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2006 OPRD- Oregon Chub Population Monitoring on Oregon State Park Lands

ANNUAL PROGRESS REPORT

FISH RESEARCH PROJECT
OREGON

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Willamette Valley

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INTRODUCTION

Oregon chub *Oregonichthys crameri*, small minnows endemic to the Willamette River drainage of western Oregon (Markle et al. 1991), were federally listed as endangered under the Endangered Species Act in 1993 (Markle and Pearsons 1990; Rhew 1993). This species was formerly distributed throughout the Willamette River Valley (Snyder 1908) in off-channel habitats such as beaver ponds, oxbows, backwater sloughs, and flooded marshes. These habitats usually have little or no water flow, have silty and organic substrate, and have an abundance of aquatic vegetation and cover for hiding and spawning. In the last 100 years, off-channel habitats have disappeared because of changes in seasonal flows and habitat characteristics resulting from the construction of flood control dams, revetments, channelization, diking, and the drainage of wetlands for bottomland agriculture. This loss of habitat combined with the introduction of non-native species to the Willamette Valley resulted in a restricted distribution and sharp decline in Oregon chub abundance. The Oregon chub is further threatened by predation and competition by non-native species such as largemouth bass *Micropterus salmoides*, crappies *Pomoxis* sp., sunfishes *Lepomis* sp., bullheads *Ameiurus* sp., and western mosquitofish *Gambusia affinis*.

To evaluate abundance and distribution of Oregon chub populations, the Oregon Department of Fish and Wildlife has conducted surveys since 1991. Information collected also included the presence of non-native and native species, the characteristics of Oregon chub habitats, the characteristics of potential introduction sites, evaluation of Oregon chub introductions, and life history characteristics (Scheerer 2002, Scheerer and McDonald 2003, Scheerer et al. 2006).

The Oregon Chub Recovery Plan (U.S. Fish and Wildlife Service 1998) set recovery criteria for downlisting the species to “threatened” and for delisting the species. The criteria for downlisting the species are: 1) establish and manage 10 populations of at least 500 adult fish, 2) all of these populations must exhibit a stable or increasing trend for five years, and 3) at least three populations meeting criterion 1 and 2 must be located in each of the three recovery areas (Middle Fork Willamette River, Santiam River, and Mid-Willamette River tributaries). In 2006, there were 18 populations totaling 500 or more individuals. Thirteen of these populations met the above criteria. Eight were located in the Middle Fork Willamette drainage, three were located in the Mid-Willamette drainage, and two were located in the Santiam drainage (Scheerer et al. 2006). The status of this species has improved substantially over the past decade and with the addition of a single Santiam population, the downlisting criteria will be met (Scheerer et al. 2006).

OBJECTIVES

The purpose of this investigation is to monitor the status of endangered Oregon chub populations and their habitat on Oregon Parks and Recreation Department (OPRD) properties in the Willamette Valley, to survey off-channel habitats, and to evaluate potential reintroduction sites. For 2006 we had the following three objectives:

- Objective 1: Monitor the status of Oregon chub populations. Estimate the abundance of populations of Oregon chub at Elijah Bristow State Park.
- Objective 2: Determine presence/absence of small populations of Oregon chub at Oregon State Parks and on Willamette River Greenway properties managed by OPRD.

Objective 3: Evaluate habitat and fish communities at locations with potential for future Oregon chub introductions.

METHODS

We conducted surveys at locations in the Willamette River drainage (Figures 1-2). We sampled off-channel habitats using a 1 m x 5 m seine with 64 mm mesh, baited minnow traps, and/or dip nets. We identified and counted all fish captured. We recorded the presence of amphibian and reptile species and their life stages that were encountered. We recorded physical and biological habitat parameters at each site including substrate type, type and abundance of aquatic vegetation, mean depth, water temperature, and total surface area. We photographed and assigned a unique map code to each site.

We used minnow traps, measuring 23 by 46 cm with 64 mm mesh, to obtain mark-recapture population estimates of Oregon chub at selected sites. We baited the traps with a third of a slice of bread and fished them for 3-18 hours. We marked all fish with a partial caudal fin clip and returned them to the water. We estimated population abundance using single-sample mark-recapture procedures (Ricker 1975). We calculated 95% confidence intervals using a Poisson approximation (Ricker 1975). Because we do not capture fish smaller than ~35 mm (TL) in the minnow traps, these fish were not included in the estimates. Excluded fish were young-of-the-year (Scheerer and McDonald 2003).

RESULTS

We surveyed 86 unique off-channel habitats on OPRD properties (Table 1). Detailed descriptions of habitat characteristics and the fish species present at each of these sites are presented in **APPENDIX A**.

OPRD Properties Containing Oregon Chub

We identified six locations where Oregon chub were present on OPRD properties (Table 2). Three of these sites were located at Elijah Bristow State Park in the Middle Fork Willamette River drainage including Berry Slough (EB1-11), Northeast Slough (EBN1), and the Island Pond (MF8, 12). The other three sites were located in the Coast Fork Willamette River drainage and include Lynx Hollow (LYNX1), Coast Fork Side Channels (CF11), and Camas Swale (CS4). There were eight additional locations on OPRD property where Oregon chub were collected in past sampling, but where no chub were currently found. These include three Elijah Bristow Borrow Pits (EB13, EB15, and EB16), three beaver ponds in the Elijah Bristow Southeast Slough (EB21, EB23, and EB27), Jasper Park Slough (CAP1), and Wallace Slough (WALL1) (Table 2). The Elijah Bristow Southeast Slough was impacted by the 1996 floods and the habitat is no longer suitable for Oregon chub (EB21, EB23, and EB27). No Oregon chub were found in any off-channel habitats sampled in the mainstem Willamette River drainage.

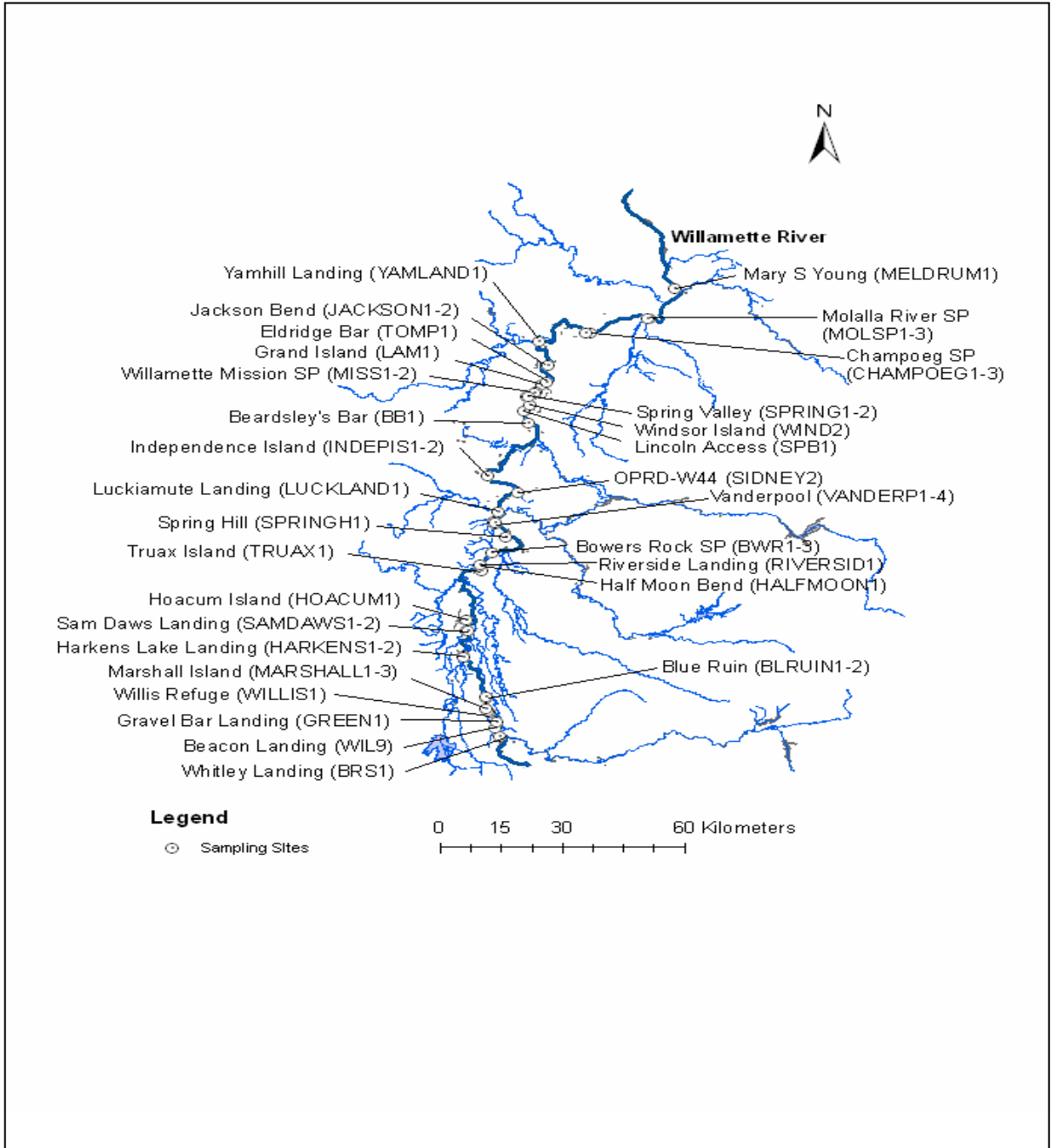


Figure 1. Survey locations for Oregon chub in the Santiam, lower and mid-Willamette River drainages. Open circles with center dots indicate sites where Oregon chub were not collected. No Oregon chub were collected in the Santiam, lower and mid-Willamette drainages.

