Fish Screening Program

Economic Incentives for Water Users to Protect Fish

2011-2013

Report to the Oregon Legislature

Prepared by the Oregon Department of Fish and Wildlife

Letter from the Director

Roy Elicker, Director

Oregon Department of Fish and Wildlife

Greetings!

Thank you for reading the Fish Screening Program's 2013 legislative report. Since 1991, the Program has provided cost share incentives and technical assistance to encourage water users to voluntarily install fish-friendly screens at their water diversions. Fish screens prevent fish from entering irrigation diversions, municipal systems, or industrial intakes.

The Program's cost share opportunities and tax credit are very successful and popular. The cost share assists the water user with the expense of installing a fish screen. The water user may also qualify for a tax credit of up to $5,000. Since 2000, these incentives have resulted in the voluntary installation of over 1,150 fish-friendly screens throughout the state.

The cost share program's $4 million Pacific Coast Salmon Recovery Fund project contributions have leveraged over $1 million in match to date in the 2011-2013 biennium. Projects are located throughout the state and benefit both small and large water users. Valuable partnerships have been forged with water users who volunteer to cost share projects.

The benefits of fish screens are clear. More than ninety-eight percent of young salmon and steelhead survive an encounter with a properly designed fish screen. Oregon's sport and commercial fisheries are improved and fish screens are a critical component of native fish restoration. Fish screens help achieve both sustainable agriculture and sustainable fisheries.

Thousands of water diversions remain unscreened in Oregon, placing fish at risk. While the Fish Screening Program has made great progress, there is still a lot of work to do. This report reflects the cooperative efforts of many partners to address the issue. Please join us in celebrating their accomplishments.

Sincerely,

Roy Elicker

Roy Elicker, Director

Background

History

Highly popular and cost-effective, this is one of the top fish screening programs in the nation. Its directive is to share the cost of installing fish screens with water users. The cost share includes monetary, engineering, and design assistance, as well as a tax credit.

The Fish Screening Program was adopted in 1995 after a 4-year pilot program and is directed by ORS 496.141 to report to the Joint Committee on Ways and Means. A fish passage component of the Program reports to the Legislature separately.

This report covers the time period of July 1, 2011 to December 31, 2012.

How The Fish Screening Program Benefits Water Users, Fisheries and Anglers

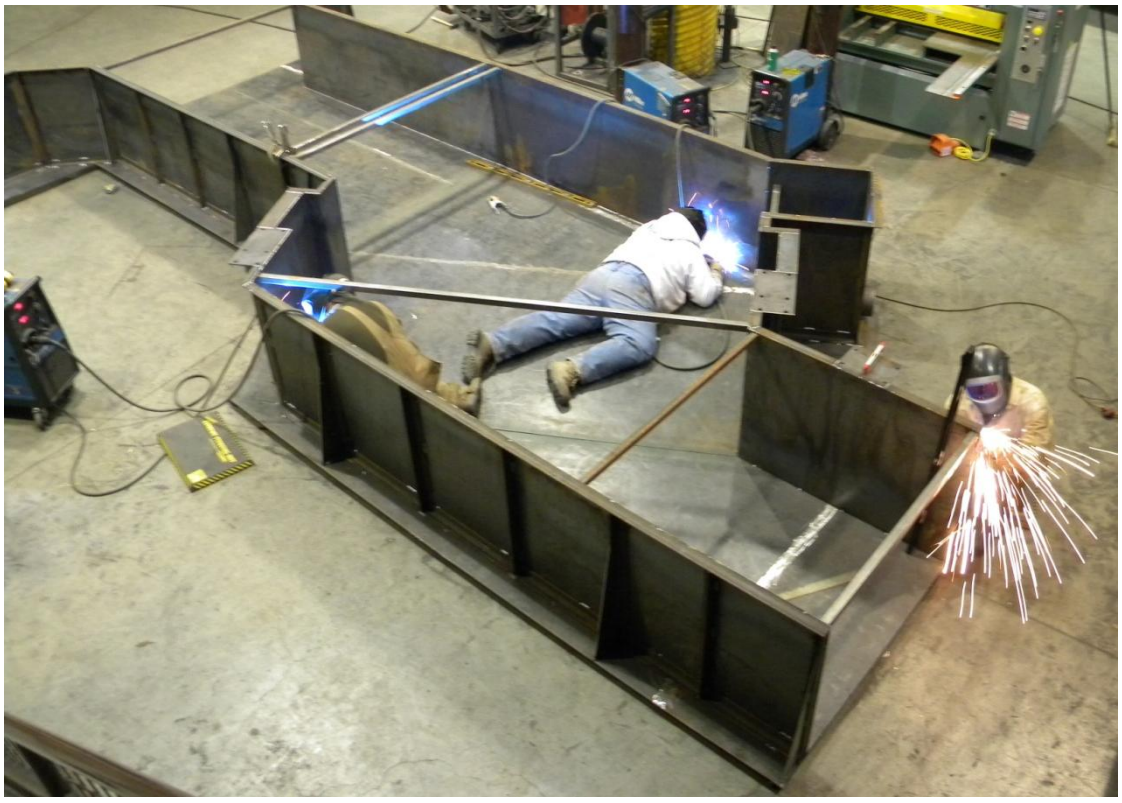
- Water users receive financial incentives to install fish screens.
- Juvenile and adult fish are not prevented from upstream and downstream migration.
- Fish populations increase, providing anglers with more fishing opportunities.

What is a Fish Screen?

Water from streams and rivers is redirected for irrigation, power, drinking water and other uses. Diversions used to redirect the water also pull fish into pumps, irrigation canals and fields — reducing survival and preventing migration. Fish screens are fish-friendly devices placed at the diversion entrance. They allow diverted water to pass through while preventing fish from entering.

The Benefit of Fish Screens at Water Diversions

- More than 98% of young salmon survive an encounter with a properly designed screen.
- Prevents fish from entering places they should not be (like an irrigation system).
- Improves the protection, survival, and restoration of native fish.
- Achieves sustainable agriculture and fisheries.



Technicians work together fabricating a screen box.

Incentives

Incentives in the form of cost share and a tax credit encourage water users to voluntarily screen their diversions. As a result, over 1,150 fish screens have been installed throughout Oregon since 2000.

Cost Share Grants

Water users can receive financial help to install a fish screen by cost sharing their project with ODFW. Water user match can include cash, other grants or in-kind services. There are two cost share opportunities:

- *Pacific Coast Salmon Recovery Funds (PCSRF)* Provides cost share up to 60% for a new fish screen or up to 100% for replacement in areas where fish live that migrate to the ocean.
- *Fisheries Restoration and Irrigation Mitigation Act (FRIMA)* Provides 65% cost share to irrigation diversion projects that have a local, state, tribal or federal sponsor or co-applicant. The 35% matching funds must be non-federal. FRIMA has provided more than $4 million in federal cost share funds to Oregon for screening and passage projects since 2001.

PCSRF and FRIMA can be combined as long as the water user contributes at least 10% of the costs. While FRIMA has been authorized by the U.S. Legislature, no new funding has been allocated since 2007.

Staff prepares a site for a new screen.

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; any newly installed fish screen may be eligible. The water user is allowed to take the tax credit over a five-year period. Since 1995, $675,390 in State tax credits have been granted.

$675,390 in State tax credits have been granted since 1995.

Application Process

Approval

Water users apply for cost share funding to install a screen at their pump or gravity diversion. Once approved, the water user and ODFW enter into a grant agreement. Costs incurred before approval are not eligible for reimbursement.

Review and Inspection

Screen projects can be installed by ODFW or the water user.

- ODFW ensures that state and federal criteria are met by reviewing project designs.
- ODFW inspects and certifies the project once installed.

Reimbursement

After the project is inspected and certified the applicant is reimbursed for their portion and may be eligible for a tax credit up to $5,000.

Budget Analysis

Summary

Budget information provided is for the Fish Screening and Passage Program. A fish passage component of the Program reports activities to the Legislature separately.

- PCSRF funds, the primary funding source of new construction and replacement screens this biennium, could only be used in areas occupied by fish that migrate to the ocean. Other funds are needed to screen for resident fish.
- Funds available for screen maintenance are very limited, impacting Agency's ability to repair and maintain fish screens.
- While funding overall remains consistent, costs have greatly risen, which reduces the amount of work that can be completed.
- $1 million additional funds were leveraged through the Program's cost share funds.

