal conditions for the completion of all planned fish releases.
- We witnessed an exceptionally large return of spawning rainbow trout to our egg collection station on Pennask Creek. Operations staff enumerated more than 31,000 fish at Pennask Creek while normally about 20,000 are counted.
- Successful trials were run at three facilities to determine if we could produce a 200+ gram catchable trout within 12 months instead of the usual 18 months utilizing out of cycle Fraser Valley rainbow trout eggs. As a result, we have expanded this program as it effectively reduces the culture time by about 6 months with significant cost savings.

## CONSERVATION CULTURE FOR ENDANGERED FISH STOCKS

The Society plays an important role in supporting species recovery teams in their efforts to restore endangered fish populations. Currently, the Society is engaged in three major conservation fish culture initiatives for white sturgeon:

- Our funding goals of \$5.3M for construction and \$4.5M for operating a new Nechako white sturgeon conservation hatchery in Vanderhoof were met in March 2013.
- In partnership with the Kootenai Tribe of Idaho, FFSBC supports the Kootenai River White Sturgeon Recovery Program by raising sturgeon eggs to yearling-age. A total of 6,073 yearlings were released into Kootenay River tributaries (Canadian waters only in 2013) in the spring of 2013.
- Under our contract with BC Hydro to provide fish culture services for the Upper Columbia White Sturgeon Recovery Initiative – a total of 9,981 Upper Columbia white sturgeon juveniles were produced at the Kootenay Sturgeon Conservation Hatchery and released into the Upper Columbia River.

## WATER AND ENERGY CONSERVATION PROJECTS

FFSBC's Energy Conservation Program aims to continually reduce energy and water consumption to reduce our operational costs. Our major program partner, BC Hydro, continued to assist the Society with incentive funding for projects and energy studies. FFSBC has developed water reuse technology ("Air-Lift") with the potential to realize a 50% saving in electrical energy consumption in hatcheries, primarily through a large reduction in groundwater pumping. These savings are already being realized at our Vancouver Island and Clearwater trout hatcheries where major water reuse conversions have been completed. Highlights this year include:

- Achieving a 40% reduction in electrical consumption, 27% reduction in natural gas consumption and a 33% reduction in electricity and natural gas consumption costs in 2013 compared to the energy baseline year of 2008.
- We saved pumping 9.1 billion litres of water in 2013 compared to 2011 or the equivalent of 3,600 Olympic-sized swimming pools.
- Fish rearing tank replacement and airlift water reuse systems design continued at Fraser Valley, Kootenay and Summerland Trout Hatcheries. Onsite construction is slated to begin at Fraser Valley in late spring 2014, at Summerland in summer 2014 and at Kootenay Trout Hatchery in mid 2015.
- BC Hydro-funded Pump Efficiency Studies were undertaken at Fraser Valley and Clearwater Trout Hatcheries. Pump upgrade projects resulting from these studies are slated to begin at Vancouver Island, Fraser Valley and Clearwater Trout Hatcheries in fall 2014.



*Dave Mahovic displays rainbow trout eggs from Beaver Lake, near Kelowna, BC. Beaver Lake is one of the nine egg collection stations operated by the Society.*

## FISH STOCKING SUMMARY 2013-2014



*Kootenay Trout Hatchery staff seine kokanee in Norbury Creek, near Fort Steele, BC.*

PROVINCIAL REGION	RECREATION		
	Released	Biomass (kg)	Waterbodies
1 Vancouver Island	347,400	41,771	60
2 Lower Mainland	407,993	25,206	41
3 Thompson/Nicola	1,492,848	12,480	187
4 Columbia/Kootenay*	814,350	13,125	105
5 Cariboo/Chilcotin	2,252,064	15,301	92
6 Skeena	89,555	813	18
7A Omineca	582,748	6,018	54
7B Peace	52,533	1,131	18
8 Okanagan	777,319	13,361	170
<b>Total FFSBC</b>	<b>6,816,810</b>	<b>129,206</b>	<b>745</b>
1 Vancouver Island	109,118	5,297	3
2 Lower Mainland	216,721	12,727	6
6 Skeena	63,517	5,168	1
<b>Total Federal</b>	<b>389,356</b>	<b>23,192</b>	<b>10</b>
1 Vancouver Island	39,424	2,845	2
2 Lower Mainland	46,088	3,268	7
<b>ALL AGENCIES</b>	<b>7,291,678</b>	<b>158,511</b>	<b>764</b>

AGENCY	Anadromous Cutthroat	Coastal Cutthroat	Eastern Brook Char
Released by FFSBC	39,080	17,958	444,624
Biomass (kg)	2,868	1,906	2,333
Released by Federal	31,128	-	-
Biomass (kg)	2,421	-	-
Released by Public	6,824	1,439	-
Biomass (kg)	517	136	-
<b>Total Released</b>	<b>77,032</b>	<b>19,397</b>	<b>444,624</b>
<b>Total Biomass (kg)</b>	<b>5,806</b>	<b>2,042</b>	<b>2,333</b>