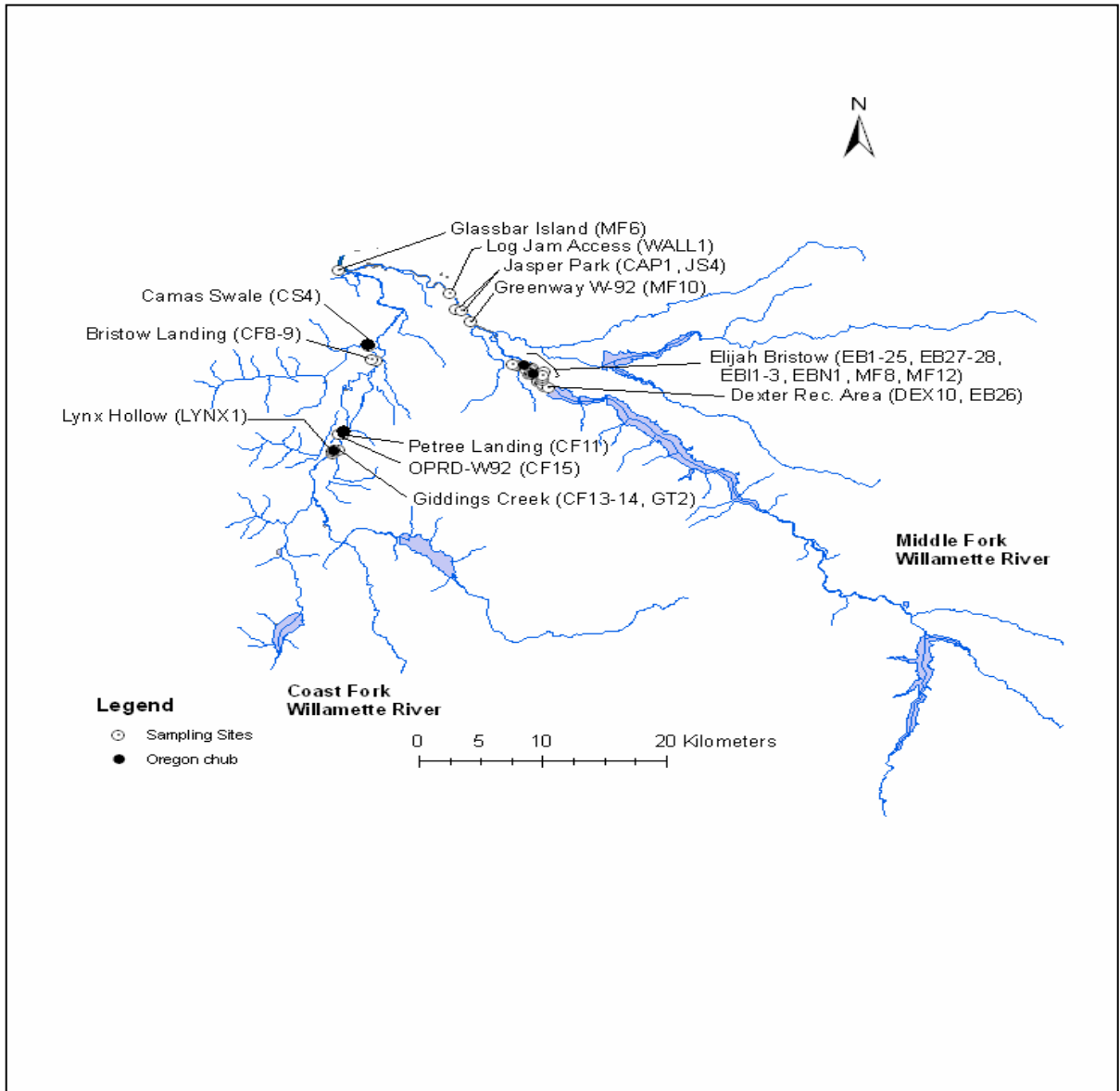


Figure 2. Survey locations for Oregon chub in the upper Willamette River drainage. Open circles with center dots indicate sites where Oregon chub were not collected. Solid circles indicate sites where Oregon chub were collected.

Table 1. Locations sampled on OPRD properties in the Willamette River basin. Basins: LW= Lower Willamette River downstream of the Santiam River confluence; MW= Middle Willamette River between Eugene and the Santiam River confluence; MFW= Middle Fork Willamette River; and CFW= Coast Fork Willamette River.

OPRD code	OPRD Site Name	ODFW map code	Basin	Oregon chub	Nonnative fish	Average depth (m)	Percent silt/organics	Percent vegetative cover
3	Beardsley's Bar Access	BB1	LW		yes	0.3	10	100
5	Willamette Mission State Park	MISS1	LW		yes	2.0	100	55
5	Willamette Mission State Park	MISS2	LW		yes	1.0	50	50
6	Grand Island Access	LAM1	LW		yes	0.4	50	45
7	Eldridge Bar Landing	TOMP1	LW		yes	0.2	100	100
8	Jackson Bend Landing	JACKSON1	LW		yes	0.8	100	95
8	Jackson Bend Landing	JACKSON2	LW		yes	0.8	70	100
9	Yamhill Landing	YAMLAND1	LW		yes	1.0	60	100
12	Champoeg State Heritage Area	CHAMPOEG1	LW		no	0.8	50	0
12	Champoeg State Heritage Area	CHAMPOEG2	LW		yes	0.8	55	5
12	Champoeg State Heritage Area	CHAMPOEG3	LW		yes	0.4	40	10
16	Molalla River State Park	MOLSP1	LW		yes	1.2	100	60
16	Molalla River State Park	MOLSP2	LW		yes	0.8	100	60
16	Molalla River State Park	MOLSP3	LW		yes	1.0	100	60
36	Lincoln Access	SPB1	LW		no	0.6	60	30
161	Spring Valley Access	SPRING1	LW		yes	0.5	80	60
161	Spring Valley Access	SPRING2	LW		yes	0.8	70	85
171	Vanderpool	VANDERP1	LW		yes	0.6	40	100
171	Vanderpool	VANDERP2	LW		no	0.0	100	0
171	Vanderpool	VANDERP3	LW		yes	2.0	100	20
171	Vanderpool	VANDERP4	LW		no	0.0	100	0
293	OPRD-W44	SIDNEY2	LW		no	1.2	30	0
314	Spring Hill	SPRINGH1	LW		no	0.3	0	0
471	Mary S Young	MELDRUM1	LW		yes	0.4	10	0
624	Independence Island	INDEPIS2	LW		no	0.8	20	100
625	Independence Island	INDEPIS1	LW		yes	1.0	70	100
631	Luckiamute Landing	LUCKLAND1	LW		yes	0.5	80	100
723	Windsor Island Access	WIND2	LW		yes	1.5	100	10
29	Marshall Island Landing	MARSHALL1	MW		yes	0.4	80	100
29	Marshall Island Landing	MARSHALL2	MW		yes	0.2	70	100
31	Beacon Landing	WIL9	MW		no	0.6	10	50
33	Whitley Landing	BRS1	MW		yes	0.7	70	65
63	Blue Ruin Landing	BLRUIN1	MW		yes	0.4	70	100
64	Blue Ruin Island	BLRUIN2	MW		yes	0.5	30	86
163	Sam Daws Landing	SAMDAWS1	MW		no	0.4	0	30
163	Sam Daws Landing	SAMDAWS2	MW		yes	0.5	35	100
165	Hoacum Island Landing	HOACUM1	MW		no	0.4	15	85
167	Truax Island Access	TRUAX1	MW		yes	0.4	85	90
168	Riverside Landing	RIVERSID1	MW		yes	0.1	100	0
169	Bowers Rock State Park	BWR1	MW		yes	1.5	100	100
169	Bowers Rock State Park	BWR2	MW		yes	0.1	100	100
169	Bowers Rock State Park	BWR3	MW		yes	0.7	100	100
294	Gravel Bar Landing	GREEN1	MW		yes	1.0	5	75
295	Harkens Lake Landing	HARKENS1	MW		yes	0.5	100	100
295	Harkens Lake Landing	HARKENS2	MW		yes	0.5	85	100
375	Half Moon Bend	HALFMOON1	MW		yes	0.5	10	100
394	Willis Refuge	WILLIS1	MFW		yes	0.5	60	95
405	Marshall Island Access	MARSHALL3	MW		yes	1.0	45	100

Table 1 (continued).

OPRD code	OPRD Site Name	ODFW map code	Basin	Oregon chub	Nonnative fish	Average depth (m)	Percent silt/organics	Percent vegetative cover
174	Bristow Landing	CF8	CFW		yes	2.0	100	100
174	Bristow Landing	CF9	CFW		yes	0.9	100	80
175	Camas Swale Landing	CS4	CFW	2	yes	0.7	25	20
178	Petree Landing	CF11	CFW	150	yes	0.5	5	100
395	Lynx Hollow Access	LYNX1	CFW	2	yes	0.4	50	100
396	Giddings Creek Landing	CF13	CFW		yes	0.5	100	65
396	Giddings Creek Landing	CF14	CFW		yes	0.5	100	70
396	Giddings Creek Landing	GT2	CFW		yes	1.0	100	80
406	OPRD-W92	CF15	CFW		yes	0.7	100	77
34	Glassbar Island	MF6	MFW		yes	0.4	100	75
180	Log Jam Landing	WALL1	MFW		yes	1.0	90	30
301	Elijah Bristow	EB1-11	MFW	5,455	no	1.2	100	100
301	Elijah Bristow	EB12	MFW		no	0.2	100	0
301	Elijah Bristow	EB13	MFW		yes	0.5	75	90
301	Elijah Bristow	EB14	MFW		yes	2.0	0	45
301	Elijah Bristow	EB15	MFW		yes	0.2	100	80
301	Elijah Bristow	EB16	MFW		no	0.2	100	55
301	Elijah Bristow	EB17	MFW		no	0.4	100	20
301	Elijah Bristow	EB18	MFW		yes	0.6	100	80
301	Elijah Bristow	EB19	MFW		no	0.5	100	100
301	Elijah Bristow	EB20	MFW		no	0.5	100	100
301	Elijah Bristow	EB21	MFW		yes	0.5	0	10
301	Elijah Bristow	EB22	MFW		no	0.2	100	0
301	Elijah Bristow	EB23	MFW		yes	1.3	80	35
301	Elijah Bristow	EB24	MFW		no	0.8	10	70
301	Elijah Bristow	EB25	MFW		no	0.5	100	50
301	Elijah Bristow	EB27	MFW		no	0.6	100	95
301	Elijah Bristow	EB28	MFW		no	1.2	100	96
301	Elijah Bristow	EBI1	MFW		no	0.4	5	4
301	Elijah Bristow	EBI2	MFW		no	0.5	0	0
301	Elijah Bristow	EBI3	MFW		no	0.1	100	80
301	Elijah Bristow	EBN1	MFW	206	yes	0.8	100	100
301	Elijah Bristow	MF8, 12	MFW	2,309	yes	1.2	96	92
303	Dexter State Recreation Area	DEX10	MFW		yes	1.0	90	95
303	Dexter State Recreation Area	EB26	MFW		yes	0.6	100	70
407	Willamette River Greenway W-82	MF10	MFW		no	0.9	95	90
562	Jasper State Recreation Site	CAP1	MFW		yes	1.0	100	100
562	Jasper State Recreation Site	JS4	MFW		yes	0.7	100	100

Table 2. Oregon chub population abundance estimates at OPRD locations from 1992-2006. Abundances are mark-recapture estimates, except those shown in bold, which are the number of fish captured. Basin codes: MFW- Middle Fork Willamette and CFW- Coast Fork Willamette.