Program Funding Key	
Fund	Name
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
FRIMA	Fisheries Restoration & Irrigation Mitigation Act
M66/M76	Measure 66 or Measure 76 Lottery Funds
MA	Mitchell Act
PCSRF	Pacific Coast Salmon Recovery Fund
Screens Surcharge	ODFW Sport Fishing License Surcharge for Fish Screening Activities
USFWS	US Fish & Wildlife Service

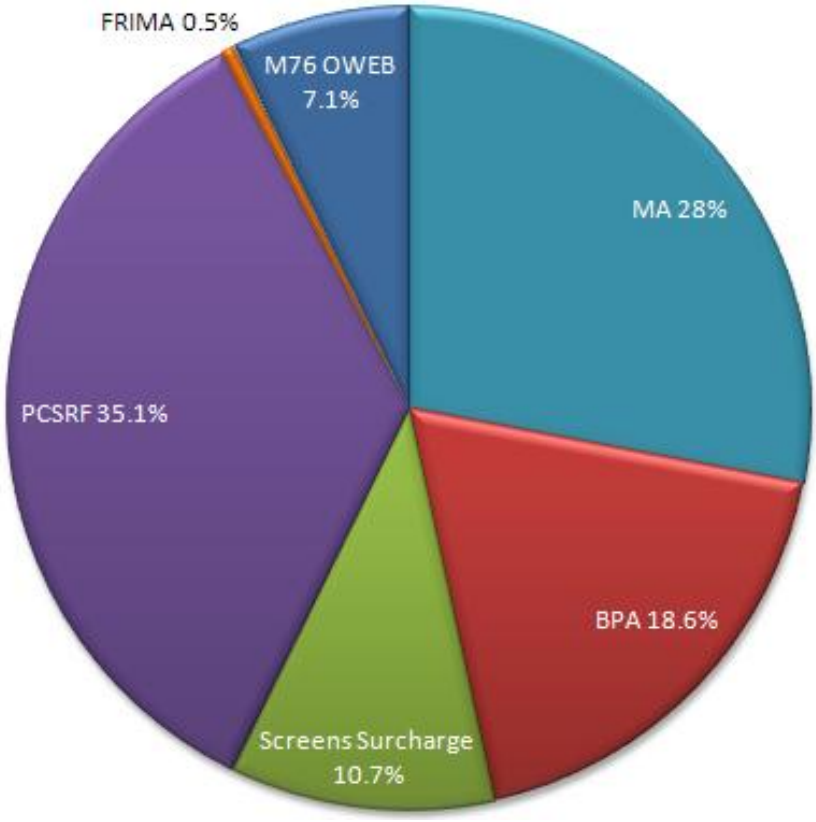
Funding Cycles

The Program's state and federal funding cycles vary and overlap, resulting in a complex budget.

New Funds Received						
OR Biennium		**2009-11**		**2011-13**		
PCSRF		$0		$4M		
M66 Capital		$3.3M		$0		
M76 OWEB		$0		$815K		
M66 Operations & Coordination		$608K		$0		
Screens Surcharge		$1.4M		$1.1M		
Calendar Year	**2009**	**2010**	**2011**	**2012**	**2013**	
BPA	$1M	$1M	$1M	$1M	Unknown	
Federal Fiscal Year	**2009**	**2010**	**2011**	**2012**	**2013**	
BOR	$0	$49K	$0	$0	Unknown	
FRIMA	$0	$0	$0	$61K	Unknown	
MA	$1.6M	$1.6M	$1.6M	$1.6M	Unknown	
USFWS	$196K	$23K	$0	$0	Unknown	

2011-2013 Fish Screening and Passage Program Funding Received

New allocations total $11,400,346



Figures represent Fish Screening and Passage Program allocated, expenditures, and funds obligated to specific projects for the 2011-2013 biennium as of December 31, 2012.

Program Allocations, Expenditures, and Obligations

Expenditures and Obligations			
Source of Funds	**Expended**	**Obligated**	**Total**
PCSRF	$ 2,532,350	$ 409,461	$ 2,941,811
M76 OWEB	$ 522,385	$ -	$ 522,385
Screens Surcharge	$ 804,734	$ -	$ 804,734
USFWS (Malheur and Upper Klamath Lake Projects)	$ 72,751	$ 743	$ 73,494
BPA	$ 1,215,630	$ -	$ 1,215,630
USFWS (FRIMA)	$ 18,153	$ 42,847	$ 61,000
NMFS (Mitchell Act)	$ 2,044,401	$ -	$ 2,044,401

Budget Analysis

State Funding

State funds fluctuate every biennium. Sport fishing license surcharge is dependent upon license sales; lottery funds are revenue dependant, and general fund dollars were eliminated.

PCSRF and M76 Funds Administered by Oregon Watershed Enhancement Board (OWEB)

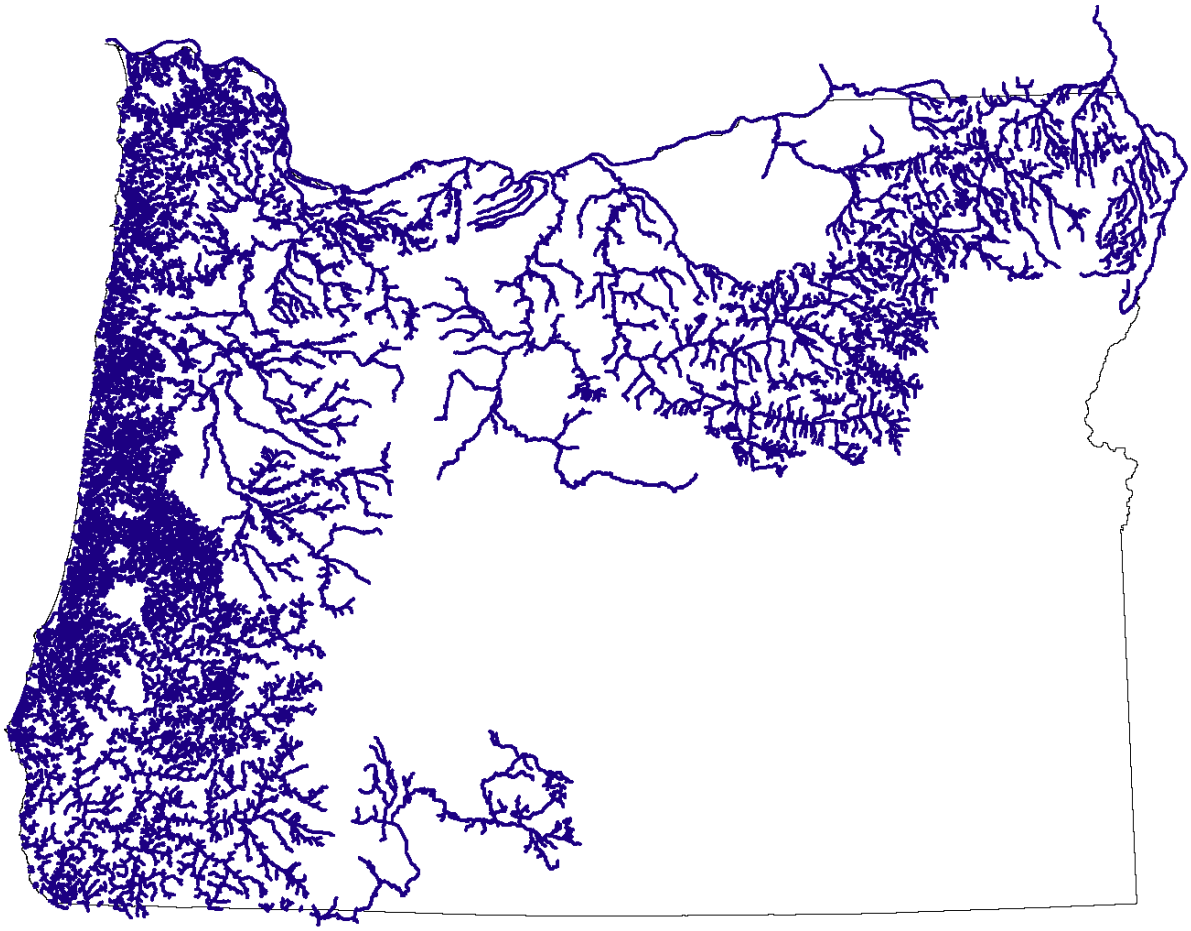
PCSRF	$4,000,000
M76 OWEB	$814,155
Total	**$4,814,155**

The majority of the Program's cost share is funded by PCSRF. Funds are used toward engineering and construction of fish screens and limited program support in areas where fish migrate to the ocean.

