

Oregon's Fish Screening Program

2021-2023
Biennium Report



Prepared by the Oregon Department of Fish and Wildlife
January 2023

Greetings!

Thank you for reading the Fish Screening Program's 2023 legislative report. Since 1991, the Program has provided cost share incentives, tax credits, technical assistance, and screen maintenance to encourage water users to install fish screens at their water diversions voluntarily. Fish screens prevent fish from entering irrigation diversions, municipal systems, or industrial intakes.

The Program's cost share opportunities and tax credits are very successful. The cost share assists water users with the expense of installing a fish screen. Water users may also qualify for a tax credit of up to \$5,000 per screen. Since 2000, these incentives have resulted in the voluntary installation of over 1,500 fish-friendly screens throughout the state.

The cost share program has installed 37 screening projects to date in the 2021-23 biennium. These projects leveraged \$134,669.67 in match funds. Fish Screen Projects are located throughout the state and benefit both small and large water users. Valuable partnerships have been forged with soil and water conservation districts, watershed councils, irrigation districts, municipalities, nonprofit organizations, and individual water users who volunteer to cost share projects.

Fish screens help achieve both sustainable agriculture and sustainable fisheries. Fish screens are a critical component of native fish restoration and help improve sport and commercial fisheries. While fish entering unscreened diversion risk an uncertain future, entrainment, or death, more than ninety-eight percent of young salmon and steelhead survive an encounter with a properly designed and operated fish screen.

While the Fish Screening Program has made great progress, there is still a lot of work to do. Thousands of water diversions remain unscreened in Oregon, placing fish at risk. Additionally, as the program installs more screens, our maintenance responsibility increases, taking a larger share of the Program budget and reducing the number of cost share projects funded over time. This report reflects the cooperative efforts of many partners to address the issue. Please join us in celebrating their accomplishments.

Sincerely,

A handwritten signature in blue ink that reads "Curtis E. Melcher". The signature is written in a cursive style.

Curtis E. Melcher, Director

Benefits & Accomplishments

Oregon's fish screening program is highly effective and successful, providing substantial benefits for fish and people. The program directive is to share the cost of installing fish screens with water users. This popular and cost-effective program includes monetary, major maintenance, technical and design assistance, and a tax credit to qualifying water users. The fish screening program was adopted in 1995 and is directed by ORS 496.141 to report to the Joint Committee on Ways and Means.

What is a Fish Screen?

Water from streams and rivers is redirected for irrigation, power, drinking water, and other uses. Diversions used to redirect water also pull fish into pumps, reservoirs, irrigation canals, and fields – reducing survival and preventing migration. Fish that reside in streams for their entire lifecycle (resident) and fish that migrate to and from the ocean (anadromous) are susceptible to entrainment into diversions. Fish screens are fish-friendly devices placed at diversion intakes that allow water to pass through while preventing fish from entering.

Benefits of Fish Screens

- Prevent fish from entering water diversions.
- More than 98% of young salmon survive an encounter with a properly designed screen.
- Improves the protection, survival, and restoration of native fish.
- Achieves sustainable agriculture and fisheries.
- Allows clean and efficient diversion of water for farms, cities, and businesses.
- Protects restoration investments in watersheds by protecting fish produced by increased quality or quantity of habitat.
- Juvenile and adult fish are allowed to continue their up and downstream migration.
- As fish populations increase, anglers are provided with more fishing opportunities.
- Fish screens help deliver socially and economically valuable water for irrigation, drinking, and power.

Program Success

So far, during the 2021-2023 biennium, 37 fish screens have been installed, protecting 73.46 cfs of water. An additional twenty projects are planned for installation by the end of June 2023. The water users cooperating on these projects have contributed over \$134,000 in matching funds.

Projects are located throughout the state, benefiting both small and large water users. Because Oregon laws do not require the majority of diversions to be screened, most screens are installed voluntarily. Valuable partnerships have been forged with water users who volunteer to cost share projects.