Site Name	Map Code	Basin	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Nonnative fish
Elijah Bristow Berry Slough	EB1-11	MFW		4,010		1,930		2,010	5,350	2,720	1,190	3,970	4,910	2,140	2,950	2,530	5,460	no
Elijah Bristow Island Pond	MF8, 12	MFW												2,780	420	1,700	2,310	yes
Elijah Bristow Northeast Slough	EBN1	MFW								1,060	1,170	1,090	940	610	1,340	790	210	yes
Elijah Bristow Large Gravel Pit	EB13	MFW	3			0			7	0	0	0	8	2	0	0	0	yes
Elijah Bristow Small Gravel Pit	EB15	MFW	3			0			22	0	0	0	0	0	0	0	0	no
Elijah Bristow Large Borrow Pit	EB16	MFW	31														0	yes
Elijah Bristow Southeast Slough ^a	EB21, 23, 27	MFW	15			0			0									yes
Jasper Park Slough	CAP1	MFW			3		0		0	0	0	0	0	0	0	0	0	yes
Wallace Slough	WALL1	MFW						3	0	0	0	0	0	0	0	0	0	yes
Coast Fork Side Channels	CF11	CFW											16	130	190	12	150	yes
Lynx Hollow Side Channels	LYNX1	CFW														2	2	yes
Camas Swale	CS4	CFW	0		0							0					2	yes

^a The 1996 floods scoured this slough and the habitat is no longer suitable for Oregon chub.

Population Abundance Estimates

Population abundance was estimated at three locations at Elijah Bristow State Park and in the Coast Fork Willamette River Side Channels (Table 3; Figure 3). Chub abundance has fluctuated in Elijah Bristow Berry Slough from 1,190 to 5,460 adult fish since estimates were first obtained in 1993. The 2006 estimate of 5,460 fish (95% CI: 4,200-7,800) was the highest on record. This site is isolated from the Middle Fork Willamette at most flows. The Berry Slough chub population has experienced a stable population trend for the past five years (Scheerer et al. 2006). The 2006 estimate of chub abundance in the Elijah Bristow Island Pond was 2,310 (95% CI: 1,600-3,310). This population experienced a substantial decline in 2004 when nonnative fish were abundant, but rebounded in 2005-2006 when nonnative fish were less common. The Island Pond has an open connection to the Middle Fork Willamette River which permits easy access by nonnative fish. The 2006 estimate of 210 adult chub (95% CI: 140-310) in the Elijah Bristow Northeast Slough is the lowest on record. This population has declined in 2006; nonnative fish were recently discovered in this habitat. The chub population abundance in the Coast Fork Willamette River Side Channels near Saginaw was 150 fish (95% CI: 90-240), which was similar to estimates obtained in 2003 and 2004. In 2002 and 2005, we were unable to obtain mark-recapture estimates at this location due to the low numbers of fish captured in those years.

Potential Oregon Chub Introduction Sites

Potential Oregon chub introduction sites were identified and evaluated using the following guidelines: 1) restrict introductions to the historic distribution of Oregon chub, 2) restrict introductions to protected sites that are secure from imminent or future threats of habitat destruction (invasion by nonnative warmwater fish is included in this category), 3) restrict introductions to sites where the potential for dispersal has been determined and is acceptable, 4) restrict introductions to sites that likely fulfill all life history requirements (site features include small ponds, less than 1,000 meters in elevation, depositional substrate, gradually sloping banks, varied and abundant aquatic vegetation, little or no water velocity, mostly less than 2 meters deep, limited use or access by the public, no non-native fish species, and summer water temperatures exceeding 16°C), 5) restrict introductions to sites that contain sufficient habitat to support a genetically viable population, and 6) prohibit introductions into areas where other rare or endemic taxa could be adversely affected (Scheerer et al. 2006). Further, site manipulations to comply with guideline 5 are permissible.

All sites met guidelines 1, 3, and 6. Seventy-one sites did not meet guideline 2, including the ten sites at Elijah Bristow Southeast Slough (EB17-25 and EB27) that were eliminated during the 1996 floods, 59 additional sites that contained nonnative fishes, and two sites that were dry (VANDER2, VANDER4). Eight sites would not fulfill all life history requirements (guideline 4) because of the absence or near absence of aquatic vegetation, which is necessary to provide cover from predators and as spawning substrate (CHAMPOEG1, SPB1, SIDNEY2, SPRINGH1, SAMDAWS1, EB12, EBI1, and EBI2).

Four sites met all six guidelines. These were located at Hoacum Island Landing, Sam Daws Landing, Beacon Landing, and Independence Island. These locations may be suitable for future Oregon chub introductions. It is believed that all have regular connection with the mainstem during high flow events, which may reduce their suitability by increasing the risk of invasion by nonnative fishes. These sites can be monitored in future years to determine whether the risk of invasion by nonnative warmwater fish is sufficiently low to permit Oregon

Table 3. Estimates of the 2006 population abundance of Oregon chub at three locations in Elijah Bristow State and in the Coast Fork Willamette River Side Channels.

Location	Estimate	95% Confidence Limits	
		lower	upper
Elijah Bristow State Park Berry Slough	5,460	4,200	7,080
Elijah Bristow Island Pond	2,310	1,600	3,310
Elijah Bristow State Park Northeast Slough	210	140	310
Coast Fork Willamette Side Channels	150	90	240

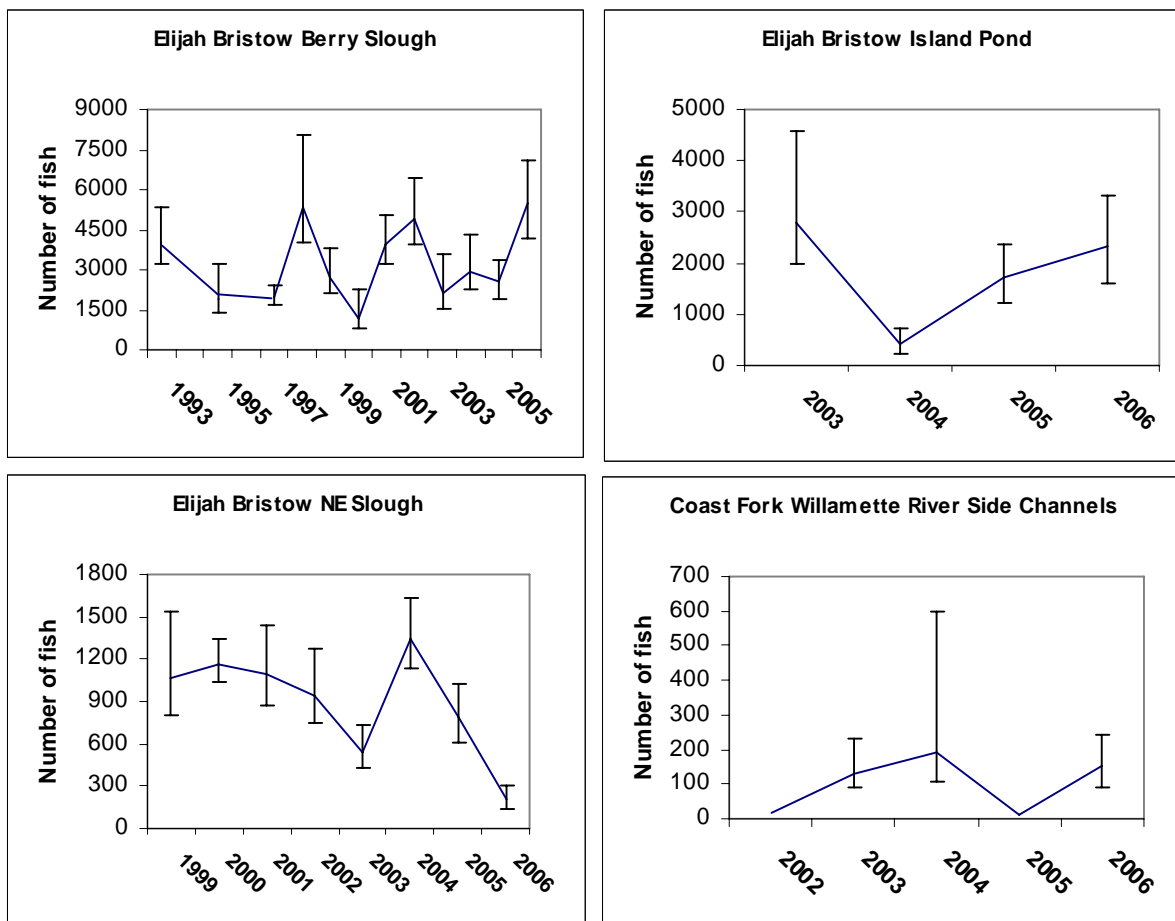


Figure 3. Abundance trends for Oregon chub populations on OPRD properties. Horizontal bars represent 95% confidence intervals for each estimate. None of the slopes of the regressions were significant.

chub introductions. In additional, there may be the potential to create additional chub habitat at upland locations on Elijah Bristow State Park.