Limited funding from Measure 76 provides funding for cost share projects in the rest of the state and additional program support.

75-Cent Sport Fishing Surcharge (Screens Surcharge) $1,216,473

A 75-cent surcharge on Oregon sport fishing licenses is dedicated to the Fish Screening Program. These funds are used for project supplies, fish screen maintenance, administrative assistance, inventory work, and the Fish Screening Task Force.



PCSRF funds are only available in those areas shown in blue above.

Federal Funding Challenges

Federal funding is dependent on the renewal of grants. Funds are allocated in a federal fiscal year cycle with the exception of BPA, which is granted per calendar year.

Mitchell Act (MA)

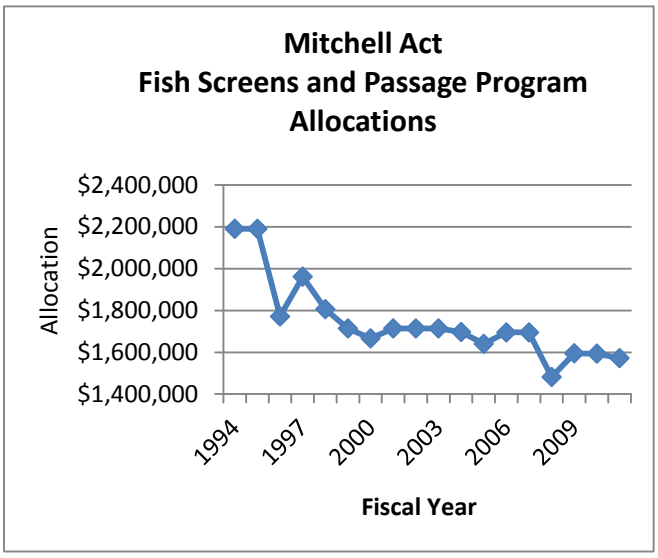
Administered by National Oceanic & Atmospheric Administration (NOAA) Fisheries

$3.2 million

Mitchell Act provides the major source of funding for fish protection through screening in the Columbia River Basin. In Oregon, MA funds have funded over 750 fish screens and provided for their maintenance.

Mitchell Act funding has decreased significantly since 1993. Meanwhile, costs for personnel, materials and transportation have increased substantially.

Due to the reduction of MA funding, the program is having a difficult time maintaining the existing MA facilities. Most of the screens have been put on a reduced maintenance schedule resulting in loss of fish at some diversion sites.



Bonneville Power Administration (BPA)

$1 million

BPA funds are used for the installation of new screens and replacement of some fish screens in the Columbia River Basin constructed under the MA program. The screens being replaced are worn out or do not meet current criteria.

Fisheries Restoration and Irrigation Mitigation Act (FRIMA)

Administered by U.S. Fish and Wildlife Service (USFWS)

$61 thousand

The $61K received this biennium was originally allocated to another state that did not spend it.

FRIMA provides up to 65% cost share to irrigation diversion projects that have a local, state, tribal or federal sponsor or co-applicant. The 35% matching funds must be non-federal.

Since 2001, FRIMA provided more than $4 million to Oregon for 18 screening, 14 passage, and 2 inventory projects. More than 2,500 cfs of water has been screened.

FRIMA provides critical funding for larger screening projects that otherwise would not be completed due to limited state, local, and private funding. Funds are often combined with state funds to increase the assistance available to water users. An important benefit of FRIMA is the ability to use FRIMA funds to conduct much needed inventory work to identify diversions needing fish screening.

The FRIMA Program was reauthorized by the Federal Legislature in 2009, but no new funding has been allocated since 2007.

Contractor and Supplier Expenditures

The Program uses private contractors when possible during all phases of a project: inventory and assessment work, engineering and design, fabrication, and construction. They generate work and income in communities throughout the state and help the Program install more fish screens than is possible with limited staff.

- Screens designed by program engineers are constructed by private contractors.
- Program engineers review plans prepared by private consultants
- Water users are encouraged to purchase pump screens and components directly from their local irrigation vendors and contractors.

Water User Match

In-kind

Water-user match can be in-kind construction or installation related materials, equipment or labor included in the cost of the project. $5,467 worth of in-kind was contributed toward the installation of 13 screens.

Cash

Water users can also provide match by purchasing materials, hiring contractors or paying ODFW for their portion of the project.

Engineers use site surveys and water requirements to design site specific screens.

Personnel

Personnel are located in Salem headquarters and at four screen shops where projects are constructed. The challenge is to install and maintain fish screens throughout Oregon through the management of multiple funding streams. $5,410,672 in Personal Service was expended as of November 30, 2012.

Location	FTE
Central Point	11
Enterprise	6
John Day	26
The Dalles	10
Salem	12
Total	**65 FTE**

ODFW staff work with a water user to install a pump screen mounting plate.

Other Program Activities

Research and Development

Program engineers and fish screen technicians continue to develop innovative fish screen technology, improving effectiveness and efficiency. Providing power for screen operation and adequate cleaning is key to screen effectiveness.

Alternative Power Sources

Program engineers continue to investigate the potential use of alternative power sources for fish screens including water wheel, hydrogen fuel cell, hydraulic ram, and solar technologies.

Fish Screen Cleaning System

An automatic water backwash system was installed at a new fish screen on the Sandy River. The new system can be set up to automatically clean the screen based on specific time intervals, differences in water depth in front of the screen versus behind the screen (indicating the screen may be plugged), and when the pumps do not have adequate water depth to continue withdrawals. The system can also be operated manually.

Nozzles spray water on the back to push debris off the front of the screen.

Controls operate the automatic cleaning system

Lamprey Test Facility

Most fish screens are designed to protect adult and juvenile salmonids. Pacific lamprey populations are declining and recently were added to Oregon list of sensitive species. Because lamprey are poor swimmers compared with salmonids, it was not known whether lamprey would be protected using the existing criteria.

Criteria includes (but is not limited to):

- Screen type
- The velocity of water flowing parallel to the screen surface
- The velocity of water approaching the screen surface
- Amount and size of openings
- Angle of screen to stream flow

Biologists identified the need to study and improve survival at obstacles such as dams, culverts, and irrigation screens as one of the highest priorities for lamprey recovery.

ODFW partnered with the Columbia River Intertribal Fish Commission, United States Fish and Wildlife Service, United States Geological Service, Washington Department of Fish and Wildlife, and others to develop a test facility where lamprey's ability to swim around a variety of fish screen materials and types can be tested.

The newly constructed test facility is ready to begin testing screens.

Other Program Activities

Maintenance

Maintenance of fish screens and passage structures is an important part of the Program. Screens that are not maintained by the Program are often left unrepaired, reducing their effective lifespan and diminishing the State's return on investment.

ORS 498.306(5) requires that ODFW provide major maintenance for screens it cost shares on diversions less than 30 cfs.

The Program's major funding source for new screen construction cannot be used for maintenance. The Program does not receive enough major maintenance funding.

The situation will only intensify as the Program continues to cost share additional screens.

A technician performs maintenance on a pump screen to make sure it will protect fish.

This pile of silt was removed from one screen. The technician pictured is 6' 4" tall.

The Fish Screening Task Force

The Fish and Wildlife Commission appoints a seven-member citizen task force to advise the Department regarding fish screening policy, funding and technology issues. The Task Force includes one public-at-large, three agriculture, and three fishing and fish conservation representatives.

Task Force Members

Representing Agriculture

- **Gordon Summers** is a retired physician who now resides at his family ranch in Halfway. He has worked with fish screens, on his property and others, for more than 10 years. Dr. Summers has been involved with irrigation ditch companies and the Eagle Valley SWCD.
- **Mike Britton** is Manager of the North Unit Irrigation District. He works with the agricultural and natural resources communities to improve fisheries while sustaining irrigated agriculture.
- **Tony Stroda** is a fourth-generation farmer in the Willamette Valley. He gained experience with screens while installing a pump screen on the intake that irrigates his farm. Mr. Stroda is active with his local Water Control District and Watershed Council.