CONSERVATION			ALL		
Released	Biomass (kg)	Waterbodies	Released	Biomass (kg)	Waterbodies
-	-	-	347,400	41,771	60
-	-	-	407,993	25,206	41
-	-	-	1,492,848	12,480	187
16,054	1,906	2	830,404	15,031	107
-	-	-	2,252,064	15,301	92
-	-	-	89,555	813	18
-	-	-	582,748	6,018	54
-	-	-	52,533	1,131	18
-	-	-	777,319	13,361	170
<b>16,054</b>	<b>1,906</b>	<b>2</b>	<b>6,832,864</b>	<b>131,112</b>	<b>747</b>
-	-	-	109,118	5,297	3
-	-	-	216,721	12,727	6
-	-	-	63,517	5,168	1
-	-	-	<b>389,356</b>	<b>23,192</b>	<b>10</b>
-	-	-	39,424	2,845	2
-	-	-	46,088	3,268	7
<b>16,054</b>	<b>1,906</b>	<b>2</b>	<b>7,307,735</b>	<b>160,417</b>	<b>766</b>

### RELEASED BY SPECIES

Kokanee	Rainbow Trout	Steelhead Trout	Westslope Cutthroat	White Sturgeon	Lake Char	TOTAL
1,201,649	5,074,488	39,011	-	16,054	-	6,832,864
3,043	116,431	2,6259	-	1,906	-	131,112
-	-	358,228	-	-	-	389,356
-	-	20,771	-	-	-	23,192
-	-	77,252	-	-	-	85,515
-	-	5,460	-	-	-	6,113
<b>1,201,649</b>	<b>5,074,488</b>	<b>474,491</b>	<b>18,500</b>	<b>16,054</b>	<b>14,305</b>	<b>7,307,735</b>
<b>3,043</b>	<b>116,431</b>	<b>28,856</b>	<b>22</b>	<b>1,906</b>	<b>769</b>	<b>160,417</b>

## SCIENCE DIVISION

**The Science Division provides professional support and leadership for program evaluation, applied research, planning, and for product and technology development.**

The division is supported by specialists in the fields of fish culture, fish health, genetics, fish biology, and sport fisheries management. Over the past year we have continued to focus our efforts on science partnerships, providing the biological support necessary for conservation fish culture projects, stocking program optimization, technology developments, and fish health protection.

### RESEARCH PARTNERSHIPS

Significant gains have been made in developing research partnerships, which allow the FFSBC to increase research capacity, leverage funding and gain access to highly-skilled professionals and equipment that would not otherwise be available. Through partnerships with universities and funding from the federal Natural Sciences and Engineering Research Council (NSERC) and MITACS we now have nine university professors and 14 PhD, MSc and post-doctorate researchers working key issues for fisheries management in BC, including:

- ▶ Human dimensions research on British Columbia anglers (completed).
- ▶ Mechanisms impacting performance of triploid (or sterile) fish.
- ▶ Landscape management of the small lakes fisheries resource with the goal of optimizing stocked fisheries while minimizing angler effort on sensitive wild fisheries.
- ▶ Interactions between kokanee salmon and rainbow trout in small lakes.
- ▶ Effect of fish supply on angler behaviour.
- ▶ Improving survival of stocked rainbow trout in high productivity and/or high pH lakes commonly found in BC's interior.



*Dave Mahovic samples ovaries at the Pennask Lake egg collection station. Eggs are collected from wild trout each spring, transferred back to our hatcheries, and released as juvenile fish in lakes throughout the southern interior.*

### OPTIMIZATION OF THE STOCKING PROGRAM

A successful stocking program is critical to the province's recreational fishing sector as stocking already supports 50% of all angling activity on lakes and as much as 90% in some regions. For this reason, FFSBC works closely with the Province and other partners to ensure that fisheries dependent on the stocking program continue to improve year over year. In 2013 we:

- ▶ Completed development of a small lakes database that includes analysis tools, angler effort data, lake biophysical data and management goals.
- ▶ Supported the assessment of angling effort on stocked and wild fish on nearly 130 lakes in four regions via flight counts and on-the-ground surveys.



*Duaine Hardie, Derek Ingram and Tim Yesaki collecting mature rainbow trout at the Dragon Lake egg station.*

- ▶ Completed or assisted with stocking assessments on 75 lakes in five regions. Stocking assessments provide critical information regarding the survival and growth of various stocking strategies.
- ▶ Continued work on the development of sterile and all-female kokanee.
- ▶ Continued to evaluate the performance of four rainbow trout strains, including a new Carp Lake strain, in productive, less productive and mixed species lakes.