DISCUSSION

Non-native fish are well established throughout the Willamette Valley. They threaten to invade sites containing Oregon chub and limit the ability of Oregon chub to migrate from existing sites and colonize suitable habitats elsewhere. Non-native fish are more common in off-channel habitats in the Coast Fork Willamette and mainstem Willamette River drainages than in the Middle Fork Willamette River drainage (Scheerer 2002). Because many of the OPRD sites are located in the mainstem Willamette drainage where warmwater fish are common, we were not surprised that Oregon chub were not collected from these habitats. Recovery of Oregon chub in the Coast Fork and mainstem Willamette subbasins is severely limited by the proliferation of non-native fish in off-channel habitats. The resulting paradox is that the more frequent interaction of the river with the floodplain habitats in these particular subbasins, conditions which historically created off-channel habitats and aided in the dispersal of chub, now poses a threat to Oregon chub by allowing dispersal of nonnative species (Scheerer 2002).

The majority of the off-channel habitats sampled on OPRD lands contained nonnative warmwater fishes (64 of 86 sites). OPRD properties that currently contain Oregon chub are located in the Middle Fork and Coast Fork Willamette drainages. Four of these locations also contain nonnative warmwater fish (EBN1, CF11, LYNX1, and CS4). The largest concentration of Oregon chub populations in the Willamette Valley, including non-OPRD properties, is located in the Middle Fork Willamette drainage between Oakridge and Jasper (Scheerer et al. 2006). The most abundant chub populations on OPRD property were found at Elijah Bristow State Park, which is one of the largest tracts of relatively unaltered floodplain habitat in the Willamette basin. The four U.S. Army Corps of Engineers flood control dams in the Middle Fork Willamette River reduce the magnitude of flood events in this river reach and many of the existing chub sites remain isolated during high flow events (Scheerer 2002). This isolation reduces the risk of invasion of these habitats by nonnative fishes. We recommend that OPRD actively work to protect the off-channel habitats at Elijah Bristow State Park for the benefit of Oregon chub and consider projects to create additional habitats at this location.

ACKNOWLEDGEMENTS

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APPENDIX A

Fish Species and Habitat Characteristics at Each Survey Location

Sites are sorted by subbasin then listed alphabetically by site name.

¹ Vegetation types are expressed as a percentage of the total surface area of the site. The sum of all vegetation types cannot exceed 100 percent.

² Salmonid codes: CO= coho salmon *Oncorhynchus kisutch*; CH= chinook salmon *O. tshawytscha*; CT= cutthroat trout *O. clarki*; RB= rainbow trout *O. mykiss*, TF= unknown trout fry.

OPRD Site Name	BRISTOW LANDING	OPRD Object code:	174
ODFW Site Name	COAST FORK BACKWATER RT CF9	Location: Zone 10T	501042 4865448
ODFW Map Code	CF9		

Surface Area (m2)	1170	Types of aquatic vegetation¹	
Average Depth (m)	0.9	Submergent	70
Water Temperature (C)	14	Emergent	10
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	80

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	85
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	280
Bullheads	2
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

OPRD Site Name	BRISTOW LANDING	OPRD Object code:	174
ODFW Site Name	COAST FORK OXBOW RIGHT CF8	Location: Zone 10T	501503 4865164
ODFW Map Code	CF8		

Surface Area (m2)	5600	Types of aquatic vegetation¹	
Average Depth (m)	2	Submergent	83
Water Temperature (C)	14	Emergent	14
Percent Silt / Organics	100	Floating	3
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	2
Speckled Dace	2
Redside Shiners	
Northern Pikeminnows	37
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	26
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	72
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** 10T 0501503 UTM 4865164

Appendix A (continued).

COAST FORK WILLAMETTE RIVER BASIN

OPRD Site Name	CAMAS SWALE LANDING	OPRD Object code:	175
ODFW Site Name	CAMAS SWALE	Location: Zone 10T	500716 4866815
ODFW Map Code	CS4		

Surface Area (m2)	1374	Types of aquatic vegetation¹	
Average Depth (m)	0.7	Submergent	5
Water Temperature (C)	21	Emergent	10
Percent Silt / Organics	25	Floating	5
		Algae	
		<i>Total</i>	20
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	2	Western Mosquitofish	10
Cottids	1	Bullheads	
Speckled Dace	10	Common Carp	
Redside Shiners	7	Bluegills	20
Northern Pikeminnows	1	Largemouth Bass	
Largescale Sucker		Pumpkinseeds	61
Sand Rollers	4	Crappies	1
Threespine Sticklebacks	1	Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: SHORT MOUNTAIN LANDFILL

OPRD Site Name	PETREE LANDING	OPRD Object code:	178
ODFW Site Name	COAST FORK WILLAMETTE SIDE CHN	Location: Zone 10T	498954 4857992
ODFW Map Code	CF11		

Surface Area (m2)	1344	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	55
Water Temperature (C)	14	Emergent	30
Percent Silt / Organics	5	Floating	10
		Algae	5
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	150	Western Mosquitofish	4
Cottids	4	Bullheads	
Speckled Dace	590	Common Carp	
Redside Shiners	1053	Bluegills	41
Northern Pikeminnows	613	Largemouth Bass	
Largescale Sucker	18	Pumpkinseeds	1
Sand Rollers	11	Crappies	
Threespine Sticklebacks	1132	Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: POPULATION ESTIMATE**Other:** Y. PERCH

Appendix A (continued).

COAST FORK WILLAMETTE RIVER BASIN

OPRD Site Name	LYNX HOLLOW ACCESS	OPRD Object code:	395
ODFW Site Name	LYNX HOLLOW	Location: Zone 10T	498103 4856295
ODFW Map Code	LYNX1		

Surface Area (m2)	4780	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	50
Water Temperature (C)	16	Emergent	30
Percent Silt / Organics	50	Floating	20
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	2
Cottids	1
Speckled Dace	130
Redside Shiners	19
Northern Pikeminnows	11
Largescale Sucker	17
Sand Rollers	
Threespine Sticklebacks	4
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	1
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** STATE PARK GREENWAY SITE

OPRD Site Name	GIDDING CREEK LANDING	OPRD Object code:	396
ODFW Site Name	COAST FORK BACKWATER LF- CF14	Location: Zone 10T	498245 4856340
ODFW Map Code	CF14		

Surface Area (m2)	3360	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	20
Water Temperature (C)	14	Emergent	50
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	70

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	73
Northern Pikeminnows	32
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	31
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

COAST FORK WILLAMETTE RIVER BASIN

OPRD Site Name	GIDDING CREEK LANDING	OPRD Object code:	396
ODFW Site Name	COAST FORK BACKWATER RT- CF13	Location: Zone 10T	498201 4856036
ODFW Map Code	CF13		

Surface Area (m2)	1600	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	45
Water Temperature (C)	16	Emergent	15
Percent Silt / Organics	100	Floating	5
		Algae	
		<i>Total</i>	65

Native Fish Species Collected:

Oregon Chub	0
Cottids	8
Speckled Dace	41
Redside Shiners	23
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	23
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

OPRD Site Name	GIDDING CREEK LANDING	OPRD Object code:	396
ODFW Site Name	GETTINGS CREEK	Location: Zone 10T	498705 4856360
ODFW Map Code	GT2		

Surface Area (m2)	550	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	75
Water Temperature (C)	18	Emergent	5
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	80

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	1
Redside Shiners	43
Northern Pikeminnows	2
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	9
Salmonids ² CH	1
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	2
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

COAST FORK WILLAMETTE RIVER BASIN

OPRD Site Name	OPRD-W92	OPRD Object code:	406
ODFW Site Name	COAST FORK BACKWATER RT- CF15	Location: Zone 10T	498588 4857930
ODFW Map Code	CF15		

Surface Area (m2)	900	Types of aquatic vegetation¹	
Average Depth (m)	0.7	Submergent	35
Water Temperature (C)	14	Emergent	40
Percent Silt / Organics	100	Floating	2
		Algae	
		<i>Total</i>	77

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	1
Redside Shiners	26
Northern Pikeminnows	6
Largescale Sucker	2
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	27
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

OPRD Site Name	BEARDSLEY'S BAR ACCESS	OPRD Object code:	3
ODFW Site Name	BEARDSLEY BAR	Location: Zone 10T	494989 4982157
ODFW Map Code	BB1		

Surface Area (m2)	2100	Types of aquatic vegetation¹	
Average Depth (m)	0.3	Submergent	
Water Temperature (C)	18	Emergent	
Percent Silt / Organics	10	Floating	
		Algae	100
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	2
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	5
Largescale Sucker	6
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	3

Other:**NOTE:** LARGE GRAVEL BAR

OPRD Site Name	WILLAMETTE MISSION STATE PARK	OPRD Object code:	5
ODFW Site Name	MISSION LAKE	Location: Zone 10T	496681 4992285
ODFW Map Code	MISS1		

Surface Area (m2)	160200	Types of aquatic vegetation¹	
Average Depth (m)	2	Submergent	33
Water Temperature (C)	22.5	Emergent	7
Percent Silt / Organics	100	Floating	15
		Algae	
		<i>Total</i>	55

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	1
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	5
Bullheads	
Common Carp	
Bluegills	6
Largemouth Bass	1
Pumpkinseeds	
Crappies	3
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	WILLAMETTE MISSION STATE PARK	OPRD Object code:	5
ODFW Site Name	MISSION LAKE SLOUGH	Location: Zone 10T	496527 4991681
ODFW Map Code	MISS2		

Surface Area (m2)	4500	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	15
Water Temperature (C)	26	Emergent	20
Percent Silt / Organics	50	Floating	5
		Algae	10
		<i>Total</i>	50
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	100
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	77
Northern Pikeminnows		Largemouth Bass	5
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: MISSION STATE PARK