Representing Fishing and Fish Conservation

- **Jeff Oveson** is the Executive Director of the Grande Ronde Model Watershed. He brings together diverse stakeholders to complete habitat projects on private and public lands.
- **Lynden Brown** is a retired high school biology teacher. She is interested in fish issues and wants to insure viable fisheries for the future.
- **Tony Brauner** is a retired high school education and CEO of an intrastate trucking firm. He is a licensed fishing guide and is actively involved with fish habitat and conservation work.

Representing Public-at-Large

- Mark Wharry is an engineer with over 10 years experience working on fish screening and passage projects in the Pacific Northwest. He is also a member of the Oregon Water Resources Congress.

Program Success

So far this biennium, 94 fish screens have been installed protecting 187.01 cfs of water. An additional 27 projects are planned for installation by the end of June 2013. The cooperative water users installing these projects have contributed more than $1 million in matching funds.

Fish screens come in a wide range of types and sizes including pump, rotary drum, traveling belt, and panel screens. The projects featured here represent the challenges posed by various locations and the diverse nature of fish screen designs.

CFS or 'cubic feet per second' refers to the amount of water being screened. 1 cfs = 448.83 gallons per minute. The amount of water screened and number of projects installed are the primary measurements used to track Program success.

Projects are located throughout the state benefiting both small and large water users. Valuable partnerships have been forged with water users who volunteer to cost share projects.

1 cfs = 448.83 gallons per minute.

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

Screens Installed by Senate District

District	# Installed	Flow Rate
1	12	6.05
2	9	9.80
3	3	3.59
4	4	0.50
8	1	2.00
9	6	21.64
10	1	1.56
12	5	7.31
13	1	1.00
16	4	11.13
20	4	4.53
26	1	0.44
28	5	33.48
29	10	19.63
30	28	64.35
Total	94	187.01

Screens Installed by House District

District	# Installed	Flow Rate
1	11	5.83
2	1	0.22
3	3	2.22
4	6	7.58
5	3	3.59
7	4	0.50
15	1	2.00
17	3	19.15
18	3	2.49
20	1	1.56
23	3	3.31
24	2	4.00
25	1	1.00
32	4	11.13
39	4	4.53
52	1	0.44
55	5	33.48
57	9	18.96
58	1	0.67
59	26	60.64
60	2	3.71
Total	94	187.01

Fish Screens Installed July 1, 2011 to December 31, 2012

County	House District	Senate District	Basin	Project Title	Stream	Flow Rate	Project #
Benton	15	8	Willamette	Travis Hill Pump	Willamette River	2.00	02-0362
Benton	23	12	Willamette	Gathering Together Pump	Marys River	0.43	02-0388
Benton	23	12	Mid Coast	Cheeke Pump	South Fork Alsea River	1.10	18-0006
Clackamas	39	20	Willamette	Staehely Diversion B	Beaver Creek	0.72	02-0354
Clackamas	39	20	Willamette	Staehely Diversion A	Beaver Creek	1.69	02-0355
Clackamas	39	20	Willamette	DeMartini Pump	Gribble Creek	0.56	02-0360
Clackamas	39	20	Willamette	Montecucco Farms Pump	Mollala River	1.56	02-0370
Clackamas	52	26	Willamette	Boring Fire Department Pump	Deep Creek	0.44	02-0375
Clatsop	32	16	North Coast	Peterson Point	Necanicum River	7.00	01-0038
Coos	1	1	South Coast	Jerry Smith #2	East Fork Coquille River	0.25	17-0069
Coos	1	1	South Coast	King Ranch #3	North Fork Coquille River	0.28	17-0072
Coos	1	1	South Coast	King Ranch #4	North Fork Coquille River	0.65	17-0073
Coos	1	1	South Coast	Petrie Pump	North Fork Coquille River	0.37	17-0086
Coos	1	1	Umpqua	Myrtle Lane Dairy #3 Pump	South Fork Coquille River	0.80	17-0087
Coos	1	1	South Coast	Myrtle Lane Dairy #4 Pump	South Fork Coquille River	0.58	17-0088
Coos	1	1	South Coast	Myrtle Lane Dairy #5 Pump	South Fork Coquille River	0.69	17-0089
Coos	1	1	South Coast	Hayes #2 Pump	South Fork Coquille River	0.83	17-0091
Crook	55	28	Deschutes	Peoples Ditch Screen	Crooked River	27.00	05-0008
Crook	55	28	John Day	Langer #2	Bear Creek	1.20	06-0325
Curry	1	1	South Coast	Marsh #2 Pump	Elk River	0.30	17-0070
Curry	1	1	South Coast	Marsh #3 Pump	Elk River	0.63	17-0071
Curry	1	1	South Coast	McKenzie #4 Pump	Floras Creek	0.45	17-0080
Douglas	7	4	Umpqua	LIDO, LLC	North Umpqua River	0.00	16-0153
Douglas	7	4	Umpqua	Newfield Pump	Umpqua River	0.02	16-0184
Douglas	7	4	Umpqua	Byle	Umpqua River	0.03	16-0210
Douglas	2	1	Umpqua	Tenold #2 Pump	North Myrtle Creek	0.22	16-0245
Grant	59	30	John Day	Eddington Ditch	Eddington Ditch	8.34	06-0089
Grant	60	30	John Day	Little Indian Creek	Little Indian Creek	3.00	06-0173
Grant	59	30	John Day	Laycock Creek-Forcier	Laycock Creek	0.75	06-0187
Grant	59	30	John Day	Dixie Creek #3	Dixie Creek	3.25	06-0223
Grant	59	30	John Day	Dad's Creek #1	Dads Creek	3.08	06-0274

Fish Screens Installed July 1, 2011 to December 31, 2012

County	House District	Senate District	Basin	Project Title	Stream	Flow Rate	Project #
Grant	59	30	John Day	Dad's Creek #2	Dads Creek	3.08	06-0275
Grant	59	30	John Day	Beech Creek - Panama Ditch	Beech Creek	13.00	06-0308
Grant	59	30	John Day	Upper SFK John Day River #7	South Fork John Day River	1.00	06-0311
Grant	59	30	John Day	P.W. Schneider Wildlife Area	Cabin Creek	0.71	06-0312
Grant	59	30	John Day	P.W. Schneider Wildlife Area	Flat Creek	0.54	06-0314
Grant	59	30	John Day	John Day River #58	John Day River	3.00	06-0320
Grant	59	30	John Day	Carter #1	John Day River	5.50	06-0326
Grant	60	30	John Day	Kruse #1	Canyon Creek	0.71	06-0466
Grant	59	30	John Day	Dads Creek- Voigt #1	Dads Creek	1.50	06-0481
Grant	59	30	John Day	Dads Creek - Pat Voigt #2	Dads Creek	1.00	06-0482
Grant	59	30	John Day	NFJDR - Harvey Pump Screen	North Fork John Day River	1.00	06-0499
Jackson	5	3	Rogue	Houston Ditch	Little Applegate River	2.00	15-0144
Jackson	5	3	Rogue	Beaver-Redding	Beaver Creek	0.70	15-0151
Jackson	5	3	Rogue	Bishop Ditch	Yale Creek	0.89	15-0176
Jackson	55	28	Rogue	Burrell Ditch	South Fork Little Butte Creek	2.03	15-0215
Jackson	55	28	Rogue	Tonn Ditch	South Fork Little Butte Creek	2.80	15-0217
Jackson	4	2	Rogue	Stroh #1 Pump	Rogue River	0.96	15-0455
Jackson	4	2	Rogue	Stroh #2 Pump	Rogue River	0.96	15-0456
Jackson	55	28	Rogue	Dole	Little Butte Creek	0.45	15-0461
Jackson	4	2	Rogue	Wardle (Rocky) #2	Evans Creek	0.40	15-0463
Jackson	4	2	Rogue	Buxton Pump	Rogue River	1.67	15-0470
Jefferson	59	30	Deschutes	McDonald Pump	Trout Creek	0.44	05-0100
Josephine	4	2	Rogue	Varner Ditch	Munger Creek	1.84	15-0154
Josephine	4	2	Rogue	Lewman Pump	Williams Creek	1.75	15-0441
Josephine	3	2	Rogue	Piggott	Rogue River	0.75	15-0459
Josephine	3	2	Rogue	Lathrop Pump	West Fork Williams Creek	0.67	15-0464
Josephine	3	2	Rogue	Biller #1 Pump	Jumpoff Joe Creek	0.80	15-0474
Lane	7	4	Willamette	Lowell School Pump	Middle Fork Willamette River	0.45	02-0358
Linn	17	9	Willamette	Smallman Creek Pump	Smallman Creek	7.80	02-0342
Linn	17	9	Willamette	Queener Irrigation Pumpsite	Unnamed Tributary	10.46	02-0363
Marion	18	9	Willamette	Eder Brothers Pump	Pudding River	1.10	02-0353

