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SUMMARY

Oregon chub *Oregonichthys crameri,* small minnows endemic to the Willamette Valley, were federally listed as endangered under the Endangered Species Act in 1993. Factors implicated in the decline of this species include changes in flow regimes and habitat characteristics resulting from the construction of flood control dams, revetments, channelization, diking, and the drainage of wetlands. 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*. We continued surveys initiated in 1991 in the Willamette River drainage to quantify the abundance of known Oregon chub populations, search for unknown populations, evaluate potential introduction sites, and monitor introduced populations as part of the implementation of the Oregon Chub Recovery Plan.

We sampled a total of 70 sites in 2007. New populations of Oregon chub were discovered at Green Island in the lower McKenzie River and in the Muddy Creek drainage (Linn County). We confirmed the continued existence of Oregon chub at 34 locations. These included 23 naturally occurring and 11 introduced populations. We did not find Oregon chub at nine locations where they were collected on at least one occasion between 1991-2006. Nonnative fish were collected at most of these locations.

We obtained abundance estimates of 18 naturally occurring populations and 11 introduced populations of Oregon chub located in the Middle Fork Willamette, Santiam, McKenzie, and Mid-Willamette drainages (Table 1). We introduced additional Oregon chub into the South Stayton Pond in the Santiam drainage and into Cheadle and Display Ponds in the Mid-Willamette drainage.

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 2007, there were 20 populations totaling 500 or more individuals (Table 1). Fifteen of these populations also met the second criteria. Of the 15 populations meeting criteria 1 and 2, eight were located in the Middle Fork Willamette drainage, four were located in the Mid-Willamette drainage, and three were located in the Santiam drainage. In 2007, we met the downlisting criteria.

Findings to date indicate that Oregon chub remain at risk due to the loss of suitable habitat and the continued threats posed by the proliferation of non-native fishes, illegal water withdrawals, accelerated sedimentation, and potential chemical spills or careless pesticide applications. Their status has improved in recent years, resulting primarily from successful introductions and the discovery of previously undocumented populations.

Table 1. Oregon chub population abundance estimates from 1992-2007. Abundances are mark-recapture estimates, except those shown in bold, which are the number of fish captured. Site names in bold italics are locations where Oregon chub were introduced. The number of fish stocked at introduction sites is shown in parentheses. Basin codes: SANT- Santiam, MS- Mid-Willamette, MFW- Middle Fork Willamette, MCK- McKenzie, and CFW- Coast Fork Willamette. See *Methods* for definitions of five year abundance trends. Five-year trends were not assessed if data were not available for at least five years, if the population abundance was less than 500 fish, or if abundance was not estimated using mark-recapture techniques.

Site Name	Basin	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	5-Year Trend
Foster Pullout Pond	SANT								(85)	(20) 80	(75) 210	(50) 320	(158) 640	(112) 570	200	470	980	stable
Gray Slough	SANT				**2**	**3**	**2**	**0**	**13**	**4**	**2**	12	270	340	260	700	560	stable
South Stayton Pond	SANT															(54)	560	
Geren Island North Channel	SANT					8,340	8,660	1,830	860	360	760	740	1,590	2,290	2,630	1,020	510	stable
Pioneer Park Backwater	SANT						**2**	**0**	**0**	**2**	**9**	**4**	**6**	**0**	**4**	110	420	
Stayton Public Works Pond	SANT							**3**	**4**	**1**	**0**	**0**	**0**	**21**	530	440	270	
Santiam I-5 Side Channels	SANT						**5**	**2**	**3**	**13**	**13**	350	220	320	580	330	**22**	
Green's Bridge Slough	SANT		**5**			**2**	**5**	**0**	**2**	**0**	**3**	**2**	**4**	**0**	**7**	**6**	**1**	
Santiam Easement	SANT			1,250		830	300	250	**13**	**4**	**12**	**2**	**0**	**1**	**0**	**3**	**0**	
Menear's Bend	SANT									(15)	**7**	(26) 29	**0**	**0**	.....pond dried up.....			
Logan Slough	SANT						**2**			**0**								
Dunn Wetland	MS						(200)	(373) 460	4,860	14,090	26,240	19,270	28,740	25,810	28,290	21,530	34,530	stable
Ankeny Willow Marsh	MS													(500)	10,110	35,650	26,420	
Jampolsky Wetlands	MS													(500)	1,230	8,320	4,160	
Finley Cheadle Pond	MS											(50)	50	220	1,300	900	1,740	increasing
Finley Gray Creek Swamp	MS		370	600	460	470	520	620	510	730	630	290	230	520	240	1,390	1,400	increasing
Finley Display Pond	MS							(60)	(45) 360	1,750	(49) 670	500	130	70	240	240	230	
Muddy Creek	MS																**3**	
Dry Muddy Creek	MS			**26**			**2**	.....			.....denied access.....		**22**	**1**	**4**	**0**	**0**	
Bull Run Creek	MS														**2**	**0**	**0**	
Little Muddy Creek tributary	MS													**5**	**0**	**0**	**0**	
Camous Creek	MS		**5**			**5**		.....					.....denied access.....			**0**		
Russell Pond	MCK										(350)	(150) 470	450	720	810	1,000	1,400	increasing
Shetzline Pond	MCK											120	650	1,050	730	390	210	
Big Island	MCK											940	620	310	430	380	190	
Green Island	MCK																**12**	
Ezell Slough	MCK														**6**			
Shady Dell Pond	MFW		1,630	4,770	3,770	4,240	3,790	3,650	2,860	3,830	2,280	2,420	2,330	4,210	3,110	5,430	7,250	increasing
E.Bristow St. Park- Berry Slough	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	6,580	increasing
Dexter Reservoir RV Alcove- DEX3	MFW	**59**			**15**		1,330	830	50	880	1,950	2,270	870	790	1,850	3,310	4,020	increasing
Wicopee Pond	MFW	**3**			**0**	**1**	**9**	**25**	160	4,580	4,080	2,410	4,100	4,780	6,300	4,860	3,130	stable
Fall Creek Spillway Ponds	MFW					(500)	480	1,420	6,310	5,030	7,770	6,370	5,620	5,850	6,250	3,250	2,740	declining
Buckhead Creek	MFW	**3**	**4**		**2**				3,010	3,570	7,140	4,080	2,830	3,600	3,130	2,500	2,030	stable
East Fork Minnow Creek Pond	MFW		8,770	7,540	7,130	4,540	4,020	4,440	4,780	5,050	3,380	3,270	3,650	3,140	1,850	1,730	1,770	declining
Elijah Bristow Island Pond	MFW												2,780	420	1,700	2,310	1,620	stable
Hospital Pond	MFW		690		780		3,160	3,030	3,020	2,980	2,700	2,130	1,600	4,940	5,040	2,040	1,520	stable
Dexter Reservoir Alcove- PIT1	MFW	780			140	40	920	450	1,130	1,440	800	460	390	70	600	650	1,130	increasing
Haws Pond	MFW														120	440	380	
E.Bristow St. Park- NE Slough	MFW								1,060	1,170	1,090	940	610	1,340	790	210	350	
Barnhard Slough	MFW	**0**								**3**	**7**	**2**	**1**	**2**	**2**	**0**	**4**	
Jasper Park Slough	MFW			**3**		**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	
Rattlesnake Creek	MFW	**7**			**6**				**1**	**2**	**2**	**2**	**2**	**0**	**0**	**5**	**0**	
Oakridge Slough	MFW			**4**	**8**		**2**	**21**	480	140	140	**9**	**1**	**1**	**0**	**0**	**0**	
East Ferrin Pond	MFW			(576)	3,520	5,610	7,160	3,490	60	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Wallace Slough	MFW						**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Dexter East Alcove	MFW	**40**				**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Elijah Bristow Large Gravel Pit	MFW	**3**			**0**			**7**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**0**		
Elijah Bristow Small Gravel Pit	MFW	**31**			**0**			**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
Hospital Impoundment Pond	MFW				**6**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		
Dexter Reservoir	MFW											**1**			**1**			
Middle Fk Willamette Backwater	MFW												**13**	**0**				
West Ferrin Pond	MFW	**3**		(525)	**2**	**0**	**0**	**0**	**0**									
Herman Pond	CFW											(400)	420	350	110	40	180	
Coast Fork Side Channels	CFW											**16**	130	190	**12**	150	80	
Lynx Hollow Side Channels	CFW														**2**	**2**	**2**	
Camas Swale	CFW	**1**	**2**	**0**		**0**			**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	

INTRODUCTION

Oregon chub are endemic to the Willamette River drainage of western Oregon (Markle et al. 1991). This species was formerly distributed throughout the Willamette River Valley (Snyder 1908) in off-channel habitats such as beaver ponds, oxbows, stable 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 resulting from the construction of dams throughout the basin, channelization of the Willamette River and its tributaries, and agricultural practices. 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 reduction of habitat and the restricted distribution of the Oregon chub resulted in a determination of "endangered" status under the federal endangered species act (Markle and Pearsons 1990; Rhew 1993). To evaluate Oregon chub population abundance and distribution, the Oregon Department of Fish and Wildlife conducted surveys in April-September 2007. We conducted similar surveys in 1991-2006 (Scheerer et. al. 1992; 1993; 1994; 1995; 1996; 1998; 1999; 2000; 2001; 2002; 2003; 2004a; 2004b; 2005; 2006: Scheerer and Jones 1997). The survey objectives were to collect information on the status, distribution, and abundance of Oregon chub, the presence of non-native and native species, the characteristics of Oregon chub habitats, the characteristics of potential introduction sites, and to evaluate the success of Oregon chub introductions. In addition, we reviewed and evaluated projects and activities with the potential to impact Oregon chub and their habitats and provided summaries to the U.S. Fish and Wildlife Service.

METHODS

We conducted surveys at 70 locations in the Willamette River drainage (Figures 1 and 2). We sampled off-channel habitats using baited minnow traps, a 1 m x 5 m seine with 64 mm mesh, 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 and maximum depth, water temperature, and total surface area. We photographed each new site 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 all fish species at selected sites. We baited the traps with one third slice of bread and fished them for 3-18 hours. We measured total lengths (TL) of a subsample (N=50) of the Oregon chub we collected in the traps. We marked all fish with a partial caudal fin clip and returned them to the water. When catch rates were low, we repeated this procedure for a second day. On the second day, we marked all unmarked fish. We typically marked fish until approximately 15 percent of the population was marked. We returned all fish to the water. We estimated population abundance using single-sample mark-recapture procedures (Ricker 1975). To calculate population abundance, we used the total number of marked fish, and the catch and recaptures from the last sample date. 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).