Cost Share

Incentives

Incentives in the form of cost share and a tax credit encourage water users screen their diversions. As a result, over 1,500 fish screens have been installed throughout Oregon since 2000.

Cost Share Grants

Water users can apply for cost share funding and receive financial help to install a fish screen by cost sharing their project with ODFW. Water users can provide cash, materials, or in-kind services for their portion of the project.



A three-bay rotary drum screen installed in the John Day River.

Installation, Review, and Inspection

- Screen projects can be installed by ODFW or the water user.
- Technical assistance
- ODFW ensures that state and federal fish screening criteria are met by reviewing project designs.
- ODFW inspects and certifies the project once it has been installed.

Oregon State Tax Credit

Water users may be eligible for a tax credit of 50%, up to \$5,000, of the cost of installing a new screen. The screen does not need to be cost shared or installed by ODFW. Since 1995, \$836,062.45 in State tax credits have been granted.

*During the report period,
30 tax credits were issued
totaling \$45,883.27*

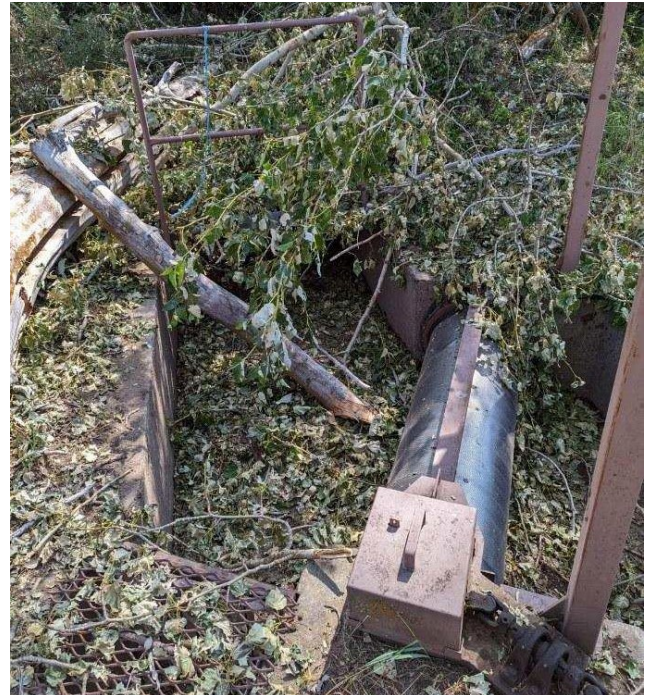
Fish Screens Maintenance

The Program has maintained over 1300 fish screens during the 2021-2023 biennium. Maintenance of fish screening structures is an important part of the Screens Program. While most water users that enter the cost share program are responsible for minor maintenance, screens that are not maintained by the Program are often inadequately maintained – increasing major maintenance costs, reducing the effective lifespan, diminishing the State’s return on investment, and leaving fish vulnerable to loss. In addition, ODFW is responsible for all major maintenance at fish screens installed through our cost share program that are under 30 cfs.

As funds allow, ODFW staff maintain fish screening structures to ensure they operate to protect fish adequately. Typical maintenance includes the following:

- inspection to determine maintenance needs
- remove accumulated sediment and debris
- lubricate moving parts
- replace worn or damaged parts, including seals, screen material, power systems, and other parts
- adjustment to ensure proper operation

As the Program continues to fund and install new screens, the required maintenance responsibility and costs also increase. As a result, proportionally more money goes to maintenance over time.