Fish Screens Installed July 1, 2011 to December 31, 2012

County	House District	Senate District	Basin	Project Title	Stream	Flow Rate	Project #
Marion	18	9	Willamette	Vandecoevering Pump	Pudding River	0.89	02-0356
Marion	17	9	Willamette	Darren Houts Pump	North Santiam River	0.89	02-0357
Marion	18	9	Willamette	Kuenzi Pump	Pudding River	0.50	02-0361
Marion	23	12	Willamette	Jim Johnson Pump	Sidney Ditch	1.78	02-0372
Marion	20	10	Willamette	Miller Forests Pump	Willamette River	1.56	02-0374
Morrow	57	29	Umatilla	Rhea Creek - Glavey	Rhea Creek	2.06	07-0050
Tillamook	32	16	North Coast	Fawcett Creek Screen	Fawcett Creek	3.00	01-0037
Tillamook	32	16	North Coast	Gleason Pump	Nestucca River	1.00	01-0039
Tillamook	32	16	North Coast	Jackson Creek Diversion	Jackson Creek	0.13	01-0041
Umatilla	57	29	Umatilla	West Birch Creek - Hamby	West Birch Creek	1.00	07-0056
Umatilla	57	29	Umatilla	Birch Creek - Hoeft	West Birch Creek	2.15	07-0057
Umatilla	57	29	Umatilla	Birch Creek - Garton	Birch Creek	4.25	07-0058
Umatilla	57	29	Umatilla	Weinke Pump #1	East Birch Creek	0.67	07-0066
Umatilla	58	29	Umatilla	Weinke Pump #2	East Birch Creek	0.67	07-0067
Union	57	29	Grande Ronde	Little Creek Screen - South	Little Creek	4.00	08-0060
Union	57	29	Grande Ronde	Little Creek Screen - North	Little Creek	4.00	08-0061
Union	57	29	Grande Ronde	Kirby Pump	Catherine Creek	0.53	08-0066
Wallowa	57	29	Grande Ronde	Botts	Wallowa River Side Channel	0.30	08-0058
Wasco	59	30	Hood	Dillon Pump	Fifteenmile Creek	1.60	04-6096
Wheeler	59	30	John Day	Rock Creek # 7	Rock Creek	1.61	06-0337
Wheeler	59	30	John Day	Marx #1	Mac Creek	1.61	06-0475
Wheeler	59	30	John Day	Marx #3	Mac Creek	0.79	06-0476
Wheeler	59	30	John Day	White Butte Ranch	Nelson Creek	2.00	06-0488
Wheeler	59	30	John Day	Boise Pump	John Day River	1.60	06-0504
Wheeler	59	30	John Day	Wilson Ranch Pump #2	Butte Creek	0.87	06-0506
Wheeler	59	30	John Day	Wilson Ranch Pump #3	Butte Creek	1.16	06-0507
Wheeler	59	30	John Day	Wilson Farms Pump	Butte Creek	1.16	06-0508
Wheeler	59	30	John Day	Slifer Pump	Unnamed Stream	0.05	06-0515
Wheeler	59	30	John Day	Big Bottom Ranch	Rowe Creek	2.00	06-0522
Yamhill	24	12	Willamette	Christensen Pump #2	South Yamhill River	2.22	02-0351
Yamhill	24	12	Willamette	Forest Glen Jersey's Pump	Yamhill River	1.78	02-0359
Yamhill	25	13	Willamette	Star Mooring Pump	Willamette River	1.00	02-0383
94	Total Projects				Total CFS	187.01	

Project Summary

Project Number: S-01-0037 **Project Name:** Fawcett Creek Screen

Project Type: 3.0 cfs Vertical Flat Panel Screen

Completion Date: October 2012 **County:** Tillamook

Basin: North Coast **Stream:** Fawcett Creek

Water Use: Municipal

ODFW staff met with their partners to inspect the project upon completion.

Project Description:

This diversion is used to provide water for the City of Tillamook. An old, worn, out of criteria screen at the site no longer provided adequate fish protection.

This screen was part of a larger restoration project including channel reconstruction and installation of a fish passage structure. ODFW partnered with Tillamook Bay Watershed Council and the City of Tillamook to complete this project.

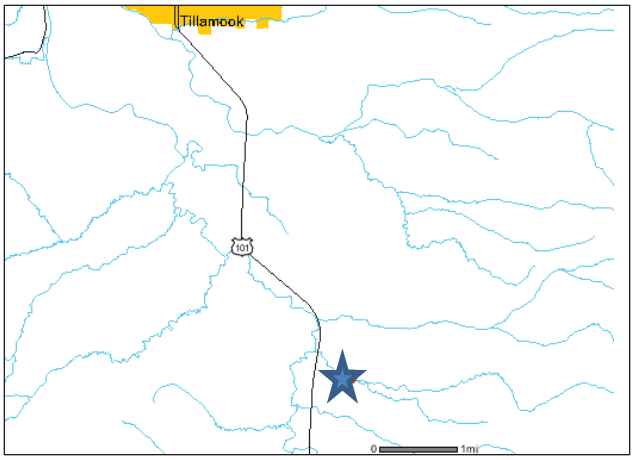
Because this style of screen is installed and works very well on a nearby intake with similar characteristics, it was also selected for this site.

Fish Species Affected:

Chum, Pacific lamprey, winter steelhead, western brook lamprey, fall Chinook, coastal cutthroat, ESA Threatened coho, and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$ 35,767
Applicant & Partners:	$ 70,583
Total:	**$ 106,350**



The site is near Tillamook in Tillamook County, Oregon.

Project Summary

Project Number: S-01-0038 **Project Name:** Peterson Point

Project Type: 7.0 cfs Custom Technology Company pump screen

Completion Date: July 2012 **County:** Clatsop

Basin: North Coast **Stream:** Necanicum

Water Use: Municipal

After the mounting plate was installed, the screen was lowered into place by crane.

The tube leading to the screen pumps water into the self cleaning system.

Project Description:

This is one of two diversions that supply water to the City of Seaside. Neither diversion was screened with an appropriate fish screen. ODFW partnered with Tillamook Bay Watershed Council and the City of Seaside to address fish screening at both diversions.

Installation of a new fish screen system at this diversion was one part of a much larger project to replace antiquated pumps that were energy inefficient and did not allow precise withdrawal of water resulting in negative impacts to instream flow.

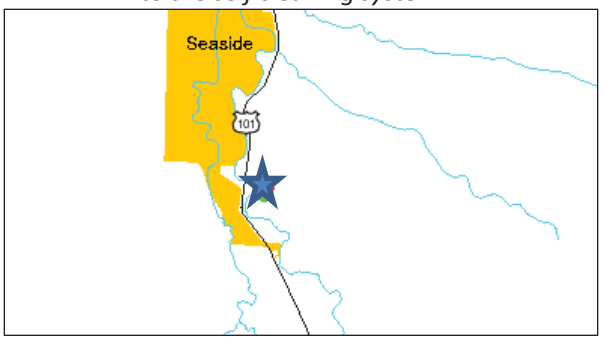
An ODFW engineer designed the system. The screen was purchased and other components were fabricated at The Dalles Screen Shop. ODFW staff with assistance from the City's diver installed the screen.

Fish Species Affected:

Chum, Pacific lamprey, western brook lamprey, ESA Threatened coho, fall Chinook, winter steelhead, coastal cutthroat, and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$ 4,773
ODFW (M76):	$ 3,000
Applicant:	$ 5,182
Total:	**$ 12,955**



Project Location:

This site is located near Seaside in Clatsop County, Oregon.

Project Summary

Project Number: S-02-0342 **Project Name:** Smallman Creek Pump

Project Type: 7.8 cfs Intake Screens Incorporated Cone Screen

Completion Date: May 2012 **County:** Linn

Basin: Willamette **Stream:** Smallman Creek

Water Use: Irrigation

Water flowed around the old screen.

A cone screen was selected, in part, due to shallow water at this site.

Project Description:

ODFW installed a screen at this site in 1996. Water patterns have changed since that time, and unscreened water was flowing around the screen and being diverted. The existing screen also did not meet the newer State and Federal fish screening criteria requiring smaller hole size and a cleaning system.