We defined a population as a group of chub that occupy a single location. If there is an open connection and the potential for frequent movement of chub between adjacent sloughs or ponds, then we consider adjacent sites to be a single population. We defined abundance trends quantitatively as increasing, declining, stable, or not declining. We calculated a linear regression of abundance over time for each abundant population (>500 fish) for the past five years (2002-2007). When the slope of this regression was negative and significantly different from zero ($P<0.10$), we defined the population as exhibiting a declining trend in abundance. When the slope was positive and significantly different from zero ($P<0.10$), we defined the population as exhibiting an increasing trend in abundance. When the slope was not significantly different from zero ($P>0.10$), we then calculated the coefficient of variation of the abundance estimates for the past five years. When the coefficient of variation was less than 1.0 then we defined population as stable. Otherwise, we defined the population as unstable.

RESULTS

Detailed descriptions of habitat characteristics and the fish species present at each of the 70 sites sampled in 2007 are available on our web site in the 2007 progress report (http://oregonstate.edu/dept/ODFW/NativeFish/OregonChub.htm).

Population Estimates

In 2007, we obtained population estimates for Oregon chub at 29 locations (Table 2). These annual abundance estimates allow us to monitor the status of Oregon chub in relation to recovery goals (U.S. Fish and Wildlife Service 1998) and to determine which populations of Oregon chub are sufficiently large to be used as donor populations for reintroduction efforts.

We estimated the population abundance of Oregon chub at 12 locations in the Middle Fork Willamette River drainage. The Middle Fork Willamette drainage contains the greatest concentration of large Oregon chub populations (>500 fish) in the Willamette Valley. In 2007, there were ten populations in the Middle Fork Willamette drainage that totaled 500 or more adult Oregon chub. Eight of these populations have been stable or increasing in abundance for the past five years (Table 1). The largest populations of Oregon chub in the Middle Fork Willamette drainage were located at Shady Dell Pond, Elijah Bristow Berry Slough, and Dexter Reservoir Alcove “DEX3”. Notable increases in Oregon chub abundance occurred at Shady Dell Pond and Dexter Reservoir Alcove “PIT1”. A notable decrease in Oregon chub abundance occurred at Wicopee Pond. The East Fork Minnow Creek Pond and the Fall Creek Pond populations both had a declining 5-year abundance trends (Table 1).

We estimated the population abundance of Oregon chub at six locations in the Santiam River drainage. In 2007, there were four populations in the Santiam drainage that totaled 500 or more adult Oregon chub. Three populations had a stable or increasing trend in abundance for the past five years (Table 1). The largest Oregon chub population in the Santiam drainage was located at Foster Pullout Pond.

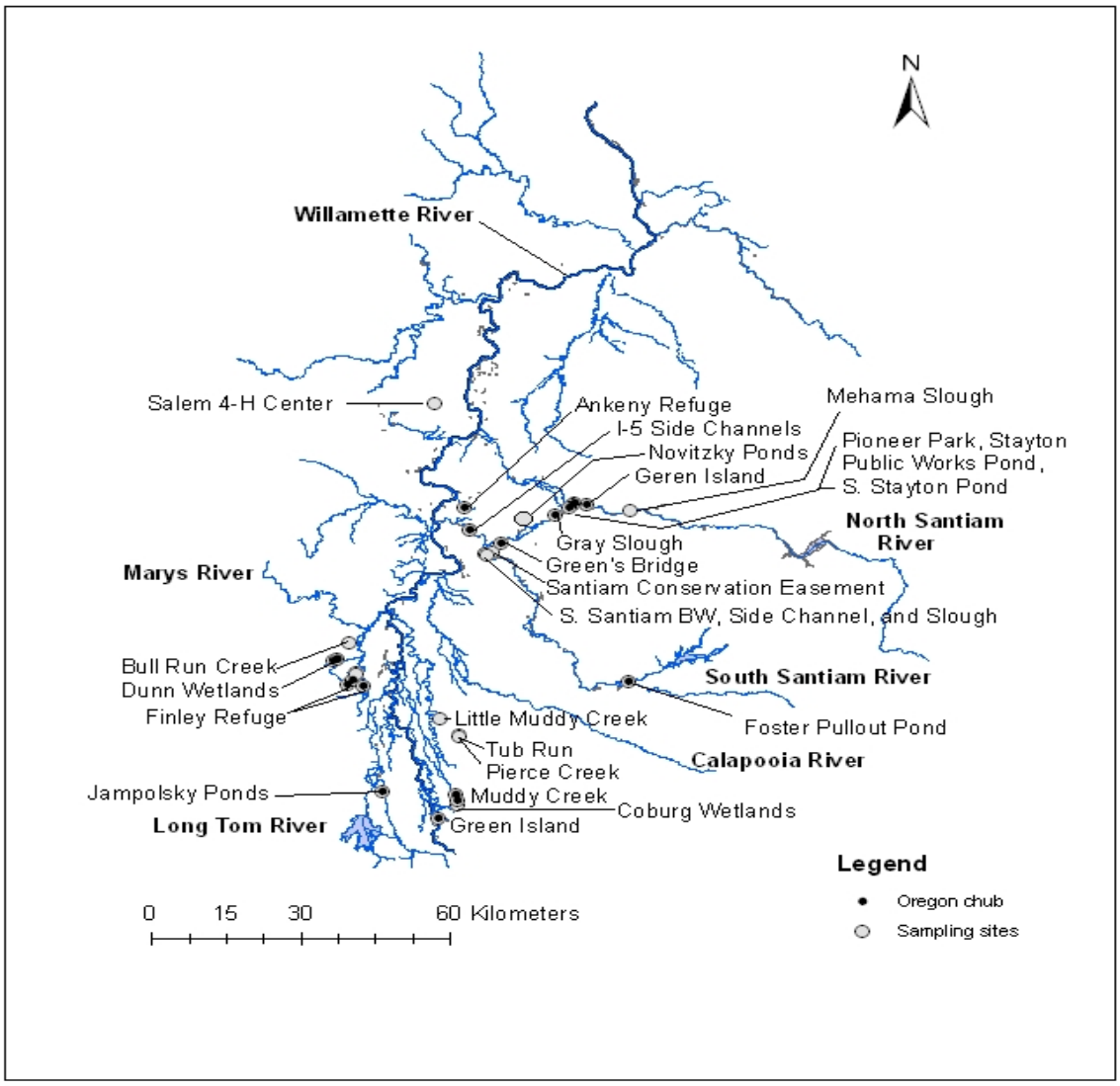

Figure 1. Survey locations for Oregon chub in the Santiam and lower and Mid-Willamette River drainages in 2007. Circles with center dots indicate sites where Oregon chub were collected. Open circles indicate sites where Oregon chub were not collected.

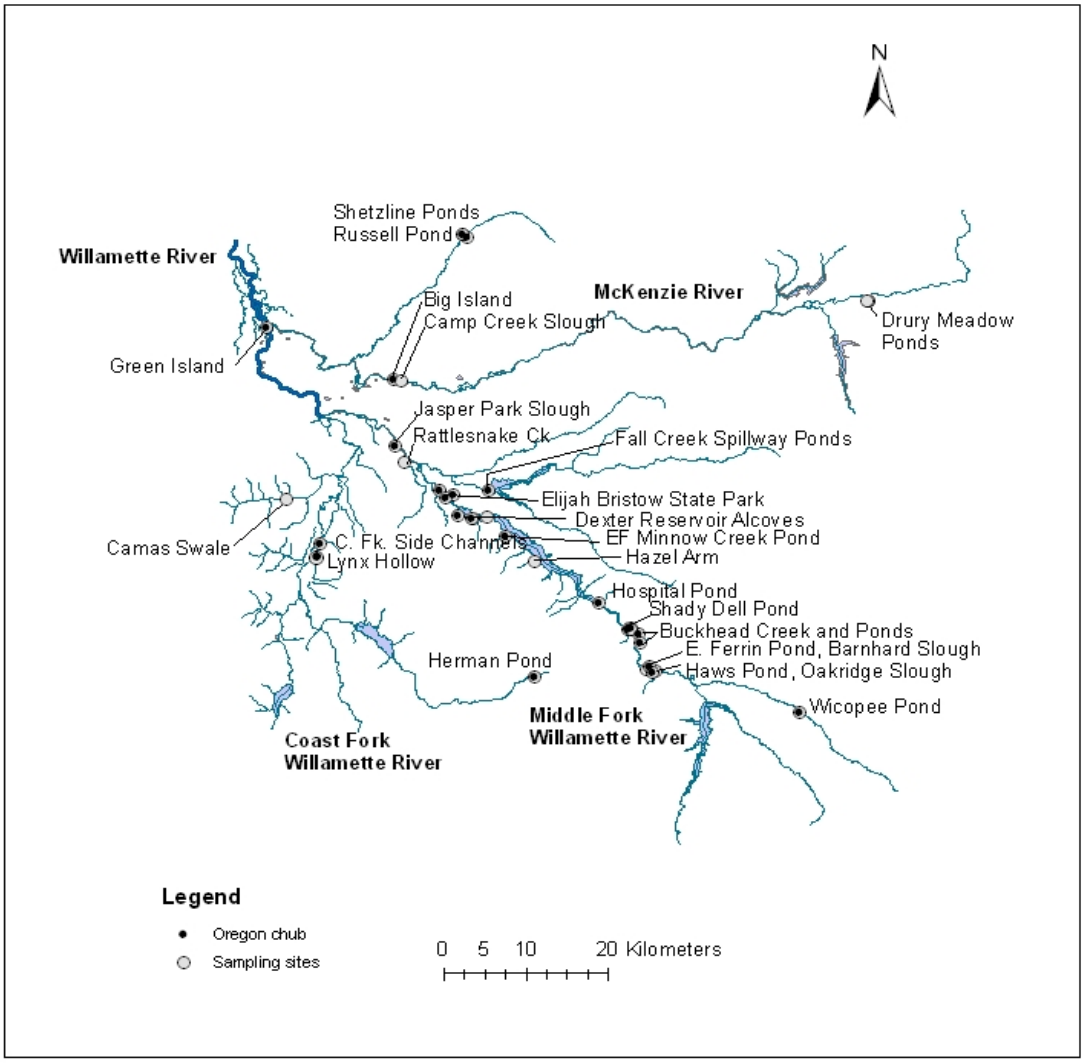

Figure 2. Survey locations for Oregon chub in the upper Willamette River drainage in 2007. Circles with center dots indicate sites where Oregon chub were collected. Open circles indicate sites where Oregon chub were not collected.