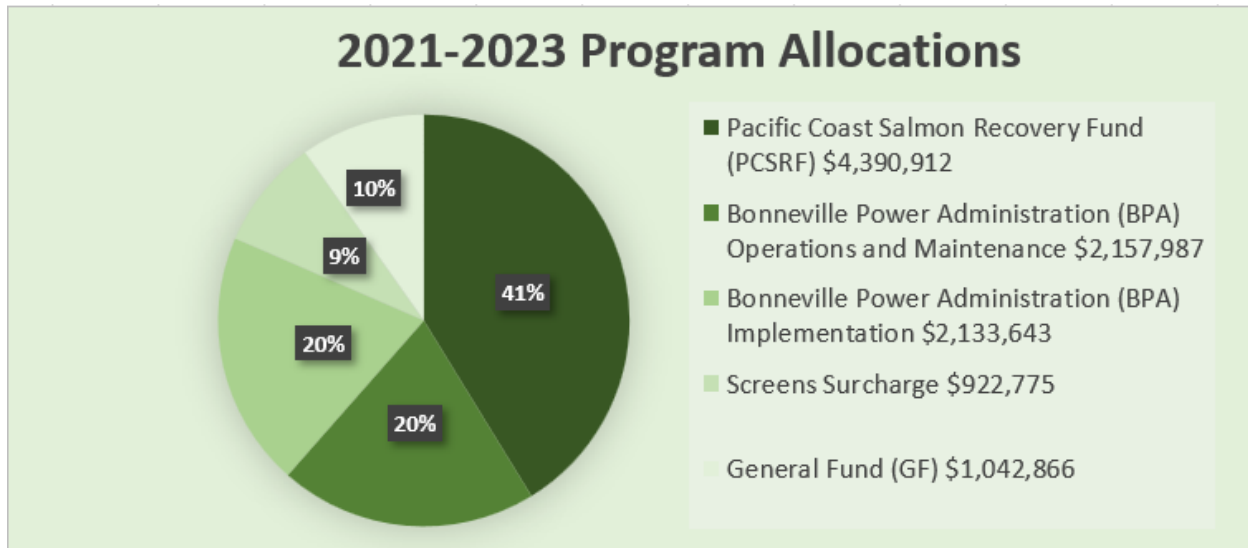
This screen was repaired after a windstorm dropped significant debris.

Funding for Maintenance

Funding for maintenance varies throughout the state. In the Columbia Basin, Bonneville Power Administration provides operation and maintenance funding. In areas with anadromous fish, Pacific Coast Salmon Recovery Funds provide some funding. ODFW utilizes license and general funds to address additional maintenance needs.

Budget Analysis

Budget information provided is for the entire Fish Screening and Passage Program. Fish Passage projects and associated costs implemented through that program are not included in this fish screen report.



Federal Funding

Bonneville Power Administration

Operations and Maintenance Funding

BPA is a major source of funds for screen maintenance in the Columbia River Basin and is critical to continued fish protection

Implementation Funding

BPA funds are used to install new screens and replace some fish screens in the Columbia River Basin. The screens being replaced are worn out, damaged, or do not meet current fish protection needs.

Pacific Coast Salmon Recovery Funds

The majority of the cost share program is funded by PCSRF. Funds are used toward engineering and construction of fish screens, project development, and some maintenance. These funds are only eligible for projects that benefit anadromous fish.

State Funding

State funds fluctuate every biennium; the sport fishing license surcharge depends on license sales.

General Fund

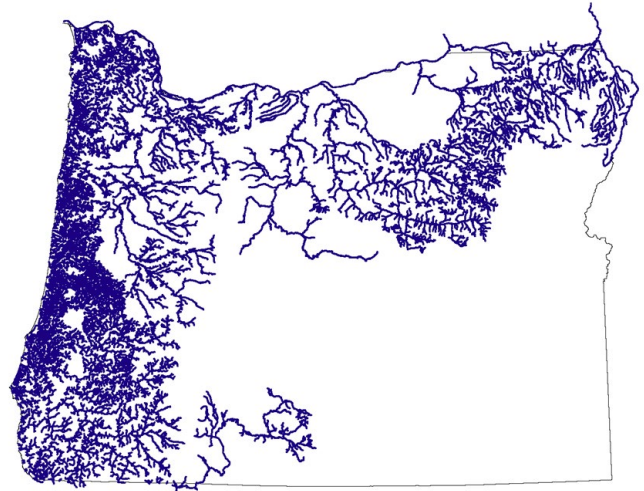
General funds support project construction, maintenance, and program implementation.