The Dalles Screen Shop worked with the vendor to install a new cone pump screen from Intake Screens Incorporated. The cone screen was a good fit for this site because it works well in areas with minimal or fluctuating water levels and cleans well in areas where algae growth is a concern.

Smallman Creek is a tributary to the North Santiam River, which supports critical life stages of several native fish species including Pacific lamprey and ESA-listed summer Chinook and winter steelhead.

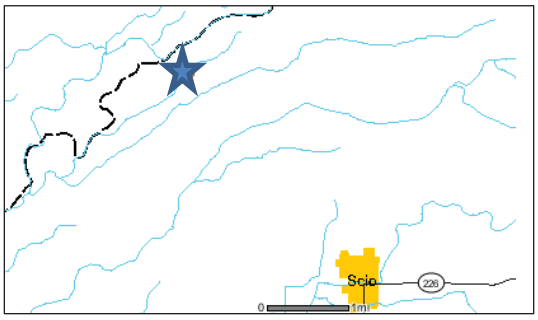
Replacement of this screen was required by the 2008 Willamette Project Biological Opinion for the water user to continue purchasing stored water contracted from the US Bureau of Reclamation.

Fish Species Affected:

Spring Chinook, ESA Threatened winter steelhead, coastal cutthroat, coho, Pacific lamprey, and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$ 40,761
ODFW (M76):	$ 1,103
Total:	**$ 41,864**



Project Location:

This site is near Scio in Linn County, Oregon.

Project Summary

Project Number: S-02-0359 **Project Name:** Forest Glen Jersey's Pump

Project Type: 1.78 cfs Clemons self-cleaning pump screen

Completion Date: January 2012 **County:** Yamhill

Basin: Willamette Basin **Stream:** Yamhill River

Water Use: Water from this diversion is used seasonally for irrigation of corn and pasture.

This photo shows screen outside of the irrigation season. It includes the pipe that connects the irrigation system to the screen once it is in the river.

Fish Species Affected:

ESA Threatened winter steelhead and spring Chinook, coho, coastal cutthroat trout, pacific lamprey, and other non-game fish

Cost Breakdown:

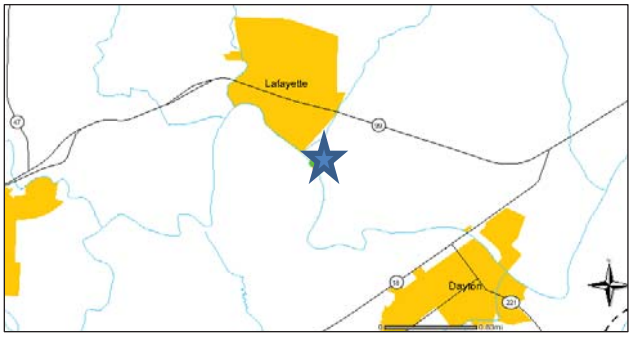
ODFW (PCSRF):	$ 1,271
Applicant:	$ 847
Total:	**$ 2,118**

Project Description:

This project screened a previously unscreened diversion that delivers water for irrigation.

The District Biologist recommended funding this site because the Yamhill River is used for spawning, rearing, and migration by a variety of fish species.

The screen was purchased from an irrigation vendor and will be installed annually by the water user.



Project Location:

The site is near Lafayette in Yamhill County, Oregon.

Project Summary

Project Number: S-02-0363 **Project Name:** Queener Irrigation Pumpsite

Project Type: 10.46 cfs dual Sure Flo pump screen system

Completion Date: August 2012 **County:** Linn

Basin: Willamette **Stream:** Side Channel of the North Santiam River

Water Use: Irrigation of grass seed, row crops, and other agricultural uses

Rather than one large screen, two smaller screens on a manifold were selected for this site due to minimal water depth.

Fish Species Affected:

ESA Threatened spring Chinook and winter steelhead, Pacific lamprey, coastal cutthroat, and other non-game fish

Cost Breakdown:

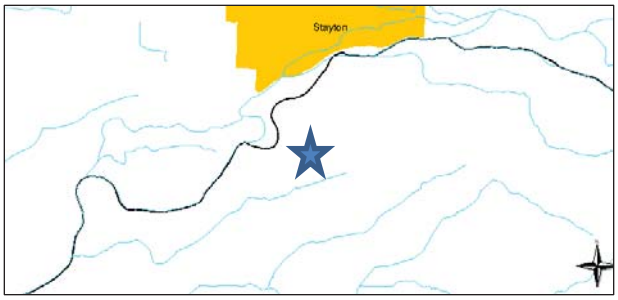
ODFW (PCSRF):	$14,811
Applicant:	$ 9,874
Total:	**$24,685**

Project Description:

This project screened a previously unscreened diversion that delivers water for irrigation.

The side channel supports critical life stages of several native fish species including ESA-listed spring Chinook and winter steelhead.

Installation of this screen was required by the 2008 Willamette Project Biological Opinion for the irrigation district to continue purchasing up to 2,150 acre-feet of stored water contracted from the US Bureau of Reclamation.



Project Location:

The site is near Stayton in Linn County, Oregon.

Project Summary

Project Number: S-04-6096 **Project Name:** Dillon Pump

Project Type: 1.6 cfs Sure-flo self-cleaning pump screen

Completion Date: December 2011 **County:** Wasco

Basin: Hood **Stream:** Fifteenmile Creek

Water Use: Water from this diversion is used to grow grass and alfalfa hay.

Project Description:

The water user, with help from Oregon Department of Energy, Energy Trust of Oregon, and US Natural Resources Conservation Service, installed a new energy efficient pump at the intake site. An undersized screen restricted water flow to the pump and did not meet current fish screening criteria.

After installation, the new self-cleaning pump screen will meet all state and federal fish screening criteria while still meeting the water intake demands of the new pump.

High quality habitat upstream of the diversion site helped make this a high priority screen to install.

The screen was purchased from an irrigation vendor and will be installed annually by the water user.

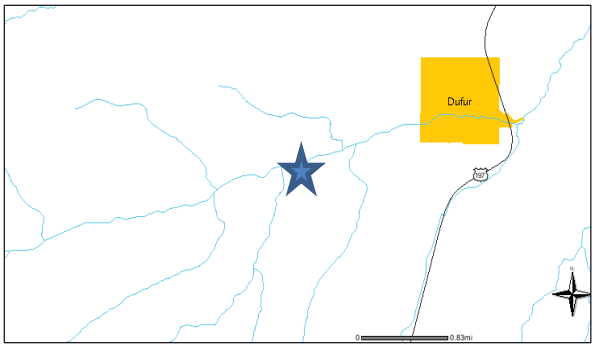
A new Sure-Flo pump screen waiting for irrigation season to begin. The shoe sits on the bottom of the stream holding the screen up reducing sedimentation and wear.

Fish Species Affected:

Steelhead and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$ 1,382
Applicant:	$ 922
Total:	**$ 2,304**



Project Location:

The site is near Dufur in Wasco County, Oregon.

Project Summary

Project Number: S-06-0275 **Project Name:** Dad's Creek # 2 - Voigt

Project Type: 3.08 cfs solar traveling belt screen

Completion Date: July 2011 **County:** Grant

Basin: John Day **Stream:** Dads Creek

Water Use: Irrigation

Solar power is used when electricity is not available at the site and there is not enough water flow for a paddlewheel to supply adequate force.

Fish Species Affected:

Spring Chinook, westslope cutthroat, redband trout, threatened summer steelhead, and other non-game fish.

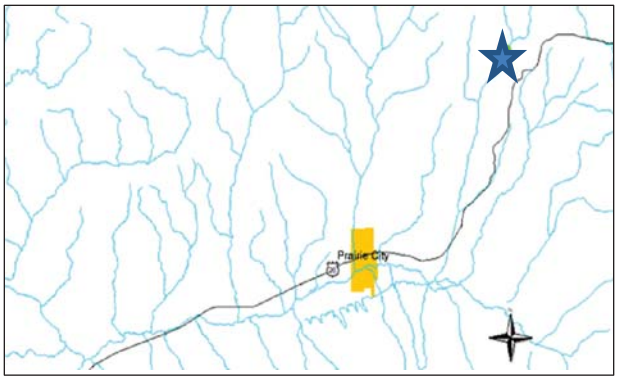
Cost Breakdown:

BPA:	$ 25,237
ODFW (M76):	$ 17,451
Total:	**$ 42,688**

Project Description:

This screening project protects fish at a previously unscreened irrigation diversion. The diversion takes the majority of stream during irrigation putting a large percentage of migrating fish at risk.