Table 2. Estimates of the 2007 population abundance of Oregon chub at locations in the Willamette Valley, Oregon.

Location	Estimate	95% Confidence Limits lower	upper
Santiam River Drainage			
Foster Pullout Pond	980	860	1,120
Gray Slough	560	300	1,000
South Stayton Pond	560	410	770
Geren Island North Channel	510	360	730
Pioneer Park Pond	420	280	630
Stayton Public Works Pond	270	200	350
Mid-Willamette River Drainage			
Dunn Wetland Ponds	34,530	28,920	41,230
Ankeny Willow Marsh	26,420	22,550	30,950
Jampolsky Ponds	4,160	2,710	6,320
Finley Cheadle Pond	1,740	1,510	2,000
Finley Gray Creek Swamp	1,400	1,120	1,750
Finley Display Pond	230	190	280
McKenzie River Drainage			
Russell Pond	1,400	1,000	1,940
Shetzline Pond	210	140	310
Big Island	190	140	270
Coast Fork Willamette River Drainage			
Herman Pond	180	80	350
Coast Fork Side Channels	80	50	140

Table 3 (continued).

Location	Estimate	95% Confidence Limits lower	upper
Middle Fork Willamette River Drainage			
Shady Dell Pond	7,250	6,270	8,390
Elijah Bristow Berry Slough	6,580	5,620	7,710
Dexter RV Alcove	4,020	3,510	4,610
Wicopee Pond	3,130	2,590	3,790
Fall Creek Spillway Ponds	2,740	2,430	3,090
Buckhead Creek	2,030	1,510	2,770
East Fork Minnow Creek Pond	1,770	1,330	2,350
Elijah Bristow Island Pond	1,620	1,130	2,310
Hospital Pond	1,520	1,110	2,080
Dexter Alcove “PIT1”	1,130	960	1,340
Haws Pond	380	140	750
Elijah Bristow State Park Northeast Slough	250	220	550

We estimated the population abundance of Oregon chub at nine locations in the Mid-Willamette River drainage (includes the McKenzie River). In 2007, there were six populations in the Mid-Willamette drainage that totaled 500 or more adult Oregon chub. Four of these populations had stable 5-year trends in abundance (Table 1). The three largest populations in this drainage were chub introduction sites (Ankeny Willow Marsh, Dunn Wetland and Jampolsky Wetlands).

We estimated the Oregon chub population abundance at two sites in the Coast Fork Willamette drainage. The most abundant chub population in the drainage was located in Herman Pond in the Row River subbasin. This population increased from 40 fish in 2006 to 180 fish in 2007. This increase in abundance may be a response to the habitat enhancement project completed in 2005 by the U.S. Forest Service to increase the amount of open water habitat at this site.

DISCUSSION

Currently there are 15 populations totaling 500 or more individuals that have exhibited a stable or increasing trend for the past five years (two populations have exhibited a declining trend for the past five years) (Table 1, Figure 3). Eight of these populations are located in the Middle Fork Willamette recovery area, four populations are located in the Mid-Willamette recovery area, and three populations are located in the Santiam recovery area. In 2007, we met the downlisting criteria. We have made significant progress in increasing both the number of known populations of Oregon chub and the number of large populations (>500 fish) in the Willamette drainage over the past ten years (Table 4). Most populations of chub are currently isolated from other chub populations due to the reduced frequency and magnitude of flood events and the presence of migration barriers such as impassible culverts and permanent, high beaver dams. Genetic exchange between populations is believed to be minimal.

Status of Naturally Occurring Populations

In 2007, there were 11 naturally occurring populations of Oregon chub that totaled 500 or more individuals in the Willamette River basin; eight were located in the Middle Fork Willamette drainage (Table 1). Ten naturally occurring chub populations (>500 fish) have exhibited a stable or increasing trend for the past five years.

Status of Introduced Populations and Habitat Restoration Projects

A major recovery effort for Oregon chub recovery has focused on the introduction of Oregon chub into suitable habitats within their historic range. Several new populations have been established since 1988. In addition, several habitat restoration projects have been completed to increase the quantity of habitat or enhance the suitability of habitat for Oregon chub. In 2007, there were eight introduced populations that totaled 500 or more fish. Four of these populations have exhibited a stable or increasing trend in abundance for the past five years (Tables 1 and 5).

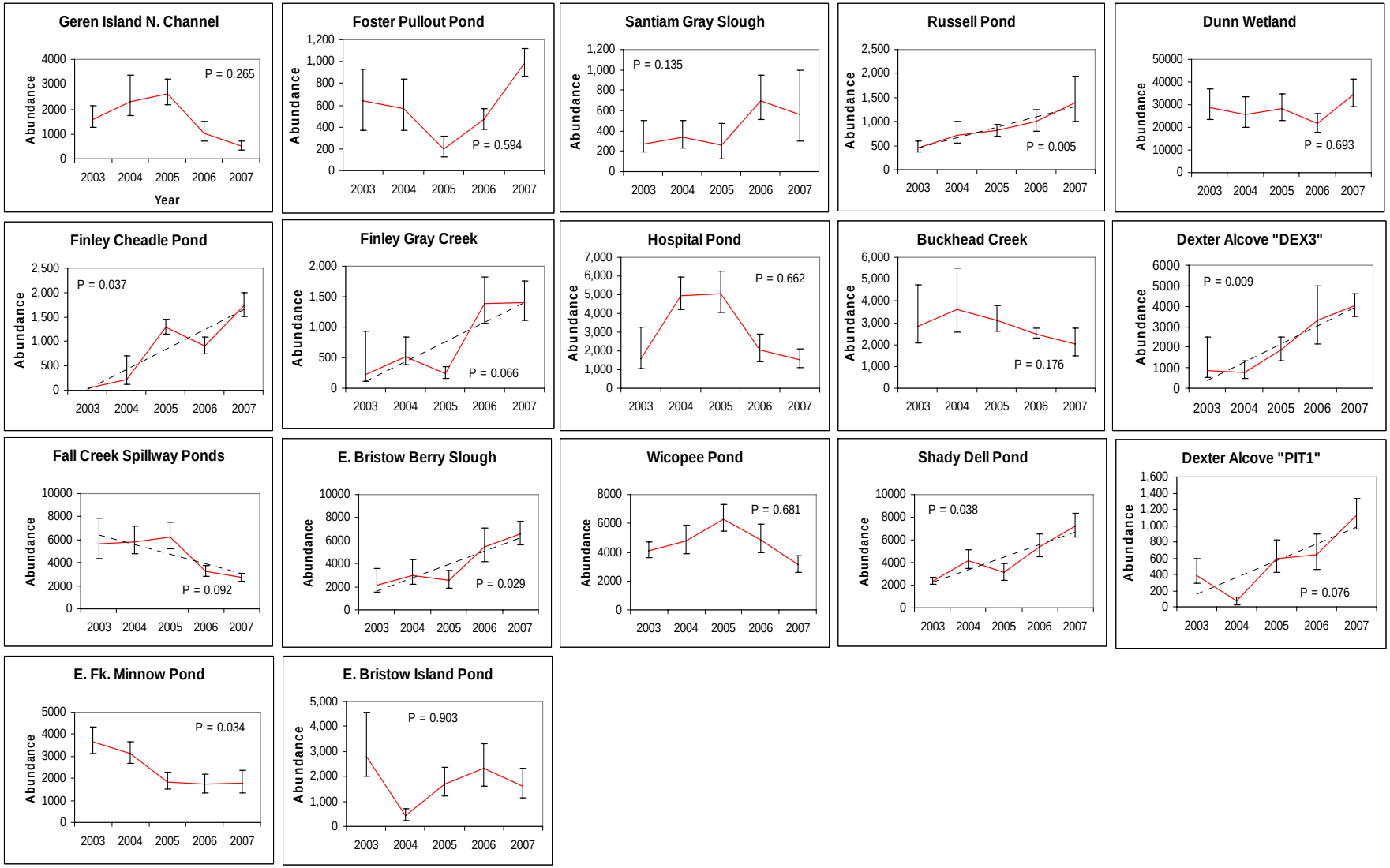

Figure 3. Abundance trends for Oregon chub populations from 2002 through 2007. Horizontal bars represent 95% confidence intervals for each estimate. Fitted regression lines (dotted lines) are shown where significant slopes occur. Plots without dotted lines had stable 5-year abundance trends.

Table 4. Status of Oregon chub recovery efforts, 1997-2007. Five-year abundance trends were not available prior to 1997.

	Santiam		Mid-Willamette[a]		M. Fk. Willamette		C. Fk. Willamette		All subbasins	
Number of populations	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Total	7	8	4	11	14	14	0	3	25	36
Large (>500 adults)	1	4	1	6	7	10	0	0	9	20
Viable (>500 adults, stable or increasing for 5 yrs)[b]	0	3	1	4	2	8	0	0	3	15
Introduced[c]	0	2	1	6	4	2	0	1	5	11
Extirpated (since 1991)	0	1	0	4	3	10	1	1	4	16

[a] *The McKenzie drainage is included in the Mid-Willamette recovery area.*

[b] *Recovery criterion from the Oregon Chub Recovery Plan (USFWS 1998).*

[c] *Failed introductions (N = 3) were not included in the totals for introduced populations.*

Table 5. Status of Oregon chub introductions and habitat restoration projects. Oregon chub abundance was determined from mark-recapture population estimates. Numbers in bold are the number of fish captured when no mark-recapture estimates were obtained. Numbers in parentheses are the number of fish stocked. Basin codes: MS= Mid-Willamette River basin, MFW= Middle Fork Willamette River basin, SANT= Santiam River basin; MCK= McKenzie River basin; and CFW= Coast Fork Willamette River basin. Ownership codes: ACOE= U.S. Army Corps of Engineers, USFS= U.S. Forest Service, ODFW= Oregon Department of Fish and Wildlife, and USFWS= U.S. Fish and Wildlife Service.