Sport Fishing License Surcharge

A 75-cent surcharge on Oregon sport fishing licenses is dedicated to the Fish Screening Program. These funds are used for fish screen maintenance, construction, the Fish Screening Task Force, and program support.

Funding Challenges

- ❖ PCSRF funds can only be used to benefit anadromous fish. This is the Program's primary funding source for new construction and replacement screens. Other funds are needed to support resident fish protection.
- ❖ Costs have greatly risen, which reduces the amount of work that can be completed.



PCSRF funds can only be used in the areas shown in blue above.

Program Oversight

A seven-member citizen task force is appointed by the Oregon Fish and Wildlife Commission to advise ODFW regarding fish screening policy, funding, and technology issues. The Task Force members represent agriculture, fishing and fish conservation, and the public-at-large. Members can serve up to six years on the Task Force.

Fish Screening Task Force Members 2022		
Task Force Member	Representing	Location
Darin Olson	Agriculture	Salem
Kristin Bishop	Fishing and Fish Conservation	McMinnville
William Freeland	Fishing and Fish Conservation	Springfield
Judith Barkstedt	Fishing and Fish Conservation	Portland
Greg Harris	Agriculture	Hermiston
Alexis Vaivoda	Public-at-Large	Hood River
Marc Thalacker	Agriculture	Terrebonne

Research and Development

Currently, a lack of staff and resources has reduced the ability of the Program to continue research and development of new technologies. However, ODFW remains committed to developing innovative fish screen technology, improving effectiveness, and decreasing costs to implement and maintain projects. Examples of research and development activities include:

- Using tagged fish in the John Day basin to estimate the impact of unscreened diversions.
- Exploring which types of batteries work best to operate screens in freezing conditions.
- Working on efficient methods to modify a screen from paddle wheel driven to solar power.
- Designing and sharing DIY screen plans for small domestic pump diversions.
- Developing plans and implementing prefabricated screen boxes.



Installing a prefabricated screen box resulted in many efficiencies, including a quicker project, the ability to transport to a site that was difficult to access with a concrete truck, and the fabrication was completed during the off-season when workloads at the screen shop are more manageable.

Screens Installed July 1, 2021 to December 31, 2022

Fish screens come in a wide range of types and sizes including pump, cone, rotary drum, traveling belt, and panel screens. So far this biennium, 37 fish screens have been installed protecting 73.46 cfs of water. An additional twenty projects are planned for installation by the end of June 2023.

The number of screens installed and the amount of water flow being screened are the two primary measurements used to track Program success. Flow rates are measured in cubic feet per second (CFS). 1 cfs = 448.83 gallons per minute.

The projects featured here represent the challenges posed by various locations and the diverse nature of fish screen designs.

The amount of water screened and number of projects installed are used to track Program success.

Screens Installed by Senate District		
District	# Installed	CFS
5	16	0.328
8	1	1.06
12	4	4.85
16	1	8.9
29	4	5.94
30	11	52.38
Total	37	73.46

Screens Installed by House District		
District	# Installed	CFS
9	16	0.328
15	1	1.06
23	4	4.85
31	1	8.9
57	4	5.94
60	11	52.38
Total	37	73.46