The screen was designed by ODFW Salem Headquarters staff , and John Day Screen Shop staff fabricated a steel box and installed the belt screen and solar components.



Project Location:

This site is located near Prairie City in Grant County, Oregon.

Project Summary

Project Number: S-06-0320 **Project Name:** John Day River #58

Project Type: 3.0 cfs solar powered traveling belt screen

Completion Date: September 2011 **County:** Grant

Basin: John Day **Stream:** John Day River

Water Use: Irrigation

John Day Screen Shop staff installed this traveling belt screen to replace an old screen that no longer met criteria or the water users needs.

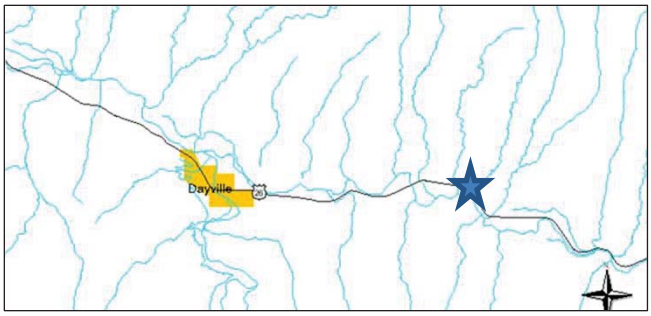
Project Description:

This project replaced a screen that no longer met state and federal screening criteria. The old screen allowed fry to go through the screen or become trapped on it. The screen was also problematic to maintain.

The project was designed by ODFW Salem Headquarters staff and fabricated and installed by John Day Screen Shop staff.

Fish Species Affected:

Redband trout, endangered summer steelhead, bull trout, and other non-game fish



Project Location:

This site is located near Dayville in Grant County, Oregon.

Cost Breakdown:

BPA:	$ 50,737
ODFW (M76):	$ 453
ODFW (PCSRF):	$ 137
Total:	**$ 51,327**

Project Summary

Project Number: S-07-0056 **Project Name:** West Birch Creek - Hamby

Project Type: 1.0 cfs solar powered traveling belt screen

Completion Date: August 2011 **County:** Umatilla

Basin: Umatilla **Stream:** West Birch Creek

Water Use: Irrigation

When the water user is ready to divert water, the boards will be removed and the screen will be operational.

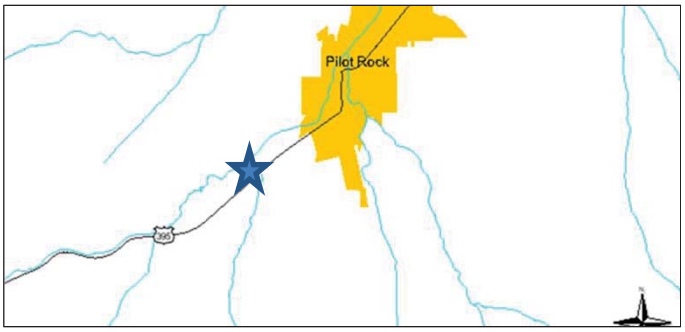
Project Description:

This project screened one of the last remaining unscreened flood irrigation diversions in the Umatilla drainage. This site was a high priority for the District Biologist as protection of Birch Creek steelhead will contribute to the recovery of the listed mid-Columbia steelhead population.

The screen was installed in an existing concrete structure reducing the cost of the project. The project was designed by ODFW Salem Headquarters staff and fabricated and installed by John Day Screen Shop staff.

Fish Species Affected:

Summer steelhead, redband trout, and other non-game fish.



Project Location:

This site is near Pilot Rock in Umatilla County, Oregon.

Cost Breakdown:

BPA:	$ 10,004
ODFW (M76):	$ 6,894
ODFW (PCSRF):	$ 3,662
Total:	**$20,560**

Project Summary

Project Number: S-07-0066 & S-07-0067 **Project Name:** Weinke Pump #1 & #2

Project Type: 1.34 cfs two Clemons Sturgeon pump screens

Completion Date: September 2012 **County:** Umatilla

Basin: Umatilla **Stream:** East Birch Creek

Water Use: Irrigation of hay and alfalfa fields

Project Description:

ODFW worked with the same water user to screen these two previously under protected diversions. The diversions were previously screened with debris screens and did not meet current state and federal fish screening criteria.

The site was a high priority for the District Biologist as protection at this diversion will reduce impacts to native fish including ESA-listed summer steelhead.

A local irrigation contractor was hired to install the two new pump screens.

The old screen mesh did not adequately protect fish.

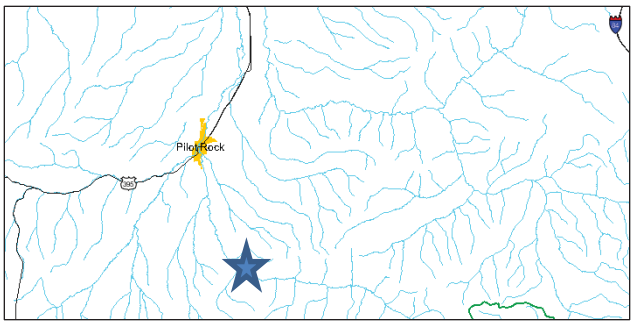
The new screens are identical.

Fish Species Affected:

Redband trout, ESA Threatened summer steelhead, and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$	1,963
BPA:	$	1,309
Total:	**$**	**3,272**



Project Location:

The project is located near Pilot Rock in Umatilla County, Oregon.

Project Summary

Project Number: S-08-0060 & S-08-0061 **Project Name:** Little Creek Screens – North & South

Project Type: 8.0 cfs two solar powered traveling belt screens

Completion Date: October 2012 **County:** Union

Basin: Grande Ronde **Stream:** Little Creek

Water Use: Irrigation of pasture land

Project Description:

ODFW partnered with the Grande Ronde Model Watershed Union Soil and Water Conservation District, and the water user to screen two previously unscreened diversions on Little Creek, a tributary to Catherine Creek.

The site was a high priority for the District Biologist as juvenile threatened fish have been documented at this site.

Installation of these screens was part of a larger project to update the diversion control structure and provide fish passage.

The project was designed by a private engineering firm, and ODFW's Enterprise Screen Shop staff constructed and installed the screens.

The south screen during construction

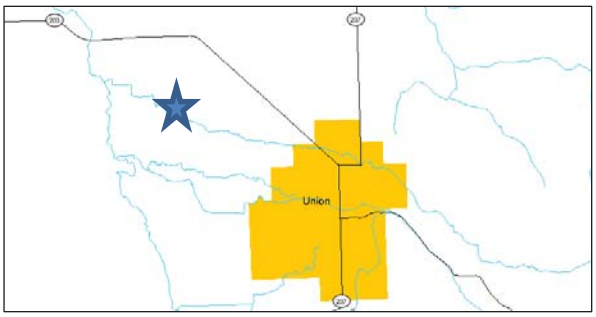
The north screen completed

Fish Species Affected:

ESA Threatened summer steelhead, spring Chinook, and bull trout; and other non-game fish

Cost Breakdown:

ODFW (PCSRF):	$ 6,926
ODFW (MA):	$ 5,822
ODFW (M76):	$ 457
Applicant:	$ 8,804
Total:	**$22,009**



Project Location:

The project is located near Union in Union County, Oregon.

Project Summary

Project Number: S-08-0066 **Project Name:** Catherine Creek Pump

Project Type: 0.5 cfs Pump Rite pump screen

Completion Date: April 2012 **County:** Union

Basin: Grand Ronde **Stream:** Catherine Creek

Water Use: Irrigation

The water user will install the screen when they are ready to start irrigation season.

Project Description:

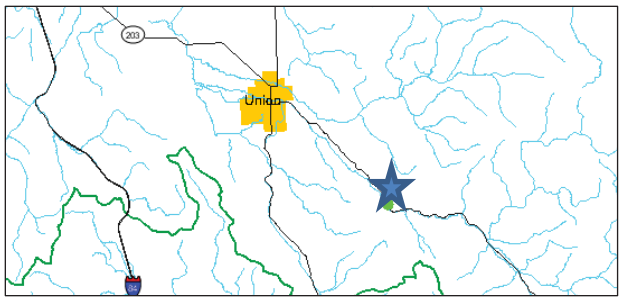
ODFW installed a fish screen at this site in 1998. During recent field work, the District Biologist noticed that the screen was missing the outside mesh and no longer protecting juvenile fish. Catherine Creek supports all life history stages, but is especially important for juveniles.