## **DEVELOPMENTS IN FISH CULTURE**

We continued to investigate new technologies and their relationship to fish culture operations. Projects for 2013/14 included:

- ▶ Development of high pH tolerant rainbow trout brood stock to revitalize fisheries in BC interior small lakes that have experienced increases of lake water pH levels.
- ▶ Ongoing research to increase the efficiency of all-female brood stock production and handling including extended XX male milt storage fertilization trials, sex-reversed female brood stock screening, and increasing early-maturation rate of sex-reversed female rainbow trout brood stock.
- ▶ Increasing the growth rate and release size of all-female triploid Blackwater rainbow trout sub-yearlings for multi-species lakes.

## FISH HEALTH MANAGEMENT

The Fish Health Section provides both diagnostic and fish health management consulting services to all FFSBC operations and provides advice to our partners, including provincial fisheries biologists. Highlights from the past year include:

- ▶ No significant viruses or diseases were isolated from fish within FFSBC facilities.
- ▶ IHNv, (Infectious Haematopoietic Necrosis Virus) was identified for the first time in wild kokanee adults at our primary kokanee egg collection site at Meadow Creek–Kootenay Lake. All eggs collected this year were destroyed and future egg collections from this location are suspended until further notice.
- ▶ The fish health lab also processed samples from wild kokanee taken from other sites in the Kootenay Lake drainage and determined that IHNv was present in three tributary watersheds to Kootenay Lake.
- ▶ The Fish Health Lab led the development of a new ploidy testing technique for white sturgeon in the Columbia River watershed.
- ▶ The fish health lab worked with the Montana Department of Fish and Wildlife in the Title 50 facility screening of the Kootenay Trout Hatchery to facilitate the movement of the Gerrard Rainbow Trout brood stock to Montana.
- ▶ *Flavobacterium psychrophilum* continues to be the most problematic pathogen in freshwater culture facilities in North America including those operated by FFSBC. The fish health lab is now exclusively using Polymerase Chain Reaction (PCR) testing to confirm *Flavobacterium psychrophilum* in suspected yellow pigmented bacterial isolates. The fish health lab is in the developmental stages of using this test on other pathogens.

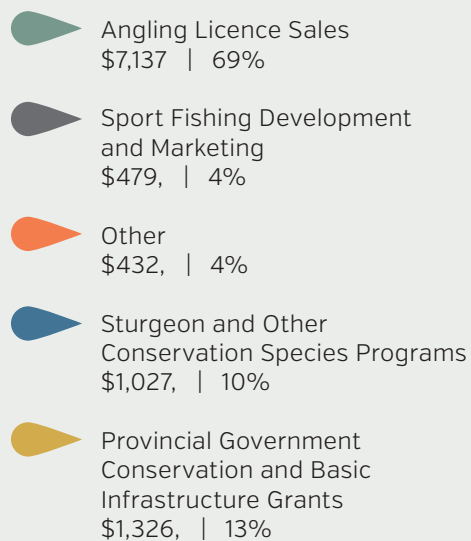
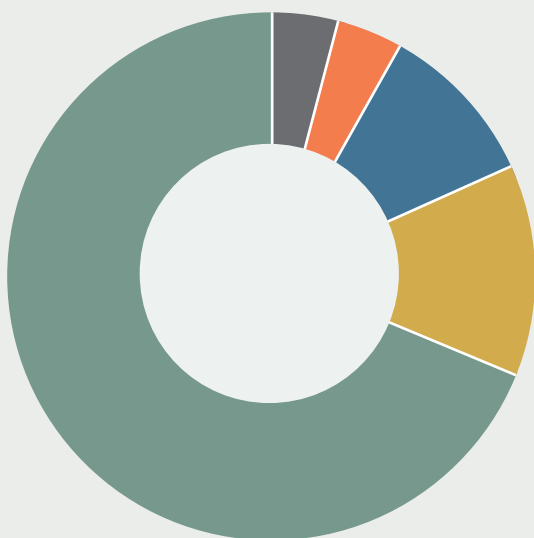
*Marking fish prior to release as part of a growth and survival assessment by the Society's research biologists.*



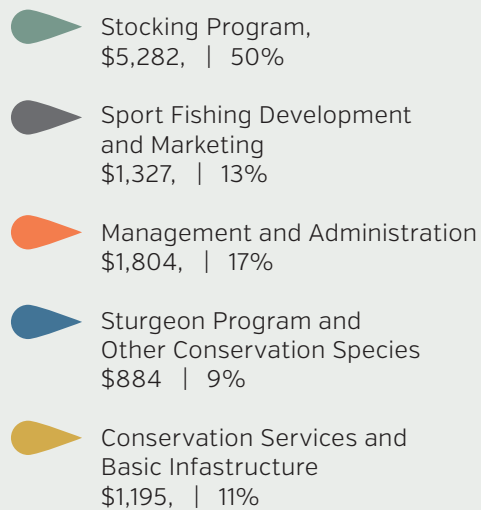
## FINANCIAL STATEMENTS

For a complete set of the audited financial statements and audit report, please contact Melina Barnes, Chief Financial Officer, at (250) 414-4212.

2014 FUNDING SOURCES ('000)



2014 PROGRAM COSTS ('000)





# Freshwater Fisheries Society of BC

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