Screens Installed July 1, 2021 to December 31, 2022

County	House District	Senate District	Basin	Project Title	Stream	CFS	Project Number
COLUMBIA	31	16	Willamette	Sauvie Island	Gilbert River	8.9	S-02-0469
YAMHILL	23	12	Willamette	Finnicum Farms Pump- TC	Lambert Slough	1.3	S-02-0551
YAMHILL	23	12	Willamette	Rohde Farm Pump- TC	Lambert Slough	1.3	S-02-0552
YAMHILL	23	12	Willamette	Rockhill Farms Pump- TC	Lambert Slough	1.3	S-02-0553
MARION	23	12	Willamette	McGill Pump #3	Edgar Slough	0.95	S-02-0571
LINN	15	8	Willamette	Gilmour Pump TC	Horseshoe Lake	1.06	S-02-0582
Wasco	57	29	Deschutes	Justesen Pump TC	White River	1.62	S-05-0166
WASCO	57	29	Deschutes	Ashley Pump TC	White River	3.5	S-05-0167
GRANT	60	30	John Day	Mascall Ranch Pump Station	John Day River	4.88	S-06-0027
GILLIAM	57	29	John Day	Welp-Rock Creek #1	Rock Creek	0.57	S-06-0066
GILLIAM	57	29	John Day	Welp - Rock Creek #2	Rock Creek	0.25	S-06-0097
GRANT	60	30	John Day	NF John Day River - Cooper Pump	Day River	2.07	S-06-0178
GRANT	60	30	John Day	Fields Creek #4	Fields Creek	0.2	S-06-0354
GRANT	60	30	John Day	Fields Creek #8	Fields Creek	1.46	S-06-0358
GRANT	60	30	John Day	Fields Creek #9	Fields Creek	0.91	S-06-0359
GRANT	60	30	John Day	John Day River #24	John Day River	14	S-06-0378
Grant	60	30	John Day	John Day River-Durkheimer Pump	John Day River	0.84	S-06-0462
GRANT	60	30	John Day	JDR -- Clausen Pump Screen	John Day River	1.46	S-06-0578
Grant	60	30	John Day	Fox Creek #3	Fox Creek	2.62	S-06-0600
GRANT	60	30	John Day	NFJDR -- Erlebach Pump Screen	Pine Creek	0.64	S-06-0616
LAKE	60	30	Summer Lakes	Honey Creek Town Diversion Screen	Honey Creek	23.3	S-13-0070
Lane	9	5	Mid	Greaves TC 1	Siltcoos Lake	0.004	S-18-0030
Lane	9	5	Mid	Greaves TC 2	Siltcoos Lake	0.004	S-18-0031
LANE	9	5	Mid Coast	Marjorie Kelley TC	Woahink Lake	0.03	S-18-0034
LANE	9	5	Mid Coast	Carter Chess TC	Woahink Lake	0.05	S-18-0035
LANE	9	5	Mid Coast	Douglas Nelson TC	Woahink Lake	0.01	S-18-0036
LANE	9	5	Mid Coast	Heather Cherry TC	Woahink Lake	0.04	S-18-0037
LANE	9	5	Mid Coast	Sheldon Siewert TC	Woahink Lake	0.02	S-18-0041
LANE	9	5	Mid Coast	G.A. Cook TC	Woahink Lake	0.02	S-18-0042
LANE	9	5	Mid Coast	Ingrid Weatherhead TC	Woahink Lake	0.02	S-18-0048
LANE	9	5	Mid Coast	Jacqueline Bahr TC	Woahink Lake	0.01	S-18-0050
LANE	9	5	Mid Coast	Dan Scarberry TC	Woahink Lake	0.02	S-18-0054
LANE	9	5	Mid Coast	Melody Rinker TC	Woahink Lake	0.02	S-18-0056
Lane	9	5	Mid	Michael Hall TC #1	Woahink Lake	0.02	S-18-0058
LANE	9	5	Mid Coast	Michael Hall TC #2	Woahink Lake	0.02	S-18-0059
LANE	9	5	Mid Coast	Richard Moors TC	Woahink Lake	0.02	S-18-0063
LANE	9	5	Mid Coast	John Colwell TC	Woahink Lake	0.02	S-18-0073