Site Name	Basin	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Donor Site	Ownership
Dunn Wetlands	MS				(200)	(373) 460	4,860	14,090	26,240	19,270	28,740	25,810	28,290	21,530	34,530	Geren Island, Elijah Bristow, Shady Dell	private
Ankeny Willow Marsh	MS											(500)	10,110	35,650	26,420	Dunn Wetlands	USFWS
Jampolsky Wetlands	MS											(500)	1,230	8,320	4,160	Dunn Wetlands	private
Wicopee Pond	MFW		**0**	**1**	**9**	**25**	160	4,580	4,080	2,410	4,100	4,780	6,300	4,860	3,130	Dexter Alcove "The Pit" (1988)	USFS
Fall Creek Spillway Ponds	MFW			(500)	480	1,420	6,310	5,030	7,770	6,370	5,620	5,850	6,250	3,250	2,740	East Fk Minnow Pond, Shady Dell Pond	ACOE
Cheadle Pond	MS									(50)	50	220	1,300	900	(53) 1740	Finley Display Pond and Gray Swamp	USFWS
Russell Pond	MCK								(350)	(150) 470	450	720	810	1,000	1,400	Buckhead Creek	private
Foster Pullout Pond	SANT						(85)	(20) 80	(75) 210	(50) 320	(158) 640	112) 570	200	470	980	Geren Island	ACOE
Lower Buckhead Ponds[a]	MFW						**4**	**4**	1,430	1,220	610	1,130	1,220	1,410	940	----------	USFS
South Stayton Pond	SANT													(54)	(67) 560	Stayton Public Works Pond, Pioneer Park	ODFW
Finley Display Pond	MS					(60)	(45) 360	1,750	(49) 670	500	130	70	240	240	(75) 230	Finley Gray Swamp	USFWS
Herman Pond	CFW									(400)	420	350	110	40	180	Fall Creek Spillway Ponds	USFS
East Ferrin Pond	MFW	(576)	3,520	5,610	7,160	3,490	60	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	East Fork Minnow Pond	USFS
Hospital Impound. Pond[a]	MFW		**6**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	----------	ACOE
Menear's Bend	SANT							(15)	**7**	(26) 29	**0**	**0**				Geren Island	ACOE
West Ferrin Pond	MFW	(525)	**2**	**0**	**0**	**0**	**0**									Shady Dell Pond	USFS

[a] These sites are habitat enhancement projects where no Oregon chub were introduced. Oregon chub colonized these sites naturally.

Identification and Evaluation of Potential Introduction Sites

New populations of Oregon chub are established by introductions to suitable habitats within their historical range. A minimum of 400 fish are to be used when establishing new fish populations to avoid genetic bottlenecks. The Oregon Chub Recovery Plan states that a maximum of 10% of a population may be removed for an introduction in any one year. Donor stocks should be in the same subbasin as the introduction site, whenever possible. Potential Oregon chub introduction sites were identified and evaluated using guidelines described by Scheerer and Jacobs (2006).

Following are descriptions of the locations that were evaluated in 2007 as potential introduction sites for Oregon chub.

1. *Beaver Pond*- This pond is located in the Gray Creek drainage on the Finley National Wildlife Refuge in Benton County. One Oregon chub was collected from Beaver Pond in 1990 (personal communication, Dr. Douglas Markle, Oregon State University). In 2003, a habitat enhancement project was completed to reconstruct the dike, replace the water control structure, and deepen the pond to maintain water levels throughout the summer months. In the winter of 2005-06 the dike was damaged by high flow events and the pond drained. Repair work is scheduled for 2008.

2. *Brown Creek Ponds*- These ponds are located on Finley National Wildlife Refuge in Benton County. The ponds were constructed in the lower Brown Creek drainage in 1999. Water control structures were completed in 2000. The vegetation in the ponds has become well established. The refuge has the ability to divert water into either pond. We recommend focusing on the north pond for a future chub introduction.

3. *Budeau Ponds*- This site is located on private property in the Mill Creek drainage. This site requires habitat restoration to be suitable for Oregon chub. Site plans include modification of an existing pond and creation of a new wetland pond. A grant to fund this restoration work was received in 2007 from OWEB. Restoration work will commence in 2008.

4. *Teal Marsh*- This site is located on Ankeny National Wildlife Refuge in Marion County. This is a large constructed wetland pond with site conditions that are very similar to those at Willow Marsh. Water can be pumped from Sidney Ditch to maintain adequate water levels. The pump is the same one that supplies water to Willow Marsh and is screened. The site currently contains nonnative fishes. The U.S. Fish and Wildlife Service plans to draw down (desiccate) the marsh in 2006 to remove nonnative fishes were delayed.

5. *St. Paul Ponds*- This site is located in the Willamette River drainage in Marion County. The site is owned by ODFW. The site was a former ODFW warmwater rearing facility and consists of a series of shallow earthen ponds. This site is high on the list for a chub introduction. Funds were secured from USFWS to restore two ponds and to run the pump to maintain water levels during the summer months.

6. *Magne Pond*- This site is located on private property in the McKenzie River drainage near Cougar Reservoir. Habitat is suitable for Oregon chub. Only cutthroat trout are

present in the pond. A safe harbor agreement with these landowners was completed in 2007. An introduction will be conducted in 2008.

7. *Sprick Pond*- This site is located on private property in the Coast Fork Willamette (Camas Swale) drainage. The pond is a former log pond. The landowners maintain the water levels in the pond by filling with well water during the summer months. No fish were collected in 2005 or 2006. A safe harbor agreement with these landowners was completed in 2007. An introduction will be conducted in 2008.

8. *Novitzki Wetlands*- This site is located on private property in the Santiam River drainage in Marion County. This 59 acre wetland complex was constructed in 2003-2004. Only native fish were collected in 2005 and 2006. The presence of fish is of concern, because the wetland is supposedly isolated from adjacent water bodies (ditches) which contain nonnative fish. We will continue to monitor the fish community and establishment of aquatic vegetation at this site.

9. *K. Finley Pond*- This site is located on private property in the Muddy Creek subbasin of the Marys River drainage in Benton County. The pond is an existing farm pond that is spring fed. Pond reconstruction is scheduled for 2008.

10. *Murphy Pond*- This site is also located on private property in the Muddy Creek subbasin of the Marys River drainage in Benton County. USFWS plans to create a chub pond in an upland area with associated springs in 2008.

Threats to Oregon Chub and Limitations to Their Recovery

Oregon chub continue to be impacted by human activities. During the past decade, Oregon chub populations have been threatened by illegal water withdrawals, unauthorized fill and removal activities, certain timber management activities, highway and pipeline construction, roadside herbicide applications, chemical spills, and routine culvert cleaning operations. However, the proliferation of non-native fish is the largest current threat to Oregon chub populations. Non-native fish have been collected from 42 percent of the 747 unique sites we have sampled in the Willamette Valley since 1991, 54 percent of these sites that contained fish (317 out of 584). After the 1996 floods, non-native fish were first collected from several Oregon chub sites in the Santiam River drainage; the two largest populations subsequently declined sharply in abundance (Scheerer 2002). Illegal planting of largemouth bass at an introduction site in the Middle Fork Willamette River drainage coincided with the collapse of an Oregon chub population that had once totaled over 7,000 fish. 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 Santiam and Mid-Willamette River drainages than in the Middle Fork Willamette and McKenzie River drainage (Scheerer 2002).

Recovery of Oregon chub in the Santiam and Mid-Willamette subbasins is severely limited by the proliferation of non-native fish in off-channel habitats. The resulting paradox is that the 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 and the interchange of individuals among populations,

now poses a threat to Oregon chub by allowing dispersal of nonnative species (Scheerer 2002). Because of the threats posed by nonnative fish, and the loss and fragmentation of suitable Oregon chub habitats, we have few options other than to manage chub populations in isolation. This approach has potentially severe genetic consequences. Genetic analyses that are under way will assist in determining the extent of genetic drift and inbreeding in existing populations and will help guide future management. Managers may be assigned the task of moving fish among certain populations, both natural and introduced, to maintain and enhance the genetic variability necessary for the persistence and recovery of this species.

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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.

Site Name **COAST FORK WILLAMETTE SIDE CHN**
Basin COAST FORK WILLAMETTE RIVER
Subbasin

Map Code **CF11E**
Sampling Date 5/22/2007
Location: Zone 10T 498954 4857992

Surface Area (m2)	1344
Average Depth (m)	0.5
Maximum Depth (m)	0.9
Water Temperature (C)	13
Percent Silt / Organics	40

Types of aquatic vegetation [1]

Submergent	55
Emergent	30
Floating	10
Algae	5
Total	100

Native Fish Species Collected:

Oregon Chub	**83**
Cottids	4
Speckled Dace	269
Redside Shiners	40
Northern Pikeminnows	8
Largescale Suckers	10
Sand Rollers	2
Threespine Sticklebacks	326
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	
Bullheads	
Common Carp	
Bluegills	12
Largemouth Bass	1
Pumpkinseeds	
Crappies	11
Smallmouth Bass	
Banded Killifish	

Other:

NOTE: POPULATION ESTIMATE

Site Name **LYNX HOLLOW**
Basin COAST FORK WILLAMETTE RIVER
Subbasin

Map Code **LYNX1D**
Sampling Date 5/23/2007
Location: Zone 10T 498103 4856295

Surface Area (m2)	4780
Average Depth (m)	0.6
Maximum Depth (m)	0.9
Water Temperature (C)	16
Percent Silt / Organics	70

Types of aquatic vegetation [1]

Submergent	50
Emergent	30
Floating	20
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**2**
Cottids	8
Speckled Dace	26
Redside Shiners	23
Northern Pikeminnows	16
Largescale Suckers	1
Sand Rollers	
Threespine Sticklebacks	6
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

Site Name	**CAMAS SWALE**	Map Code	**CS1J**
Basin	COAST FORK WILLAMETTE RIVER	Sampling Date	5/22/2007
Subbasin	CAMAS SWALE	Location: Zone 10T	494550 4863575

Surface Area (m2)	400
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	13
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	
Emergent	5
Floating	
Algae	
Total	5

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- Sand Rollers
- Threespine Sticklebacks
- Salmonids [2]
- Lamprey
- Chiselmouth

Non-native Fish Species Collected:

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

NOTE:

Other:

Site Name	**HERMAN POND**	Map Code	**LAYNG1H**
Basin	COAST FORK WILLAMETTE RIVER	Sampling Date	5/23/2007
Subbasin	ROW RIVER	Location: Zone 10T	525471 4842030

Surface Area (m2)	3240
Average Depth (m)	0.9
Maximum Depth (m)	1.5
Water Temperature (C)	14
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	40
Emergent	50
Floating	15
Algae	5
Total	100

Native Fish Species Collected:

Oregon Chub	**179**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION EST- 2002 INTROD N=400 FCSP