OPRD Site Name	WILLAMETTE MISSION STATE PARK	OPRD Object code:	5
ODFW Site Name	MISSION LAKE SLOUGH	Location: Zone 10T	496527 4991681
ODFW Map Code	MISS2		

Surface Area (m2)	20800	Types of aquatic vegetation¹	
Average Depth (m)	1.5	Submergent	15
Water Temperature (C)	21	Emergent	20
Percent Silt / Organics	50	Floating	6
		Algae	10
		<i>Total</i>	51
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	600
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	1000
Northern Pikeminnows	12	Largemouth Bass	6
Largescale Sucker	1	Pumpkinseeds	100
Sand Rollers		Crappies	10
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: POTA 5 SALI 1-USFWS TO OPN CHN

Other: WARMOUTH

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	GRAND ISLAND ACCESS	OPRD Object code:	6
ODFW Site Name	LAMBERT SLOUGH (IP)	Location: Zone 10T	497957 4994439
ODFW Map Code	LAM1		

Surface Area (m2)	320	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	15
Water Temperature (C)	17	Emergent	25
Percent Silt / Organics	50	Floating	
		Algae	5
		<i>Total</i>	45

Native Fish Species Collected:

Oregon Chub	0
Cottids	2
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	26
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	28
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	5

Other:**NOTE:** BANDED KILLIFISH- TOOK SAMPLE

OPRD Site Name	ELDRIDGE BAR LANDING	OPRD Object code:	7
ODFW Site Name	TOMPKINS SLOUGH (IP)	Location: Zone 10T	499285 4994927
ODFW Map Code	TOMP1		

Surface Area (m2)	2400	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	90
Water Temperature (C)	19	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	10
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	2
Northern Pikeminnows	
Largescale Sucker	50
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	1
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	20

Other:**NOTE:** MAY DRY UP

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	JACKSON BEND LANDING	OPRD Object code:	8
ODFW Site Name	JACKSON BEND BACKWATER	Location: Zone 10T	499436 5000346
ODFW Map Code	JACKSON2		

Surface Area (m2)	4000	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	60
Water Temperature (C)	7.5	Emergent	10
Percent Silt / Organics	70	Floating	20
		Algae	10
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	22
Bullheads	
Common Carp	
Bluegills	14
Largemouth Bass	5
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	JACKSON BEND LANDING	OPRD Object code:	8
ODFW Site Name	JACKSON BEND SIDE CHANNEL	Location: Zone 10T	499356 5000240
ODFW Map Code	JACKSON1		

Surface Area (m2)	4400	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	95
Water Temperature (C)	7.5	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	95

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	200
Bullheads	
Common Carp	
Bluegills	3
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	YAMHILL LANDING	OPRD Object code:	9
ODFW Site Name	YAMHILL LANDING BACKWATER	Location: Zone 10T	496953 5007466
ODFW Map Code	YAMLAND1		

Surface Area (m2)	2000	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	95
Water Temperature (C)	10	Emergent	5
Percent Silt / Organics	60	Floating	
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	100
Cottids		Bullheads	2
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	6
Northern Pikeminnows		Largemouth Bass	31
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY, DEEP CHANNEL

OPRD Site Name	CHAMPOEG STATE HERITAGE AREA	OPRD Object code:	12
ODFW Site Name	CHAMPOEG CREEK	Location: Zone 10T	509560 5010626
ODFW Map Code	CHAMPOEG1		

Surface Area (m2)	360	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	
Water Temperature (C)	22	Emergent	
Percent Silt / Organics	50	Floating	
		Algae	
		<i>Total</i>	0
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids	11	Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: CHAMPOEG STATE PARK

OPRD Site Name	CHAMPOEG STATE HERITAGE AREA	OPRD Object code:	12
ODFW Site Name	CHAMPOEG STATE PARK POND 2	Location: Zone 10T	509555 5010628
ODFW Map Code	CHAMPOEG2		

Surface Area (m2)	750	Types of aquatic vegetation¹	
Average Depth (m)	0.75	Submergent	
Water Temperature (C)	11	Emergent	5
Percent Silt / Organics	55	Floating	
		Algae	
		<i>Total</i>	5

Native Fish Species Collected:

Oregon Chub	0
Cottids	3
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	17
Largemouth Bass	1
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	CHAMPOEG STATE HERITAGE AREA	OPRD Object code:	12
ODFW Site Name	CHAMPOEG STATE PARK POND 3	Location: Zone 10T	508542 5010434
ODFW Map Code	CHAMPOEG3		

Surface Area (m2)	440	Types of aquatic vegetation¹	
Average Depth (m)	0.35	Submergent	
Water Temperature (C)	12	Emergent	10
Percent Silt / Organics	40	Floating	
		Algae	
		<i>Total</i>	10

Native Fish Species Collected:

Oregon Chub	0
Cottids	12
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	1
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	MOLALLA RIVER STATE PARK	OPRD Object code:	16
ODFW Site Name	MOLALLA STATE PARK POND 1	Location: Zone 10T	523838 5015582
ODFW Map Code	MOLSP1		

Surface Area (m2)	2400	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	
Water Temperature (C)	12	Emergent	
Percent Silt / Organics	100	Floating	60
		Algae	
		<i>Total</i>	60
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	21
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	13
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY, TRASH

OPRD Site Name	MOLALLA RIVER STATE PARK	OPRD Object code:	16
ODFW Site Name	MOLALLA STATE PARK POND 2	Location: Zone 10T	523575 5015560
ODFW Map Code	MOLSP2		

Surface Area (m2)	910	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	30
Water Temperature (C)	11	Emergent	
Percent Silt / Organics	100	Floating	30
		Algae	
		<i>Total</i>	60
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	50
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	202
Northern Pikeminnows		Largemouth Bass	2
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY, BAIT CONTAINERS

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	MOLALLA RIVER STATE PARK	OPRD Object code:	16
ODFW Site Name	MOLALLA STATE PARK POND 3	Location: Zone 10T	523512 5015516
ODFW Map Code	MOLSP3		

Surface Area (m2)	595	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	
Water Temperature (C)	11	Emergent	10
Percent Silt / Organics	100	Floating	50
		Algae	
		<i>Total</i>	60
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	2
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	140
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY

OPRD Site Name	LINCOLN ACCESS	OPRD Object code:	36
ODFW Site Name	SPONG'S BAR BW	Location: Zone 10T	494025 4985236
ODFW Map Code	SPB1		

Surface Area (m2)	6000	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	15
Water Temperature (C)	18	Emergent	15
Percent Silt / Organics	60	Floating	
		Algae	
		<i>Total</i>	30
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker	2	Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: NEARLY BLOCKED SIDE CHANNEL

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	SPRING VALLEY ACCESS	OPRD Object code:	161
ODFW Site Name	SPRING VALLEY ACCESS BACKWATE	Location: Zone 10T	494792 4990429
ODFW Map Code	SPRING2		

Surface Area (m2)	1560	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	50
Water Temperature (C)	13	Emergent	15
Percent Silt / Organics	70	Floating	20
		Algae	
		<i>Total</i>	85
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	110
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	18	Bluegills	13
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY

OPRD Site Name	SPRING VALLEY ACCESS	OPRD Object code:	161
ODFW Site Name	SPRING VALLEY ACCESS SIDE CHNL	Location: Zone 10T	494461 4990578
ODFW Map Code	SPRING1		

Surface Area (m2)	420	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	10
Water Temperature (C)	11	Emergent	30
Percent Silt / Organics	80	Floating	20
		Algae	
		<i>Total</i>	60
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	11
Cottids	3	Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	3	Bluegills	
Northern Pikeminnows	1	Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY, SWCD GATE

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	VANDERPOOL	OPRD Object code:	171
ODFW Site Name	VANDERPOOL POND 1	Location: Zone 10T	487985 4951025
ODFW Map Code	VANDERP1		

Surface Area (m2)	6570	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	80
Water Temperature (C)	11	Emergent	10
Percent Silt / Organics	40	Floating	10
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	225
Bullheads	
Common Carp	
Bluegills	53
Largemouth Bass	4
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	VANDERPOOL	OPRD Object code:	171
ODFW Site Name	VANDERPOOL POND 3	Location: Zone 10T	487431 4951286
ODFW Map Code	VANDERP3		

Surface Area (m2)	19500	Types of aquatic vegetation¹	
Average Depth (m)	2	Submergent	20
Water Temperature (C)	11	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	20

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	100
Bullheads	
Common Carp	
Bluegills	50
Largemouth Bass	2
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	VANDERPOOL	OPRD Object code:	171
ODFW Site Name	VANDERPOOL POND 4	Location: Zone 10T	487812 4951133
ODFW Map Code	VANDERP4		

Surface Area (m2)	0	Types of aquatic vegetation ¹	
Average Depth (m)	0		
Water Temperature (C)			
Percent Silt / Organics	100		
		Submergent	
		Emergent	
		Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other: NO FISH**NOTE:** OPRD SURVEY- DRY POND

OPRD Site Name	VANDERPOOL	OPRD Object code:	171
ODFW Site Name	VANDERPOOL SLOUGH	Location: Zone 10T	487625 4951443
ODFW Map Code	VANDERP2		

Surface Area (m2)	0	Types of aquatic vegetation ¹	
Average Depth (m)	0		
Water Temperature (C)			
Percent Silt / Organics	100		
		Submergent	
		Emergent	
		Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other: NO FISH**NOTE:** OPRD SURVEY- DRY SLOUGH, BAIT CONTAINERS

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	OPRD-W44	OPRD Object code:	293
ODFW Site Name	SIDNEY DITCH	Location: Zone 10T	493060 4960736
ODFW Map Code	SIDNEY2		

Surface Area (m2)	630	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	
Water Temperature (C)	22	Emergent	
Percent Silt / Organics	30	Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	2
Speckled Dace	1
Redside Shiners	3
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	1
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** SIDNEY ROAD / WATER DIVERSION

OPRD Site Name	MARY S YOUNG	OPRD Object code:	471
ODFW Site Name	MELDRUM	Location: Zone 10T	529916 5025058
ODFW Map Code	MELDRUM1		

Surface Area (m2)	600	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	
Water Temperature (C)	23	Emergent	
Percent Silt / Organics	10	Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	8
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	22

Other:**NOTE:** SAMPLED WITH ODFW DISTRICT BY SLED

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	INDEPENDENCE ISLAND	OPRD Object code:	624
ODFW Site Name	INDEPENDENCE ISLAND ISOL POND	Location: Zone 10T	485743 4965527
ODFW Map Code	INDEPIS2		
Surface Area (m2)	1560	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	20
Water Temperature (C)	13	Emergent	70
Percent Silt / Organics	20	Floating	
		Algae	10
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	NO FISH
NOTE: OPRD SURVEY			
OPRD Site Name	INDEPENDENCE ISLAND	OPRD Object code:	625
ODFW Site Name	INDEPENDENCE ISLAND BACKWATER	Location: Zone 10T	485713 4965661
ODFW Map Code	INDEPIS1		
Surface Area (m2)	1500	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	30
Water Temperature (C)	13	Emergent	50
Percent Silt / Organics	70	Floating	10
		Algae	10
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	12
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	12	Bluegills	42
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	
NOTE: OPRD SURVEY			

Appendix A (continued).