Contact Information

Salem Headquarters

4034 Fairview Industrial Drive SE
Salem, OR 97302

Program Manager, Alan Ritchey

503-947-6229

Statewide Screening Coordinator, Katherine Nordholm

503-947-6259

Fiscal Analyst, Ron Hendrickson

503-947-6251

Central Point Screen Shop

1495 E Gregory Road
Central Point, OR 97502
541-826-8774

John Day Screen Shop

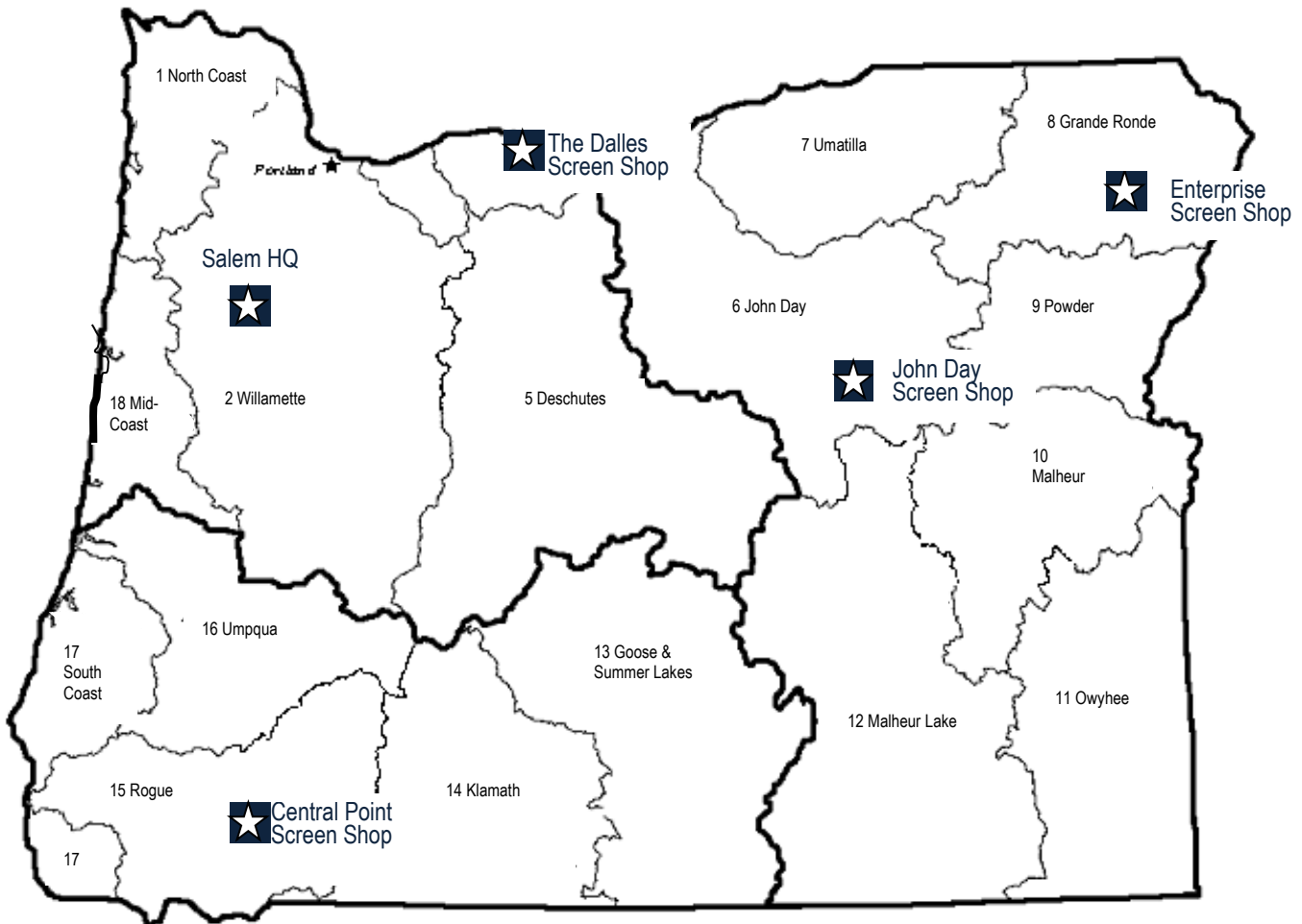
357 Patterson Bridge Road
John Day, OR 97845
541-575-0561

The Dalles Screen Shop

3561 Klindt Drive
The Dalles, OR 97058
541-296-8026

Enterprise Screen Shop

65495 Alder Slope Rd
Enterprise, OR 97828
541-426-0311



Prepared by:
Oregon Department of Fish and Wildlife
4034 Fairview Industrial Drive, SE
Salem, OR 97302