Site Name	**ANKENY NWR-WILLOW MARSH**	Map Code	**WM1E***
Basin	LOWER WILLAMETTE RIVER	Sampling Date	9/18/2007
Subbasin	ANKENY	Location: Zone 10T	494684 4958441

Surface Area (m2)	25120
Average Depth (m)	0.7
Maximum Depth (m)	2
Water Temperature (C)	19
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	25
Emergent	60
Floating	5
Algae	10
Total	100

Native Fish Species Collected:

- Oregon Chub **26418**
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- 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: REINTRODUCTION SITE- POPULATION ESTIMATE

Site Name **BIG ISLAND**
Basin MCKENZIE RIVER
Subbasin

Map Code **BIG1-6E**
Sampling Date 5/1/2007
Location: Zone 10T 507253 4879014

Surface Area (m2)	8519
Average Depth (m)	0.6
Maximum Depth (m)	1.5
Water Temperature (C)	10.5
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	25
Emergent	37
Floating	10
Algae	
Total	72

Native Fish Species Collected:

Oregon Chub	**192**
Cottids	4
Speckled Dace	27
Redside Shiners	475
Northern Pikeminnows	2
Largescale Suckers	10
Sand Rollers	
Threespine Sticklebacks	11483
Salmonids [2] CH	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

Site Name **CAMP CREEK SLOUGH- HUNSAKER**
Basin MCKENZIE RIVER
Subbasin

Map Code **CAMP1**
Sampling Date 4/26/2007
Location: Zone 10T 508099 4878829

Surface Area (m2)	2000
Average Depth (m)	0.8
Maximum Depth (m)	1.5
Water Temperature (C)	11
Percent Silt / Organics	50

Types of aquatic vegetation [1]

Submergent	30
Emergent	20
Floating	0
Algae	0
Total	50

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	20
Redside Shiners	43
Northern Pikeminnows	4
Largescale Suckers	2
Sand Rollers	
Threespine Sticklebacks	115
Salmonids [2] CH	1
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: MRT (A. REASONER) POSSIBLE ACQUISITION

Site Name	**GREEN ISLAND- MELEVIN CROSSING**	Map Code	**GREEN5**
Basin	MCKENZIE RIVER	Sampling Date	10/12/2007
Subbasin		Location: Zone 10T	491647 4884993

Surface Area (m2)	450
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	13
Percent Silt / Organics	75

Types of aquatic vegetation [1]

Submergent	60
Emergent	20
Floating	10
Algae	0
Total	90

Native Fish Species Collected:

Oregon Chub	**12**
Cottids	3
Speckled Dace	
Redside Shiners	1
Northern Pikeminnows	3
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	720
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	10
Bullheads	
Common Carp	
Bluegills	1
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:

NOTE: MCKENZIE RIVER TRUST PROPERTY & PRIVATE

Site Name	**RUSSELL POND**	Map Code	**RUSS1I**
Basin	MCKENZIE RIVER	Sampling Date	4/25/2007
Subbasin	MOHAWK RIVER	Location: Zone 10T	515585 4897084

Surface Area (m2)	800
Average Depth (m)	2.2
Maximum Depth (m)	2
Water Temperature (C)	10.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	10
Emergent	30
Floating	0
Algae	0
Total	40

Native Fish Species Collected:

Oregon Chub	**1397**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: POP ESTIMATE- REINTRODUCTION SITE

Site Name	**SHETZLINE MIDDLE-NORTH POND**	Map Code	**SHET2-3D**
Basin	MCKENZIE RIVER	Sampling Date	4/25/2007
Subbasin	MOHAWK RIVER	Location: Zone 10T	515031 4897492

Surface Area (m2)	2100
Average Depth (m)	1.5
Maximum Depth (m)	2
Water Temperature (C)	12
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	20
Emergent	30
Floating	5
Algae	0
Total	55

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- 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: HAB. PROJECT 2004, ROTENONE FALL 2006

Site Name	**SHETZLINE SOUTH POND**	Map Code	**SHET1E**
Basin	MCKENZIE RIVER	Sampling Date	4/25/2007
Subbasin	MOHAWK RIVER	Location: Zone 10T	515031 4897452

Surface Area (m2)	700
Average Depth (m)	2
Maximum Depth (m)	2.5
Water Temperature (C)	12
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	50
Emergent	10
Floating	20
Algae	
Total	80

Native Fish Species Collected:

Oregon Chub	**207**
Cottids	9
Speckled Dace	434
Redside Shiners	987
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2] CT	1
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

Site Name	**DRURY MEADOW POND 1- HORSE CK**	Map Code	**DMP1**
Basin	MCKENZIE RIVER	Sampling Date	5/17/2007
Subbasin	WF HORSE CREEK	Location: Zone 10T	564689 4890639

Surface Area (m2)	550
Average Depth (m)	0.7
Maximum Depth (m)	1.1
Water Temperature (C)	17
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	60
Emergent	10
Floating	0
Algae	15
Total	85

Native Fish Species Collected:

Oregon Chub	
Cottids	
Speckled Dace	25
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: MCKENZIE R TRUST PROPERTY

Site Name	**DRURY POND DOWNSTRM- HORSE CK**	Map Code	**DMP3**
Basin	MCKENZIE RIVER	Sampling Date	5/17/2007
Subbasin	WF HORSE CREEK	Location: Zone 10T	564552 4890561

Surface Area (m2)	275
Average Depth (m)	0.1
Maximum Depth (m)	0.1
Water Temperature (C)	18
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	40
Emergent	20
Floating	0
Algae	20
Total	80

Native Fish Species Collected:

Oregon Chub
Cottids
Speckled Dace
Redside Shiners
Northern Pikeminnows
Largescale Suckers
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: MCKENZIE R TRUST PROPERTY- DRIES UP

Site Name	**DRURY WOOD POND 2- HORSE CK**	Map Code	**DMP2**
Basin	MCKENZIE RIVER	Sampling Date	5/17/2007
Subbasin	WF HORSE CREEK	Location: Zone 10T	564778 4890647

Surface Area (m2)	500
Average Depth (m)	0.5
Maximum Depth (m)	0.8
Water Temperature (C)	16.5
Percent Silt / Organics	85

Types of aquatic vegetation [1]

Submergent	20
Emergent	80
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- 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: MCKENZIE R TRUST PROPERTY

Site Name **ACOE DEXTER CONSTRUCTED ALCOVE**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **ACOEDEX1A***
Sampling Date 9/5/2007
Location: Zone 10T 519221 4862054

Surface Area (m2)	420
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	19
Percent Silt / Organics	20

Types of aquatic vegetation [1]

Submergent	35
Emergent	50
Floating	0
Algae	15
Total	100

Native Fish Species Collected:

Oregon Chub	
Cottids	40
Speckled Dace	
Redside Shiners	3
Northern Pikeminnows	
Largescale Suckers	
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: ACOE CONSTRUCTED ALCOVE OFF DEX RESERV

Site Name **ACOE DEXTER CONSTRUCTED ALCOVE**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **ACOEDEX1**
Sampling Date 4/22/2007
Location: Zone 10T 519221 4862054

Surface Area (m2)	420
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	10.5
Percent Silt / Organics	20

Types of aquatic vegetation [1]

Submergent	0
Emergent	25
Floating	0
Algae	0
Total	25

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	0
Redside Shiners	3
Northern Pikeminnows	12
Largescale Suckers	
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: ACOE CONSTRUCTED ALCOVE OFF DEX RESERV

Site Name **BARNHARD SLOUGH**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **BARN1G**
Sampling Date 4/2/2007
Location: Zone 10T 539426 4843773

Surface Area (m2)	1440
Average Depth (m)	0.6
Maximum Depth (m)	2
Water Temperature (C)	8
Percent Silt / Organics	80

Types of aquatic vegetation [1]

Submergent	5
Emergent	80
Floating	5
Algae	5
Total	95

Native Fish Species Collected:

Oregon Chub		**4**
Cottids		11
Speckled Dace		1
Redside Shiners		2
Northern Pikeminnows		
Largescale Suckers		2
Sand Rollers		
Threespine Sticklebacks		
Salmonids [2]	CT=4, CH=1	5
Lamprey		
Chiselmouth		

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name **HAWS POND**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **HAW1B**
Sampling Date 4/13/2007
Location: Zone 10T 539931 4843130

Surface Area (m2)	902
Average Depth (m)	1.2
Maximum Depth (m)	2
Water Temperature (C)	9
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	63
Emergent	12
Floating	5
Algae	
Total	80

Native Fish Species Collected:

Oregon Chub		**382**
Cottids		4
Speckled Dace		85
Redside Shiners		639
Northern Pikeminnows		1
Largescale Suckers		
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: POPULATION ESTIMATE

Site Name **JASPER PARK SLOUGH**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **CAP1L**
Sampling Date 4/23/2007
Location: Zone 10T 507693 4870573

Surface Area (m2)	3600
Average Depth (m)	1
Maximum Depth (m)	1.5
Water Temperature (C)	13
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	100
Emergent	
Floating	
Algae	
Total	80

Native Fish Species Collected:

Oregon Chub	**1**
Cottids	
Speckled Dace	10
Redside Shiners	12
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	2
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: CHOKED WITH PARROTFEATHER

Site Name **OAKRIDGE SLOUGH**
Basin MIDDLE FORK WILLAMETTE RIVER
Subbasin

Map Code **OSTP1L**
Sampling Date 4/4/2007
Location: Zone 10T 540294 4843284

Surface Area (m2)	4800
Average Depth (m)	1
Maximum Depth (m)	1.6
Water Temperature (C)	9
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	15
Emergent	30
Floating	20
Algae	35
Total	100

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	3
Redside Shiners	3
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2] CT	1
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name	**SHADY DELL POND**	Map Code	**SDP1P***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/10/2007
Subbasin		Location: Zone 10T	536757 4848357

Surface Area (m2)	840
Average Depth (m)	0.5
Maximum Depth (m)	1.1
Water Temperature (C)	20
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	30
Emergent	50
Floating	2
Algae	
Total	82

Native Fish Species Collected:

Oregon Chub	**7253**
Cottids	2
Speckled Dace	23
Redside Shiners	137
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE

Site Name	**BUCKHEAD CREEK**	Map Code	**BCK9-12I**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/13/2007
Subbasin	BUCKHEAD CREEK	Location: Zone 10T	537950 4847919

Surface Area (m2)	11290
Average Depth (m)	0.8
Maximum Depth (m)	1.5
Water Temperature (C)	8
Percent Silt / Organics	95