LOWER WILLAMETTE RIVER BASIN

OPRD Site Name	LUCKIAMUTE LANDING	OPRD Object code:	631
ODFW Site Name	LUCKIAMUTE LANDING	Location: Zone 10T	488643 4954701
ODFW Map Code	LUCKLAND1		

Surface Area (m2)	3300	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	75
Water Temperature (C)	9	Emergent	20
Percent Silt / Organics	80	Floating	5
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	110
Cottids		Bullheads	2
Speckled Dace		Common Carp	
Redside Shiners	3	Bluegills	5
Northern Pikeminnows		Largemouth Bass	2
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY

OPRD Site Name	WINDSOR ISLAND ACCESS	OPRD Object code:	723
ODFW Site Name	WINDSOR SLOUGH	Location: Zone 10T	494576 4986469
ODFW Map Code	WIND2		

Surface Area (m2)	6000	Types of aquatic vegetation¹	
Average Depth (m)	1.5	Submergent	
Water Temperature (C)	13	Emergent	10
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	10
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	2
Cottids	4	Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	1	Bluegills	2
Northern Pikeminnows	2	Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks	1	Smallmouth Bass	
Salmonids ² CH	1	Banded Killifish	
Lamprey			
Chiselmouth	7		
		Other:	

NOTE: PROPOSED GRAVEL EXPANSION

OPRD Site Name	GLASSBAR ISLAND	OPRD Object code:	34
ODFW Site Name	MIDDLE FK WILLAMETTE BACKWATER	Location: Zone 10T	498068 4874311
ODFW Map Code	MF6		

Surface Area (m2)	520	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	75
Water Temperature (C)	12	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	75

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	23
Redside Shiners	28
Northern Pikeminnows	44
Largescale Sucker	1
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	4
Bullheads	
Common Carp	
Bluegills	3
Largemouth Bass	
Pumpkinseeds	2
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

OPRD Site Name	LOG JAM LANDING	OPRD Object code:	180
ODFW Site Name	WALLACE SLOUGH	Location: Zone 10T	507160 4872225
ODFW Map Code	WALL1		

Surface Area (m2)	2400	Types of aquatic vegetation¹	
Average Depth (m)	1.5	Submergent	25
Water Temperature (C)	10	Emergent	5
Percent Silt / Organics	90	Floating	3
		Algae	
		<i>Total</i>	33

Native Fish Species Collected:

Oregon Chub	3
Cottids	2
Speckled Dace	
Redside Shiners	4
Northern Pikeminnows	2
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	122
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	1
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** LANE CO. ROAD REALIGNMENT

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	LOG JAM LANDING	OPRD Object code:	180
ODFW Site Name	WALLACE SLOUGH	Location: Zone 10T	507160 4872225
ODFW Map Code	WALL1		

Surface Area (m2)	3600	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	10
Water Temperature (C)	7.5	Emergent	15
Percent Silt / Organics	90	Floating	5
		Algae	
		<i>Total</i>	30

Native Fish Species Collected:

Oregon Chub	0
Cottids	3
Speckled Dace	
Redside Shiners	17
Northern Pikeminnows	4
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	1
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	E. BRISTOW ISLAND N SHORE BW	Location: Zone 10T	514866 4864320
ODFW Map Code	EBI3		

Surface Area (m2)	20	Types of aquatic vegetation¹	
Average Depth (m)	0.1	Submergent	
Water Temperature (C)	18	Emergent	80
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	80

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:

NO FISH

NOTE: ISLAND BW NORTH SIDE, DRIES UP?

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	E. BRISTOW ISLAND N SHORE CHNL	Location: Zone 10T	514951 4864113
ODFW Map Code	EBI2		

Surface Area (m2)	1120	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	
Water Temperature (C)	18	Emergent	
Percent Silt / Organics	0	Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ² CH	5
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** SIDE CHANNEL NORTH SHORE

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW BERRY SLOUGH	Location: Zone 10T	513244 4865199
ODFW Map Code	EB1-11		

Surface Area (m2)	10301	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	10
Water Temperature (C)	10	Emergent	90
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	5455
Cottids	1
Speckled Dace	488
Redside Shiners	747
Northern Pikeminnows	
Largescale Sucker	2
Sand Rollers	
Threespine Sticklebacks	327
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** POPULATION ESTIMATE

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW BORROW PIT	Location: Zone 10T	513833 4864424
ODFW Map Code	EB16		

Surface Area (m2)	30	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	30
Water Temperature (C)	12	Emergent	25
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	55

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	50
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** ISOLATED SMALL PIT NEAR EB15

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW BORROW PIT	Location: Zone 10T	513833 4864424
ODFW Map Code	EB16		

Surface Area (m2)	150	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	30
Water Temperature (C)	18	Emergent	25
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	55

Native Fish Species Collected:

Oregon Chub	31
Cottids	
Speckled Dace	
Redside Shiners	2
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** ISOLATED SMALL PIT

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW BORROW PIT	Location: Zone 10T	513801 4864846
ODFW Map Code	EB14		

Surface Area (m2)	2000	Types of aquatic vegetation¹	
Average Depth (m)	2	Submergent	40
Water Temperature (C)	17	Emergent	5
Percent Silt / Organics	0	Floating	
		Algae	
		<i>Total</i>	45
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	11
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: NEAR 2 ROAD CROSS @ 90 DEGREES

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW ISLAND NORTH BW	Location: Zone 10T	514933 4863715
ODFW Map Code	EB1		

Surface Area (m2)	300	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	
Water Temperature (C)	18	Emergent	4
Percent Silt / Organics	5	Floating	
		Algae	
		<i>Total</i>	4
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ² CH	1	Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: BACKWATER NORTH SIDE ISLAND

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW ISLAND POND	Location: Zone 10T	514043 4864334
ODFW Map Code	MF8,12		

Surface Area (m2)	10490	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	85
Water Temperature (C)	13.5	Emergent	7
Percent Silt / Organics	96	Floating	
		Algae	
		<i>Total</i>	92
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	2309	Western Mosquitofish	20
Cottids	668	Bullheads	
Speckled Dace	571	Common Carp	
Redside Shiners	5	Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker	15	Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: POPULATION ESTIMATE

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW LGE GRAVEL PIT	Location: Zone 10T	513884 4864390
ODFW Map Code	EB13		

Surface Area (m2)	500	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	70
Water Temperature (C)	15	Emergent	20
Percent Silt / Organics	75	Floating	
		Algae	
		<i>Total</i>	90
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	200
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	2
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE:

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW LGE GRAVEL PIT	Location: Zone 10T	513884 4864390
ODFW Map Code	EB13		

Surface Area (m2)	64	Types of aquatic vegetation¹	
Average Depth (m)	0.1	Submergent	25
Water Temperature (C)	21	Emergent	5
Percent Silt / Organics	100	Floating	5
		Algae	
		<i>Total</i>	35
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	22	Western Mosquitofish	42
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: VERY LOW WATER LVL- 1210 CFS

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW NORTH SLOUGH	Location: Zone 10T	514931 4864608
ODFW Map Code	EBN1		

Surface Area (m2)	5800	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	40
Water Temperature (C)	13	Emergent	10
Percent Silt / Organics	100	Floating	50
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	206	Western Mosquitofish	
Cottids	3	Bullheads	
Speckled Dace	15	Common Carp	
Redside Shiners	14	Bluegills	2
Northern Pikeminnows	2	Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: POPULATION ESTIMATE

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	513913 4864268
ODFW Map Code	EB19		

Surface Area (m2)	300	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	50
Water Temperature (C)	18	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	50
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** OLD CHANNELS ADJACENT TO TRAIL

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514952 4863462
ODFW Map Code	EB25		

Surface Area (m2)	600	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	10
Water Temperature (C)	11	Emergent	40
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	50

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** NO FISH, B.DAM FORMS

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	513874 4864379
ODFW Map Code	EB18		

Surface Area (m2)	525	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	80
Water Temperature (C)	10.5	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	80

Native Fish Species Collected:

Oregon Chub	0
Cottids	1
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	3
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** BACKWATER CONNECTED TO RIVER

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	513921 4864130
ODFW Map Code	EB20		

Surface Area (m2)	200	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	50
Water Temperature (C)	10.5	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	50
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514551 4863630
ODFW Map Code	EB21		

Surface Area (m2)	1950	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	10
Water Temperature (C)	14	Emergent	
Percent Silt / Organics	0	Floating	
		Algae	
		<i>Total</i>	10

Native Fish Species Collected:

Oregon Chub	11
Cottids	3
Speckled Dace	102
Redside Shiners	51
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	3
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OFF OLD RIVER CHANNEL

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514521 4863691
ODFW Map Code	EB22		

Surface Area (m2)	120	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	
Water Temperature (C)	20	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514711 4863561
ODFW Map Code	EB23		