During low flows, the water is only about 1 foot deep. The long thin pump screen allows the water user to take their water and keeps fish from getting impinged on the screen.

Enterprise Screen Shop staff purchased and delivered the screen. The water user will install the screen prior to irrigation each year and remove it when finished.

Fish Species Affected:

ESA Threatened summer steelhead, spring Chinook, and bull trout; and other non-game fish



Project Location:

The project is located near Union in Union County, Oregon.

Cost Breakdown:

ODFW (PCSRF):	$ 1,838
ODFW (MA):	$ 438
Total:	**$ 2,276**

Project Summary

Project Number: S-15-0154 **Project Name:** Varner Ditch

Project Type: 1.84 cfs solar powered rotary drum screen

Completion Date: March 2012 **County:** Josephine

Basin: Rogue **Stream:** Munger Creek

Water Use: Irrigation

The old drum screen and paddlewheel

The new screen is solar powered. The old screen had difficulty operating during low flows.

Project Description:

A new solar powered rotary drum screen replaced an old screen that no longer met current state and federal fish screening criteria.

This project was a high priority for the District Biologist because Munger Creek has much high quality habitat and is an important producer of coho salmon and summer and winter steelhead.

During late season low flows, the paddlewheel system did not produce adequate force to turn the drum, so the paddlewheel was replaced with a solar system.

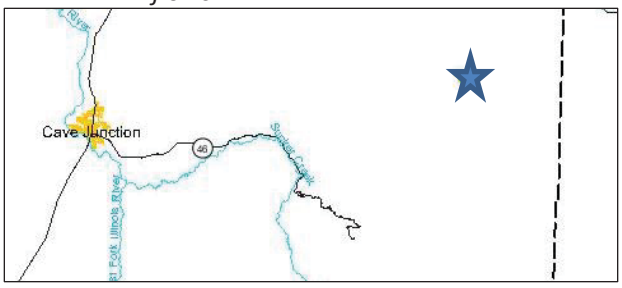
The screen was designed by ODFW Salem Headquarters staff and fabricated and installed by Central Point Screen Shop staff.

Fish Species Affected:

Summer and winter steelhead, ESA Threatened coho, and other non-game fish

Cost Breakdown:

ODFW (M76):	$ 12,901
ODFW (PCSRF):	$ 10,643
Total:	**$ 23,544**



Project Location:

The project is located near Cave Junction in Josephine County, Oregon.

Project Summary

Project Number: S-15-0217 **Project Name:** Tonn Ditch

Project Type: 2.8 cfs rotary drum screen

Completion Date: March 2012 **County:** Jackson

Basin: Rogue **Stream:** South Fork Little Butte Creek

Water Use: Irrigation

Paddlewheels supply force to turn the rotary drum screens.

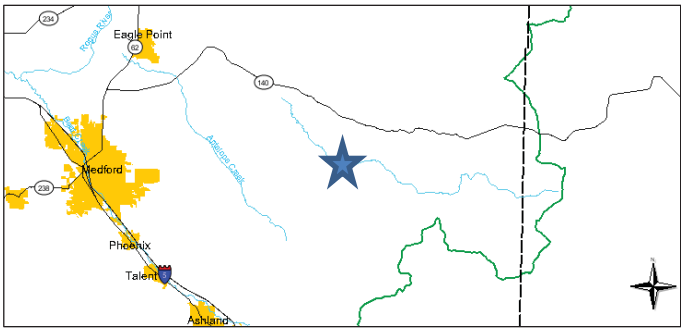
Project Description:

This project replaced an old screen that no longer met state and federal fish screening criteria.

The screen was designed by ODFW Salem Headquarters staff and fabricated and installed by Central Point Screen Shop staff.

Fish Species Affected:

Coho, summer and winter steelhead, and other non-game fish



Project Location:

The project is located near Medford in Jackson County, Oregon.

Cost Breakdown:

ODFW (PCSRF):	$ 23,820
ODFW (M76):	$ 8,556
Total:	**$ 32,376**

Contact Information

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Enterprise Screen Shop
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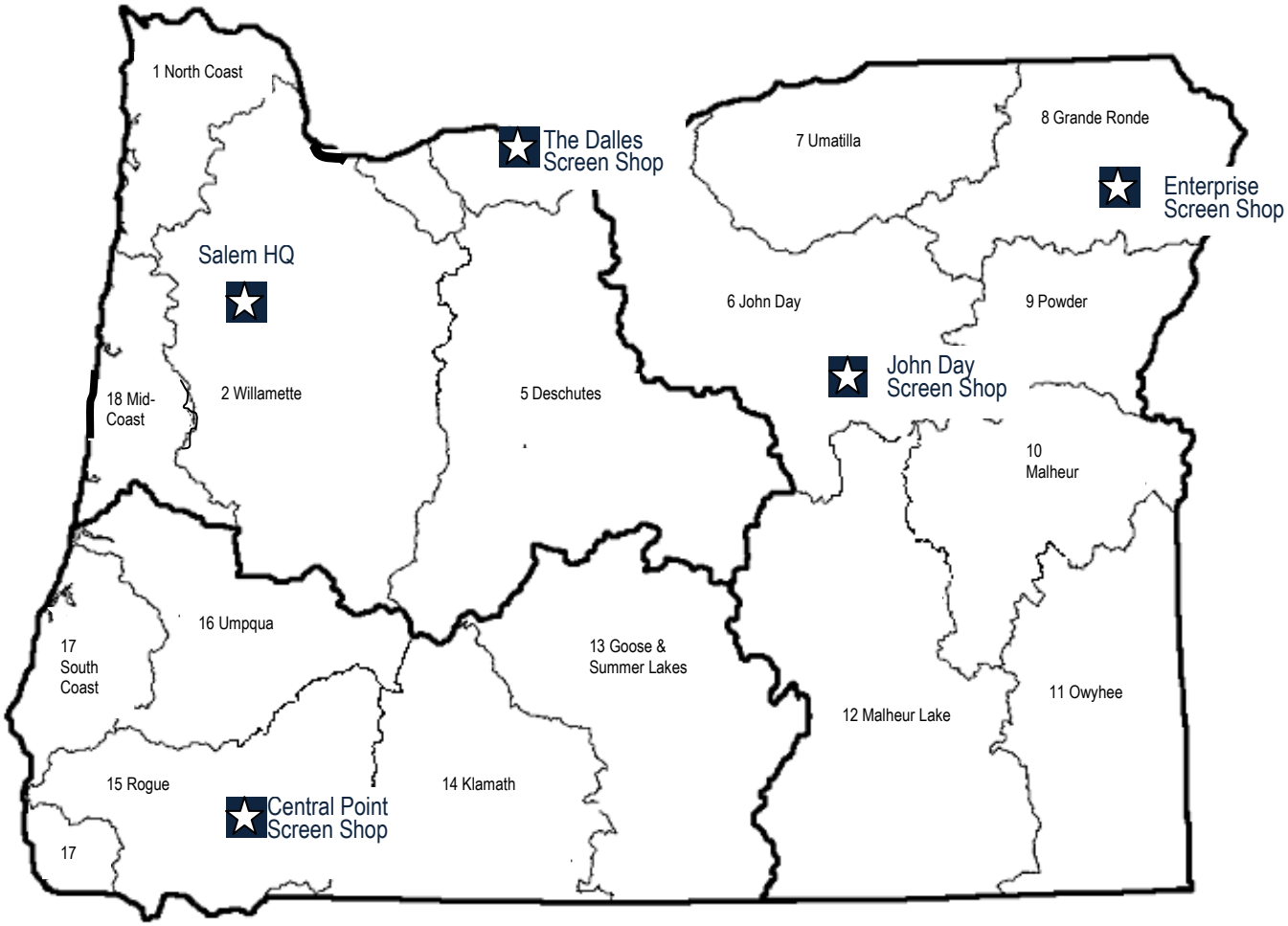
Enterprise, OR 97828
541-426-0311



Oregon Department of Fish and Wildlife

3406 Cherry Ave NE
Salem, OR 97303

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