Types of aquatic vegetation [1]

Submergent	70
Emergent	20
Floating	0
Algae	0
Total	90

Native Fish Species Collected:

Oregon Chub		**262**
Cottids		29
Speckled Dace		87
Redside Shiners		697
Northern Pikeminnows		1
Largescale Suckers		18
Sand Rollers		
Threespine Sticklebacks		
Salmonids [2]	RB	1
Lamprey		1
Chiselmouth		

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**LOWER BUCKHEAD ENHANCEMENT PND**	Map Code	**BCK14H**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/5/2007
Subbasin	BUCKHEAD CREEK	Location: Zone 10T	536825 4848623

Surface Area (m2)	540
Average Depth (m)	0.8
Maximum Depth (m)	2
Water Temperature (C)	10.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	35
Emergent	20
Floating	5
Algae	
Total	60

Native Fish Species Collected:

Oregon Chub	**632**
Cottids	
Speckled Dace	49
Redside Shiners	127
Northern Pikeminnows	
Largescale Suckers	5
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: POPULATION ESTIMATE- POND MADE 10-98

Site Name	**MIDDLE BUCKHEAD ENHANCEMENT PD**	Map Code	**BCK15H**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/5/2007
Subbasin	BUCKHEAD CREEK	Location: Zone 10T	537105 4848567

Surface Area (m2)	650
Average Depth (m)	1.3
Maximum Depth (m)	1.8
Water Temperature (C)	10.5
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	40
Emergent	35
Floating	5
Algae	
Total	80

Native Fish Species Collected:

Oregon Chub	**307**
Cottids	1
Speckled Dace	24
Redside Shiners	578
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE- POND MADE 10-98

Site Name	**UPPER BUCKHEAD CREEK BACKWATER**	Map Code	**BCK7L**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/5/2007
Subbasin	BUCKHEAD CREEK	Location: Zone 10T	538218 4846739

Surface Area (m2)	5953
Average Depth (m)	1.2
Maximum Depth (m)	2
Water Temperature (C)	9
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	25
Emergent	25
Floating	20
Algae	
Total	70

Native Fish Species Collected:

Oregon Chub	**825**
Cottids	
Speckled Dace	210
Redside Shiners	2402
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE

Site Name	**UPPER BUCKHEAD ENHANCEMENT PND**	Map Code	**BCK16H**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/5/2007
Subbasin	BUCKHEAD CREEK	Location: Zone 10T	537144 4848481

Surface Area (m2)	300
Average Depth (m)	0.8
Maximum Depth (m)	2.2
Water Temperature (C)	10.5
Percent Silt / Organics	95

Types of aquatic vegetation [1]

Submergent	40
Emergent	35
Floating	
Algae	
Total	75

Native Fish Species Collected:

Oregon Chub
Cottids
Speckled Dace
Redside Shiners
Northern Pikeminnows
Largescale Suckers
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: NO FISH

Site Name	**DEXTER ALCOVE "THE PIT"**	Map Code	**PIT1O***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/7/2007
Subbasin	DEXTER RESERVOIR	Location: Zone 10T	517270 4861753

Surface Area (m2)	300
Average Depth (m)	0.5
Maximum Depth (m)	1
Water Temperature (C)	18
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	30
Emergent	35
Floating	
Algae	35
Total	100

Native Fish Species Collected:	
Oregon Chub	**1132**
Cottids	8
Speckled Dace	
Redside Shiners	3
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE

Site Name	**DEXTER EAST ALCOVE**	Map Code	**DEX1K***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/10/2007
Subbasin	DEXTER RESERVOIR	Location: Zone 10T	517410 4861755

Surface Area (m2)	81
Average Depth (m)	0.3
Maximum Depth (m)	0.6
Water Temperature (C)	17.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	25
Emergent	0
Floating	0
Algae	0
Total	25

Native Fish Species Collected:

Oregon Chub
Cottids
Speckled Dace
Redside Shiners
Northern Pikeminnows
Largescale Suckers
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:

Site Name	**DEXTER RV ALCOVE**	Map Code	**DEX3M***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/12/2007
Subbasin	DEXTER RESERVOIR	Location: Zone 10T	515504 4862061

Surface Area (m2)	1650
Average Depth (m)	0.7
Maximum Depth (m)	1
Water Temperature (C)	22.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	70
Emergent	7
Floating	
Algae	
Total	87

Native Fish Species Collected:

Oregon Chub	**4024**
Cottids	3
Speckled Dace	1
Redside Shiners	7
Northern Pikeminnows	1
Largescale Suckers	
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: POPULATION ESTIMATE

Site Name	**ELIJAH BRISTOW BERRY SLOUGH**	Map Code	**EB1-11N**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/24/2007
Subbasin	ELIJAH BRISTOW	Location: Zone 10T	513244 4865199

Surface Area (m2)	10301
Average Depth (m)	1.2
Maximum Depth (m)	2.5
Water Temperature (C)	11
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	10
Emergent	90
Floating	
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**6582**
Cottids	1
Speckled Dace	659
Redside Shiners	1375
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	72
Salmonids [2] CT	1
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

Site Name	**ELIJAH BRISTOW ISLAND POND**	Map Code	**MF8G,12G***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/26/2007
Subbasin	ELIJAH BRISTOW	Location: Zone 10T	514043 4864334

Surface Area (m2)	10490
Average Depth (m)	1.2
Maximum Depth (m)	2
Water Temperature (C)	15
Percent Silt / Organics	96

Types of aquatic vegetation [1]

Submergent	85
Emergent	7
Floating	0
Algae	0
Total	92

Native Fish Species Collected:

Oregon Chub	**1619**
Cottids	1051
Speckled Dace	4521
Redside Shiners	2
Northern Pikeminnows	2
Largescale Suckers	6
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**ELIJAH BRISTOW NORTH SLOUGH**	Map Code	**EBN1I**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/16/2007
Subbasin	ELIJAH BRISTOW	Location: Zone 10T	514931 4864608

Surface Area (m2)	5800
Average Depth (m)	0.8
Maximum Depth (m)	2
Water Temperature (C)	10
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	40
Emergent	10
Floating	50
Algae	0
Total	100

Native Fish Species Collected:

Oregon Chub	**348**
Cottids	11
Speckled Dace	43
Redside Shiners	3
Northern Pikeminnows	14
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**FALL CREEK SPILLWAY PONDS**	Map Code	**FCSP1-2N***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/7/2007
Subbasin	FALL CREEK	Location: Zone 10T	519285 4865320

Surface Area (m2)	2929
Average Depth (m)	1.1
Maximum Depth (m)	1.8
Water Temperature (C)	23.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	70
Emergent	14
Floating	0
Algae	0
Total	89

Native Fish Species Collected:

Oregon Chub	**2742**
Cottids	
Speckled Dace	1378
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: REINTROD, POP EST, LOWER POND DRY

Site Name	**EAST FERRIN POND**	Map Code	**FP3Q***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/11/2007
Subbasin	FERRIN CREEK	Location: Zone 10T	539093 4843507

Surface Area (m2)	6000
Average Depth (m)	0.5
Maximum Depth (m)	1
Water Temperature (C)	16
Percent Silt / Organics	95

Types of aquatic vegetation [1]

Submergent	25
Emergent	70
Floating	5
Algae	0
Total	100

Native Fish Species Collected:

Oregon Chub
Cottids
Speckled Dace
Redside Shiners
Northern Pikeminnows
Largescale Suckers
Sand Rollers
Threespine Sticklebacks
Salmonids [2]
Lamprey
Chiselmouth

Non-native Fish Species Collected:

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

Other:

NOTE: 1994 REINTROD.- LB ILLEGAL. STOCKED 1997

Site Name	**HAZEL ARM**	Map Code	**HA1C**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	4/16/2007
Subbasin	LOOKOUT POINT	Location: Zone 10T	525162 4856632

Surface Area (m2)	2600
Average Depth (m)	0.5
Maximum Depth (m)	1.1
Water Temperature (C)	8
Percent Silt / Organics	95

Types of aquatic vegetation [1]

Submergent	0
Emergent	75
Floating	
Algae	
Total	75

Native Fish Species Collected:

Oregon Chub		
Cottids		
Speckled Dace		
Redside Shiners		
Northern Pikeminnows		
Largescale Suckers		
Sand Rollers		
Threespine Sticklebacks		
Salmonids [2]	CT	1
Lamprey		
Chiselmouth		

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name	**EAST FORK MINNOW CREEK POND**	Map Code	**MNW1P***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	10/1/2007
Subbasin	MINNOW CREEK	Location: Zone 10T	521411 4859624

Surface Area (m2)	1550
Average Depth (m)	0.5
Maximum Depth (m)	1.2
Water Temperature (C)	17
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	20
Emergent	75
Floating	5
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**1524**
Cottids	
Speckled Dace	750
Redside Shiners	902
Northern Pikeminnows	
Largescale Suckers	
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: ACCELERATED SEDIMENTATION

Site Name	**RATTLESNAKE CREEK**	Map Code	**RTC1I**
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	5/21/2007
Subbasin	RATTLESNAKE CK	Location: Zone 10T	508885 4868530

Surface Area (m2)	720
Average Depth (m)	0.5
Maximum Depth (m)	0.7
Water Temperature (C)	12.5
Percent Silt / Organics	35

Types of aquatic vegetation [1]

Submergent	30
Emergent	42
Floating	20
Algae	
Total	92

Native Fish Species Collected:

Oregon Chub	
Cottids	8
Speckled Dace	1
Redside Shiners	41
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	6
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:

Site Name	**WICOPEE POND**	Map Code	**WCP1Q***
Basin	MIDDLE FORK WILLAMETTE RIVER	Sampling Date	9/13/2007
Subbasin	SALT CREEK	Location: Zone 10T	557935 4838552

Surface Area (m2)	3250
Average Depth (m)	1.2
Maximum Depth (m)	2
Water Temperature (C)	17
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	10
Emergent	90
Floating	
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**3130**
Cottids	
Speckled Dace	4774
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: REINTROD SITE- POP ESTIMATE

Site Name **OREGON 4H CENTER- SALEM**
Basin MID-WILLAMETTE RIVER
Subbasin

Map Code **4H1**
Sampling Date 5/14/2007
Location: Zone 10T 488176 4983051

Surface Area (m2)	2100
Average Depth (m)	1.1
Maximum Depth (m)	1.5
Water Temperature (C)	15
Percent Silt / Organics	55

Types of aquatic vegetation [1]