Surface Area (m2)	840	Types of aquatic vegetation¹	
Average Depth (m)	0.3	Submergent	5
Water Temperature (C)	14	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	50
		<i>Total</i>	55

Native Fish Species Collected:

Oregon Chub	3
Cottids	
Speckled Dace	72
Redside Shiners	88
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** IRRIGATION PIPE IN POND

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514711 4863561
ODFW Map Code	EB23		

Surface Area (m2)	3000	Types of aquatic vegetation¹	
Average Depth (m)	1.3	Submergent	
Water Temperature (C)	12	Emergent	25
Percent Silt / Organics	80	Floating	
		Algae	10
		<i>Total</i>	35

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	99
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514551 4863630
ODFW Map Code	EB21		

Surface Area (m2)	360	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	
Water Temperature (C)	11	Emergent	10
Percent Silt / Organics	0	Floating	
		Algae	
		<i>Total</i>	10

Native Fish Species Collected:

Oregon Chub	0
Cottids	4
Speckled Dace	4
Redside Shiners	51
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	12
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** FLOOD WIPED OUT CHANNEL

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	513886 4864333
ODFW Map Code	EB17		

Surface Area (m2)	180	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	20
Water Temperature (C)	10.5	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	20

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	3
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPEN TO RIVER- NOT ISOLATED

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	514921 4863520
ODFW Map Code	EB24		

Surface Area (m2)	360	Types of aquatic vegetation¹	
Average Depth (m)	0.8	Submergent	20
Water Temperature (C)	11	Emergent	
Percent Silt / Organics	10	Floating	
		Algae	50
		<i>Total</i>	70

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** NO FISH, STEEP SIDED

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH UPPER	Location: Zone 10T	514010 4864965
ODFW Map Code	EB27		

Surface Area (m2)	1800	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	55
Water Temperature (C)	12	Emergent	5
Percent Silt / Organics	100	Floating	5
		Algae	30
		<i>Total</i>	95

Native Fish Species Collected:

Oregon Chub	1
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	1
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish
Bullheads
Common Carp
Bluegills
Largemouth Bass
Pumpkinseeds
Crappies
Smallmouth Bass
Banded Killifish

Other:**NOTE:** LOOP RIVER TRAIL, RSN, NW SAL

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SHALLOW E SLOUG	Location: Zone 10T	513935 4864552
ODFW Map Code	EB28		

Surface Area (m2)	5200	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	75
Water Temperature (C)	18	Emergent	20
Percent Silt / Organics	100	Floating	1
		Algae	
		<i>Total</i>	96

Native Fish Species Collected:**Oregon Chub**

Cottids
 Speckled Dace
 Redside Shiners
 Northern Pikeminnows
 Largescale Sucker
 Sand Rollers
 Threespine Sticklebacks
 Salmonids²
 Lamprey
 Chiselmouth

Non-native Fish Species Collected:

Western Mosquitofish
 Bullheads
 Common Carp
 Bluegills
 Largemouth Bass
 Pumpkinseeds
 Crappies
 Smallmouth Bass
 Banded Killifish

Other: NO FISH

NOTE: DRIES UP MOST YEARS

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SMALL GRAVL PIT	Location: Zone 10T	513883 4864404
ODFW Map Code	EB15		

Surface Area (m2)	150	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	50
Water Temperature (C)	16	Emergent	50
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:**Oregon Chub**

Cottids
 Speckled Dace
 Redside Shiners
 Northern Pikeminnows
 Largescale Sucker
 Sand Rollers
 Threespine Sticklebacks
 Salmonids²
 Lamprey
 Chiselmouth

Non-native Fish Species Collected:

Western Mosquitofish
 Bullheads
 Common Carp
 Bluegills
 Largemouth Bass
 Pumpkinseeds
 Crappies
 Smallmouth Bass
 Banded Killifish

Other:

NOTE: ISOLATED SMALL PIT

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	ELIJAH BRISTOW SMALL GRAVL PIT	Location: Zone 10T	513883 4864404
ODFW Map Code	EB15		

Surface Area (m2)	1	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	30
Water Temperature (C)	12	Emergent	50
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	80
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	1
Cottids		Bullheads	
Speckled Dace	4	Common Carp	
Redside Shiners	13	Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE:

OPRD Site Name	ELIJAH BRISTOW	OPRD Object code:	301
ODFW Site Name	LOST CREEK CHANNEL TO SLOUGH	Location: Zone 10T	512633 4864955
ODFW Map Code	EB12		

Surface Area (m2)	120	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	
Water Temperature (C)	16	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	0
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: NOT CONN.TO LOST CK @ LOW FLOW

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	DEXTER STATE RECREATION AREA	OPRD Object code:	303
ODFW Site Name	DEXTER DAM SLOUGH	Location: Zone 10T	514967 4863197
ODFW Map Code	DEX10		

Surface Area (m2)	19500	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	85
Water Temperature (C)	16	Emergent	5
Percent Silt / Organics	90	Floating	5
		Algae	
		<i>Total</i>	95
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	35
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	99	Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: AZOL 3 TYPH 2, BV, OSPREY

OPRD Site Name	DEXTER STATE RECREATION AREA	OPRD Object code:	303
ODFW Site Name	ELIJAH BRISTOW SE SLOUGH	Location: Zone 10T	515281 4863226
ODFW Map Code	EB26		

Surface Area (m2)	1800	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	70
Water Temperature (C)	19.5	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	70
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	20
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: MILLIONS OF BULLFROG TADPOLES

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	WILLIS REFUGE	OPRD Object code:	394
ODFW Site Name	WILLIS REFUGE SLOUGH	Location: Zone 10T	487675 4892855
ODFW Map Code	WILLIS1		

Surface Area (m2)	1500	Types of aquatic vegetation¹	
Average Depth (m)	0.45	Submergent	40
Water Temperature (C)	13	Emergent	20
Percent Silt / Organics	60	Floating	5
		Algae	30
		<i>Total</i>	95

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	125
Northern Pikeminnows	4
Largescale Sucker	12
Sand Rollers	
Threespine Sticklebacks	21
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	86
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** LOTS OF AQUATIC INVERTS, LEECHES

OPRD Site Name	WILLAMETTE RIVER GREENWAY W-8	OPRD Object code:	407
ODFW Site Name	MIDDLE FORK WILLAMETTE SLOUGH	Location: Zone 10T	510806 4868008
ODFW Map Code	MF10		

Surface Area (m2)	1560	Types of aquatic vegetation¹	
Average Depth (m)	0.9	Submergent	30
Water Temperature (C)	12.5	Emergent	60
Percent Silt / Organics	95	Floating	
		Algae	
		<i>Total</i>	90

Native Fish Species Collected:

Oregon Chub	0
Cottids	1
Speckled Dace	4
Redside Shiners	24
Northern Pikeminnows	15
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	6
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** JUST UPSTREAM MOUTH FALL CREEK

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER BASIN

OPRD Site Name	JASPER STATE RECREATION SITE	OPRD Object code:	562
ODFW Site Name	JASPER PARK SLOUGH	Location: Zone 10T	507693 4870573
ODFW Map Code	CAP1		

Surface Area (m2)	2025	Types of aquatic vegetation¹	
Average Depth (m)	1.2	Submergent	80
Water Temperature (C)	18.5	Emergent	10
Percent Silt / Organics	100	Floating	5
		Algae	5
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	3
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	9
Bullheads	
Common Carp	
Bluegills	68
Largemouth Bass	3
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** 20/9:36

OPRD Site Name	JASPER STATE RECREATION SITE	OPRD Object code:	562
ODFW Site Name	JASPER PARK SLOUGH	Location: Zone 10T	507693 4870573
ODFW Map Code	CAP1		

Surface Area (m2)	3600	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	100
Water Temperature (C)	10	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	5
Redside Shiners	4
Northern Pikeminnows	
Largescale Sucker	1
Sand Rollers	
Threespine Sticklebacks	2
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	1
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** CHOKED WITH PARROTFEATHER

Appendix A (continued).

MIDDLE FORK WILLAMETTE RIVER **BASIN**

OPRD Site Name	JASPER STATE RECREATION SITE	OPRD Object code:	562
ODFW Site Name	JASPER-LOWELL SLOUGH	Location: Zone 10T	508220 4870500
ODFW Map Code	JS4		

Surface Area (m2)	900	Types of aquatic vegetation¹	
Average Depth (m)	0.7	Submergent	
Water Temperature (C)	15.5	Emergent	
Percent Silt / Organics	100	Floating	92
		Algae	8
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	3
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:

NOTE:

OPRD Site Name	MARSHALL ISLAND LANDING	OPRD Object code:	29
ODFW Site Name	MARSHALL ISLAND SLOUGH	Location: Zone 10T	487445 4893448
ODFW Map Code	MARSHALL1		

Surface Area (m2)	440	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	65
Water Temperature (C)	13.5	Emergent	35
Percent Silt / Organics	80	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	66
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	100
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	MARSHALL ISLAND LANDING	OPRD Object code:	29
ODFW Site Name	MARSHALL ISLAND SLOUGH	Location: Zone 10T	487401 4893590
ODFW Map Code	MARSHALL2		

Surface Area (m2)	2500	Types of aquatic vegetation¹	
Average Depth (m)	0.2	Submergent	60
Water Temperature (C)	14	Emergent	
Percent Silt / Organics	70	Floating	40
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	14
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	55
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	BEACON LANDING	OPRD Object code:	31
ODFW Site Name	WILLAMETTE GREENWAY BW 9	Location: Zone 10T	491402 4883777
ODFW Map Code	WIL9		

Surface Area (m2)	7500	Types of aquatic vegetation¹	
Average Depth (m)	0.6	Submergent	30
Water Temperature (C)	18	Emergent	20
Percent Silt / Organics	10	Floating	
		Algae	
		<i>Total</i>	50

Native Fish Species Collected:

Oregon Chub	0
Cottids	10
Speckled Dace	6
Redside Shiners	22
Northern Pikeminnows	11
Largescale Sucker	2
Sand Rollers	
Threespine Sticklebacks	30
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** NEAR PROPOSED GRAVEL OPERATION