Submergent	70
Emergent	30
Floating	10
Algae	
Total	100

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- 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: POTENTIAL REINTRODUCTION SITE

Site Name **COBURG EAST WETLAND**
Basin MID-WILLAMETTE RIVER
Subbasin EAST MUDDY CREEK

Map Code **COBURG2***
Sampling Date 10/2/2007
Location: Zone 10T 495535 4888367

Surface Area (m2)	7400
Average Depth (m)	0.3
Maximum Depth (m)	0.5
Water Temperature (C)	15
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	60
Emergent	40
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- Sand Rollers
- Threespine Sticklebacks
- 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: COBURG WW TRT PLAND SURVEYS

Site Name	**COBURG WEST WETLAND**	Map Code	**COBURG1***
Basin	MID-WILLAMETTE RIVER	Sampling Date	10/2/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	495417 4888461

Surface Area (m2)	10527
Average Depth (m)	0.3
Maximum Depth (m)	0.6
Water Temperature (C)	15
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	60
Emergent	40
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

- Oregon Chub
- Cottids
- Speckled Dace
- Redside Shiners
- Northern Pikeminnows
- Largescale Suckers
- 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: COBURG WW TRT PLANT SURVEYS

Site Name	**LITTLE MUDDY CREEK BRIDGE XING**	Map Code	**LMUD2A***
Basin	MID-WILLAMETTE RIVER	Sampling Date	9/17/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	491465 4908441

Surface Area (m2)	490
Average Depth (m)	0.5
Maximum Depth (m)	0.6
Water Temperature (C)	20
Percent Silt / Organics	25

Types of aquatic vegetation [1]

Submergent	70
Emergent	10
Floating	
Algae	5
Total	85

Native Fish Species Collected:

Oregon Chub	
Cottids	
Speckled Dace	11
Redside Shiners	20
Northern Pikeminnows	
Largescale Suckers	
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: ODOT BRIDGE CROSSING

Site Name	**MUDDY CREEK (LINN CO.)**	Map Code	**EMUD6A***
Basin	MID-WILLAMETTE RIVER	Sampling Date	10/2/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	494824 4870794

Surface Area (m2)	72
Average Depth (m)	0.4
Maximum Depth (m)	0.75
Water Temperature (C)	13
Percent Silt / Organics	40

Types of aquatic vegetation [1]

Submergent	30
Emergent	70
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

Oregon Chub	**2**
Cottids	1
Speckled Dace	22
Redside Shiners	24
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	2
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: COBURG WW TRT PLANT SURVEYS

Site Name	**MUDDY CREEK @ I-5**	Map Code	**EMUD8171A***
Basin	MID-WILLAMETTE RIVER	Sampling Date	10/2/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	495575 4889050

Surface Area (m2)	600
Average Depth (m)	0.55
Maximum Depth (m)	0.75
Water Temperature (C)	12
Percent Silt / Organics	30

Types of aquatic vegetation [1]

Submergent	0
Emergent	10
Floating	0
Algae	0
Total	10

Native Fish Species Collected:

Oregon Chub	**1**
Cottids	
Speckled Dace	
Redside Shiners	2
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	1
Threespine Sticklebacks	4
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: COBURG WW TRT PLANT SURVEYS

Site Name	**PIERCE CREEK**	Map Code	**PIERCE1**
Basin	MID-WILLAMETTE RIVER	Sampling Date	4/19/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	495314 4904582

Surface Area (m2)	750
Average Depth (m)	0.6
Maximum Depth (m)	0.9
Water Temperature (C)	7
Percent Silt / Organics	50

Types of aquatic vegetation [1]

Submergent	0
Emergent	65
Floating	0
Algae	0
Total	65

Native Fish Species Collected:	
Oregon Chub	
Cottids	
Speckled Dace	
Redside Shiners	16
Northern Pikeminnows	
Largescale Suckers	
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: ODOT BRIDGE

Site Name	**TUB RUN CREEK**	Map Code	**TUB1**
Basin	MID-WILLAMETTE RIVER	Sampling Date	4/19/2007
Subbasin	EAST MUDDY CREEK	Location: Zone 10T	495345 4904781

Surface Area (m2)	725
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	7
Percent Silt / Organics	70

Types of aquatic vegetation [1]

Submergent	0
Emergent	55
Floating	0
Algae	0
Total	55

Native Fish Species Collected:	
Oregon Chub	
Cottids	2
Speckled Dace	2
Redside Shiners	4
Northern Pikeminnows	
Largescale Suckers	
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: ODOT BRIDGE

Site Name	**JAMPOLSKY PONDS**	Map Code	**JAMP1-2F***
Basin	MID-WILLAMETTE RIVER	Sampling Date	9/20/2007
Subbasin	LONG TOM RIVER	Location: Zone 10T	480282 4890921

Surface Area (m2)	3045
Average Depth (m)	1
Maximum Depth (m)	2.3
Water Temperature (C)	18
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	25
Emergent	
Floating	
Algae	15
Total	40

Native Fish Species Collected:

Oregon Chub	**4159**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: REINTROD SITE- POP ESTIMATE

Site Name	**BULL RUN CREEK**	Map Code	**BULLR2-3C**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/9/2007
Subbasin	MARYS RIVER	Location: Zone 10T	473047 4926122

Surface Area (m2)	1837
Average Depth (m)	0.3
Maximum Depth (m)	0.65
Water Temperature (C)	14
Percent Silt / Organics	85

Types of aquatic vegetation [1]

Submergent	10
Emergent	90
Floating	
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	
Cottids	35
Speckled Dace	2
Redside Shiners	5
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	1
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: T. MURPHY/ K. FINLEY PROPERTIES

Site Name	**DUNN WETLAND DUNN2**	Map Code	**DUNN2N***
Basin	MID-WILLAMETTE RIVER	Sampling Date	9/26/2007
Subbasin	MARYS RIVER	Location: Zone 10T	470249 4921916

Surface Area (m2)	2240
Average Depth (m)	0.7
Maximum Depth (m)	1
Water Temperature (C)	18
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	60
Emergent	40
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

Oregon Chub	**12010**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: 1997 REINTRODUCTION- POP. ESTIMATE

Site Name	**DUNN WETLAND DUNN6**	Map Code	**DUNN6I***
Basin	MID-WILLAMETTE RIVER	Sampling Date	9/26/2007
Subbasin	MARYS RIVER	Location: Zone 10T	470249 4921836

Surface Area (m2)	3500
Average Depth (m)	0.7
Maximum Depth (m)	1
Water Temperature (C)	18
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	20
Emergent	40
Floating	0
Algae	0
Total	60

Native Fish Species Collected:

Oregon Chub	**17696**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: 1998 REINTRODUCTION- POP. ESTIMATE

Site Name	**DUNN WETLAND DUNN7**	Map Code	**DUNN7G***
Basin	MID-WILLAMETTE RIVER	Sampling Date	9/26/2007
Subbasin	MARYS RIVER	Location: Zone 10T	470299 4921916

Surface Area (m2)	880
Average Depth (m)	0.3
Maximum Depth (m)	0.4
Water Temperature (C)	18
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	15
Emergent	25
Floating	
Algae	
Total	40

Native Fish Species Collected:

Oregon Chub	**4364**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: REINTROD. SITE- POP. ESTIMATE

Site Name	**FINLEY NWR BROWN CK NORTH POND**	Map Code	**FIN25C**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/8/2007
Subbasin	MARYS RIVER	Location: Zone 10T	474275 4918850

Surface Area (m2)	2000
Average Depth (m)	0.5
Maximum Depth (m)	0.8
Water Temperature (C)	21.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	10
Emergent	20
Floating	10
Algae	10
Total	40

Native Fish Species Collected:

Oregon Chub	
Cottids	3
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	252
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: POTENTIAL REINTRODUCTION SITE

Site Name	**FINLEY NWR BROWN CK SOUTH POND**	Map Code	**FIN26C**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/8/2007
Subbasin	MARYS RIVER	Location: Zone 10T	474300 4918600

Surface Area (m2)	7200
Average Depth (m)	1
Maximum Depth (m)	1.8
Water Temperature (C)	21
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	35
Emergent	0
Floating	0
Algae	5
Total	40

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	229
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: POTENTIAL REINTRODUCTION SITE

Site Name	**FINLEY NWR CHEADLE POND**	Map Code	**FIN27F**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/10/2007
Subbasin	MARYS RIVER	Location: Zone 10T	475856 4915761

Surface Area (m2)	8142
Average Depth (m)	1.5
Maximum Depth (m)	3.3
Water Temperature (C)	18.5
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	15
Emergent	71
Floating	
Algae	
Total	86

Native Fish Species Collected:

Oregon Chub	**1736**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: 50 FISH INTRODUCED IN 2002

Site Name	**FINLEY NWR DISPLAY POND**	Map Code	**FIN16O**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/10/2007
Subbasin	MARYS RIVER	Location: Zone 10T	473386 4917139

Surface Area (m2)	6400
Average Depth (m)	1.5
Maximum Depth (m)	2.5
Water Temperature (C)	19
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	30
Emergent	45
Floating	
Algae	
Total	75

Native Fish Species Collected:

Oregon Chub	**227**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE- REINTROD. SITE

Site Name	**FINLEY NWR- GRAY CREEK SWAMP**	Map Code	**FIN4N**
Basin	MID-WILLAMETTE RIVER	Sampling Date	5/9/2007
Subbasin	MARYS RIVER	Location: Zone 10T	472649 4915908

Surface Area (m2)	22872
Average Depth (m)	1
Maximum Depth (m)	2.2
Water Temperature (C)	12
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	35
Emergent	65
Floating	
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**1399**
Cottids	15
Speckled Dace	2134
Redside Shiners	3210
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	3060
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name **SANTIAM I-5 BACKWATER I5BW1**
Basin SANTIAM RIVER
Subbasin

Map Code **I5BW1J**
Sampling Date 4/30/2007
Location: Zone 10T 495928 4953377

Surface Area (m2)	930
Average Depth (m)	1.5
Maximum Depth (m)	2.5
Water Temperature (C)	12
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	70
Emergent	10
Floating	0
Algae	0
Total	80

Native Fish Species Collected:

Oregon Chub	
Cottids	
Speckled Dace	
Redside Shiners	15
Northern Pikeminnows	15
Largescale Suckers	3
Sand Rollers	
Threespine Sticklebacks	12
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

Western Mosquitofish	21
Bullheads	
Common Carp	
Bluegills	
Largemouth Bass	
Pumpkinseeds	1
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:

NOTE:

Site Name **SANTIAM I-5 SIDE CHANNEL POND**
Basin SANTIAM RIVER
Subbasin

Map Code **I5BW2I**
Sampling Date 4/30/2007
Location: Zone 10T 496051 4953491

Surface Area (m2)	6000
Average Depth (m)	1.5
Maximum Depth (m)	3
Water Temperature (C)	12
Percent Silt / Organics	80

Types of aquatic vegetation [1]

Submergent	40
Emergent	25
Floating	
Algae	
Total	65

Native Fish Species Collected:

Oregon Chub	**21**
Cottids	2
Speckled Dace	1
Redside Shiners	66
Northern Pikeminnows	67
Largescale Suckers	14
Sand Rollers	1
Threespine Sticklebacks	504
Salmonids [2] CT	5
Lamprey	
Chiselmouth	1

Non-native Fish Species Collected:

Western Mosquitofish	111
Bullheads	1
Common Carp	
Bluegills	152
Largemouth Bass	11
Pumpkinseeds	17
Crappies	
Smallmouth Bass	
Banded Killifish	

Other: YP = 1

NOTE: POPULATION ESTIMATE

Site Name	**FOSTER PULLOUT POND**	Map Code	**FOS2M**
Basin	SANTIAM RIVER	Sampling Date	5/2/2007
Subbasin	MIDDLE SANTIAM	Location: Zone 10T	529165 4918350

Surface Area (m2)	2405
Average Depth (m)	1.2
Maximum Depth (m)	2
Water Temperature (C)	13
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	80
Emergent	20
Floating	
Algae	
Total	100

Native Fish Species Collected:

Oregon Chub	**981**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: POPULATION ESTIMATE- REINTRODUCTION

Site Name	**GEREN ISLAND NORTH CHANNEL**	Map Code	**GER4L**
Basin	SANTIAM RIVER	Sampling Date	5/9/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	519371 4959900

Surface Area (m2)	4469
Average Depth (m)	1.8
Maximum Depth (m)	2.2
Water Temperature (C)	7
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	20
Emergent	45
Floating	
Algae	
Total	65

Native Fish Species Collected:

Oregon Chub	**512**
Cottids	20
Speckled Dace	26
Redside Shiners	6
Northern Pikeminnows	43
Largescale Suckers	19
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**GEREN ISLAND NORTH POND**	Map Code	**GER6L**
Basin	SANTIAM RIVER	Sampling Date	4/18/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	519371 4959954

Surface Area (m2)	20625
Average Depth (m)	1
Maximum Depth (m)	2.5
Water Temperature (C)	7
Percent Silt / Organics	95

Types of aquatic vegetation [1]

Submergent	50
Emergent	10
Floating	
Algae	
Total	60

Native Fish Species Collected:

Oregon Chub	
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	2
Sand Rollers	
Threespine Sticklebacks	
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name	**GREEN'S BRIDGE BACKWATER**	Map Code	**NS14M**
Basin	SANTIAM RIVER	Sampling Date	4/19/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	502354 4950367

Surface Area (m2)	1970
Average Depth (m)	0.4
Maximum Depth (m)	1.2
Water Temperature (C)	10
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	65
Emergent	30
Floating	
Algae	
Total	95

Native Fish Species Collected:

Oregon Chub	**1**
Cottids	19
Speckled Dace	24
Redside Shiners	13
Northern Pikeminnows	
Largescale Suckers	1
Sand Rollers	
Threespine Sticklebacks	68
Salmonids [2] CT	1
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name **MEHAMA SLOUGH**
Basin SANTIAM RIVER
Subbasin NORTH SANTIAM

Map Code **MEHAMA1**
Sampling Date 10/2/2007
Location: Zone 10T 528256 4958866

Surface Area (m2)	1050
Average Depth (m)	0.5
Maximum Depth (m)	0.9
Water Temperature (C)	12
Percent Silt / Organics	65

Types of aquatic vegetation [1]

Submergent	35
Emergent	30
Floating	0
Algae	35
Total	100

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	16
Redside Shiners	41
Northern Pikeminnows	
Largescale Suckers	
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: TRAIL NEAR FISHERMAN'S ACCESS

Site Name **PIONEER PARK BACKWATER**
Basin SANTIAM RIVER
Subbasin NORTH SANTIAM

Map Code **PION3K**
Sampling Date 5/15/2007
Location: Zone 10T 516950 4960250

Surface Area (m2)	2520
Average Depth (m)	0.7
Maximum Depth (m)	1.2
Water Temperature (C)	9
Percent Silt / Organics	55

Types of aquatic vegetation [1]

Submergent	15
Emergent	50
Floating	0
Algae	35
Total	100

Native Fish Species Collected:

Oregon Chub	**418**
Cottids	1092
Speckled Dace	632
Redside Shiners	46
Northern Pikeminnows	
Largescale Suckers	
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: GF

NOTE: SWCD RECONSTRUCTED POND

Site Name	**SANTIAM CONS EASEMENT SCE7**	Map Code	**SCE7L**
Basin	SANTIAM RIVER	Sampling Date	5/16/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	500581 4948239

Surface Area (m2)	2000
Average Depth (m)	0.5
Maximum Depth (m)	1
Water Temperature (C)	14
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	78
Emergent	5
Floating	2
Algae	10
Total	95

Native Fish Species Collected:

Oregon Chub	
Cottids	2
Speckled Dace	
Redside Shiners	2
Northern Pikeminnows	12
Largescale Suckers	1
Sand Rollers	
Threespine Sticklebacks	96
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE:

Site Name	**SOUTH STAYTON POND**	Map Code	**STAY1B**
Basin	SANTIAM RIVER	Sampling Date	5/16/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	515525 4958950

Surface Area (m2)	1200
Average Depth (m)	0.9
Maximum Depth (m)	1.6
Water Temperature (C)	19
Percent Silt / Organics	40

Types of aquatic vegetation [1]

Submergent	60
Emergent	20
Floating	
Algae	5
Total	85

Native Fish Species Collected:

Oregon Chub	**562**
Cottids	
Speckled Dace	
Redside Shiners	
Northern Pikeminnows	
Largescale Suckers	
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: 2006 INTRODCUTION SITE

Site Name	**STAYTON PUBLIC WORKS POND**	Map Code	**SPWP1I**
Basin	SANTIAM RIVER	Sampling Date	5/15/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	516689 4959858

Surface Area (m2)	1280
Average Depth (m)	1
Maximum Depth (m)	2
Water Temperature (C)	10
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	97
Emergent	3
Floating	0
Algae	0
Total	100

Native Fish Species Collected:

Oregon Chub	**266**
Cottids	53
Speckled Dace	3
Redside Shiners	44
Northern Pikeminnows	12
Largescale Suckers	1
Sand Rollers	
Threespine Sticklebacks	1142
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**WARREN GRAY SLOUGH**	Map Code	**GRAY1L**
Basin	SANTIAM RIVER	Sampling Date	5/3/2007
Subbasin	NORTH SANTIAM	Location: Zone 10T	513224 4957493

Surface Area (m2)	8445
Average Depth (m)	1.2
Maximum Depth (m)	2.5
Water Temperature (C)	16
Percent Silt / Organics	100

Types of aquatic vegetation [1]

Submergent	33
Emergent	22
Floating	
Algae	
Total	55

Native Fish Species Collected:

Oregon Chub	**560**
Cottids	36
Speckled Dace	16
Redside Shiners	3
Northern Pikeminnows	
Largescale Suckers	11
Sand Rollers	
Threespine Sticklebacks	15081
Salmonids [2]	
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: POPULATION ESTIMATE

Site Name	**S. SANTIAM RIVER SIDE CHANNEL**	Map Code	**SS6A**
Basin	SANTIAM RIVER	Sampling Date	5/24/2007
Subbasin	SOUTH SANTIAM	Location: Zone 10T	499607 4947588

Surface Area (m2)	360
Average Depth (m)	0.4
Maximum Depth (m)	0.7
Water Temperature (C)	11.5
Percent Silt / Organics	60

Types of aquatic vegetation [1]

Submergent	5
Emergent	10
Floating	0
Algae	5
Total	20

Native Fish Species Collected:

Oregon Chub	
Cottids	15
Speckled Dace	1
Redside Shiners	21
Northern Pikeminnows	26
Largescale Suckers	1
Sand Rollers	
Threespine Sticklebacks	61
Salmonids [2] CH	4
Lamprey	
Chiselmouth	

Non-native Fish Species Collected:

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

Other:

NOTE: CITY OF ALBANY PROPERTY

Site Name	**S. SANTIAM RIVER SIDE CHNL PND**	Map Code	**ALB2**
Basin	SANTIAM RIVER	Sampling Date	5/24/2007
Subbasin	SOUTH SANTIAM	Location: Zone 10T	499516 4947793

Surface Area (m2)	650
Average Depth (m)	0.5
Maximum Depth (m)	0.7
Water Temperature (C)	11.5
Percent Silt / Organics	90

Types of aquatic vegetation [1]

Submergent	5
Emergent	10
Floating	0
Algae	5
Total	20

Native Fish Species Collected:

Oregon Chub	
Cottids	4
Speckled Dace	5
Redside Shiners	200
Northern Pikeminnows	102
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	5
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: CITY OF ALBANY PROPERTY

Site Name	**S. SANTIAM RIVER SLOUGH**	Map Code	**ALB3**
Basin	SANTIAM RIVER	Sampling Date	5/24/2007
Subbasin	SOUTH SANTIAM	Location: Zone 10T	499480 4947797

Surface Area (m2)	600
Average Depth (m)	0.5
Maximum Depth (m)	0.7
Water Temperature (C)	14.5
Percent Silt / Organics	75

Native Fish Species Collected:

Oregon Chub	
Cottids	1
Speckled Dace	5
Redside Shiners	16
Northern Pikeminnows	
Largescale Suckers	
Sand Rollers	
Threespine Sticklebacks	77
Salmonids [2]	
Lamprey	
Chiselmouth	

Types of aquatic vegetation [1]

Submergent	5
Emergent	25
Floating	0
Algae	0
Total	30

Non-native Fish Species Collected:

Western Mosquitofish	45
Bullheads	
Common Carp	
Bluegills	21
Largemouth Bass	
Pumpkinseeds	
Crappies	
Smallmouth Bass	
Banded Killifish	

Other:

NOTE: CITY OF ALBANY PROPERTY

3406 Cherry Ave. NE
Salem, Oregon 97303