OPRD Site Name	WHITLEY LANDING	OPRD Object code:	33
ODFW Site Name	SANTA CLARA BOAT RAMP SLOUGH	Location: Zone 10T	491289 4884983
ODFW Map Code	BRS1		

Surface Area (m2)	420	Types of aquatic vegetation¹	
Average Depth (m)	0.7	Submergent	45
Water Temperature (C)	13	Emergent	20
Percent Silt / Organics	70	Floating	
		Algae	
		<i>Total</i>	65

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	75
Redside Shiners	3
Northern Pikeminnows	95
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	20
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	14
Bullheads	
Common Carp	
Bluegills	10
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:**

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	BLUE RUIN LANDING	OPRD Object code:	63
ODFW Site Name	BLUE RUIN SLOUGH	Location: Zone 10T	487266 4897379
ODFW Map Code	BLRUIN1		

Surface Area (m2)	2400	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	70
Water Temperature (C)	13	Emergent	25
Percent Silt / Organics	70	Floating	
		Algae	5
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	66
Cottids		Bullheads	1
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	15
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	2
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY, WILLOW CHOKED CHNL USTR

OPRD Site Name	BLUE RUIN ISLAND	OPRD Object code:	64
ODFW Site Name	BLUE RUIN SIDE CHANNEL	Location: Zone 10T	487531 4896881
ODFW Map Code	BLRUIN2		

Surface Area (m2)	3750	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	35
Water Temperature (C)	15	Emergent	16
Percent Silt / Organics	30	Floating	5
		Algae	30
		<i>Total</i>	86
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	150
Cottids		Bullheads	
Speckled Dace	1	Common Carp	
Redside Shiners	115	Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks	152	Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	SAM DAWS LANDING	OPRD Object code:	163
ODFW Site Name	SAM DAWS LANDING	Location: Zone 10T	482044 4917545
ODFW Map Code	SAMDAWS1		

Surface Area (m2)	151	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	
Water Temperature (C)	14	Emergent	10
Percent Silt / Organics	0	Floating	10
		Algae	10
		<i>Total</i>	30

Native Fish Species Collected:

Oregon Chub	0
Cottids	2
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	SAM DAWS LANDING	OPRD Object code:	163
ODFW Site Name	SAM DAWS LANDING	Location: Zone 10T	482129 4917544
ODFW Map Code	SAMDAWS2		

Surface Area (m2)	2250	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	40
Water Temperature (C)	14	Emergent	25
Percent Silt / Organics	35	Floating	25
		Algae	10
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	5
Speckled Dace	12
Redside Shiners	23
Northern Pikeminnows	10
Largescale Sucker	9
Sand Rollers	
Threespine Sticklebacks	26
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	25
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** CHUB-LIKE HABITAT, HIGH CONNECT, OPRD

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	HOACUM ISLAND LANDING	OPRD Object code:	165
ODFW Site Name	HOACUM ISLAND LANDING	Location: Zone 10T	481861 4921058
ODFW Map Code	HOACUM1		

Surface Area (m2)	1050	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	50
Water Temperature (C)	13	Emergent	25
Percent Silt / Organics	15	Floating	10
		Algae	
		<i>Total</i>	85

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	15
Redside Shiners	112
Northern Pikeminnows	110
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	22
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	TRUAX ISLAND ACCESS	OPRD Object code:	167
ODFW Site Name	TRUAX ISLAND SLOUGH	Location: Zone 10T	485201 4736232
ODFW Map Code	TRUAX1		

Surface Area (m2)	11000	Types of aquatic vegetation¹	
Average Depth (m)	0.4	Submergent	70
Water Temperature (C)	11	Emergent	20
Percent Silt / Organics	85	Floating	
		Algae	
		<i>Total</i>	90

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	200
Bullheads	
Common Carp	
Bluegills	6
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	RIVERSIDE LANDING	OPRD Object code:	168
ODFW Site Name	RIVERSIDE LANDING GREENWAY	Location: Zone 10T	484512 4938225
ODFW Map Code	RIVERSID1		

Surface Area (m2)	150	Types of aquatic vegetation¹	
Average Depth (m)	0.1	Submergent	
Water Temperature (C)	13	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	0
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	
Cottids		Bullheads	3
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	25
Northern Pikeminnows		Largemouth Bass	1
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE: OPRD SURVEY

OPRD Site Name	BOWERS ROCK STATE PARK	OPRD Object code:	169
ODFW Site Name	BOWERS ROCK BACKWATER	Location: Zone 10T	487555 4942054
ODFW Map Code	BWR1		

Surface Area (m2)	17700	Types of aquatic vegetation¹	
Average Depth (m)	1.5	Submergent	100
Water Temperature (C)	19	Emergent	
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	150
Cottids		Bullheads	
Speckled Dace		Common Carp	12
Redside Shiners	20	Bluegills	62
Northern Pikeminnows		Largemouth Bass	2
Largescale Sucker	20	Pumpkinseeds	
Sand Rollers		Crappies	6
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			

NOTE:

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	BOWERS ROCK STATE PARK	OPRD Object code:	169
ODFW Site Name	BOWERS ROCK BACKWATER	Location: Zone 10T	487098 4942107
ODFW Map Code	BWR3		

Surface Area (m2)	960	Types of aquatic vegetation¹	
Average Depth (m)	0.7	Submergent	70
Water Temperature (C)	20.5	Emergent	30
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	198
Bullheads	
Common Carp	
Bluegills	4
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** .7m TO 1m DOWN FROM FIRST SITE

OPRD Site Name	BOWERS ROCK STATE PARK	OPRD Object code:	169
ODFW Site Name	BOWERS ROCK BACKWATER	Location: Zone 10T	487326 4942162
ODFW Map Code	BWR2		

Surface Area (m2)	640	Types of aquatic vegetation¹	
Average Depth (m)	0.1	Submergent	90
Water Temperature (C)	20	Emergent	10
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	100
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** PROB DRY UP- BV CHAN ONLY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	GRAVEL BAR LANDING	OPRD Object code:	294
ODFW Site Name	GREEN ISLAND	Location: Zone 10T	490046 4889513
ODFW Map Code	GREEN1		

Surface Area (m2)	19933	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	20
Water Temperature (C)	20.5	Emergent	45
Percent Silt / Organics	5	Floating	10
		Algae	
		<i>Total</i>	75
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	100
Cottids	5	Bullheads	
Speckled Dace	1	Common Carp	10
Redside Shiners	1	Bluegills	6
Northern Pikeminnows	1	Largemouth Bass	4
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks	46	Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OLD MCK CHANL, MCKENZIE RIVER TRUST

OPRD Site Name	HARKENS LAKE LANDING	OPRD Object code:	295
ODFW Site Name	HARKENS LAKE LANDING ALCOVE	Location: Zone 10T	481427 4909444
ODFW Map Code	HARKENS2		

Surface Area (m2)	4000	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	70
Water Temperature (C)	9	Emergent	20
Percent Silt / Organics	85	Floating	10
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	58
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners	1	Bluegills	
Northern Pikeminnows	11	Largemouth Bass	1
Largescale Sucker	4	Pumpkinseeds	3
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	HARKENS LAKE LANDING	OPRD Object code:	295
ODFW Site Name	HARKENS LAKE LANDING ISOL POND	Location: Zone 10T	481455 4909815
ODFW Map Code	HARKENS1		

Surface Area (m2)	3300	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	80
Water Temperature (C)	9	Emergent	20
Percent Silt / Organics	100	Floating	
		Algae	
		<i>Total</i>	100

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	22
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	50
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

OPRD Site Name	SPRING HILL	OPRD Object code:	314
ODFW Site Name	SPRING HILL GREENWAY	Location: Zone 10T	490794 4946771
ODFW Map Code	SPRINGH1		

Surface Area (m2)	25	Types of aquatic vegetation¹	
Average Depth (m)	0.3	Submergent	
Water Temperature (C)	12	Emergent	
Percent Silt / Organics	0	Floating	
		Algae	
		<i>Total</i>	0

Native Fish Species Collected:

Oregon Chub	0
Cottids	
Speckled Dace	
Redside Shiners	22
Northern Pikeminnows	
Largescale Sucker	
Sand Rollers	
Threespine Sticklebacks	
Salmonids ²	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:**NOTE:** OPRD SURVEY

Appendix A (continued).

MID-WILLAMETTE RIVER BASIN

OPRD Site Name	HALF MOON BEND	OPRD Object code:	375
ODFW Site Name	HALF MOON BEND LANDING POND	Location: Zone 10T	484589 4937751
ODFW Map Code	HALFMOON1		

Surface Area (m2)	585	Types of aquatic vegetation¹	
Average Depth (m)	0.5	Submergent	95
Water Temperature (C)	9	Emergent	1
Percent Silt / Organics	10	Floating	4
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	115
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	
Northern Pikeminnows		Largemouth Bass	
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks		Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY, POND HALF OPRD/PRIVATE

OPRD Site Name	MARSHALL ISLAND ACCESS	OPRD Object code:	405
ODFW Site Name	MARSHALL ISLAND POND	Location: Zone 10T	488105 4892572
ODFW Map Code	MARSHALL3		

Surface Area (m2)	6000	Types of aquatic vegetation¹	
Average Depth (m)	1	Submergent	35
Water Temperature (C)	11	Emergent	65
Percent Silt / Organics	45	Floating	
		Algae	
		<i>Total</i>	100
Native Fish Species Collected:		Non-native Fish Species Collected:	
Oregon Chub	0	Western Mosquitofish	25
Cottids		Bullheads	
Speckled Dace		Common Carp	
Redside Shiners		Bluegills	12
Northern Pikeminnows		Largemouth Bass	3
Largescale Sucker		Pumpkinseeds	
Sand Rollers		Crappies	
Threespine Sticklebacks	51	Smallmouth Bass	
Salmonids ²		Banded Killifish	
Lamprey			
Chiselmouth			
		Other:	

NOTE: OPRD SURVEY



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