



R & E Grant Application 13 Biennium

Project #:
13-058

Cascade Lakes Creel Survey

Project Information

R&E Project Request: \$16,400.00
Match Funding: \$9,798.00
Total Project: \$26,198.00
Start Date: 4/26/2014
End Date: 9/30/2014
Project Email: erik.r.moberly@state.or.us
Project Biennium: 13 Biennium
Organization: ODFW - Deschutes Watershed District Office

Applicant Information

Name: Erik Moberly
Address: 3150 Main Street
Springfield, OR 97478
Telephone: 541-726-3515 x28
Email: erik.r.moberly@state.or.us

Past Recommended or Completed Projects

Number	Name	Status
09-291	Gold Lake Brook Trout Removal	Completed

Project Summary

This project is part of ODFW's 25 Year Angling Plan.

Activity Type: Monitoring

Summary: The Cascade Lakes provide abundant recreational opportunities and have seen an increase in use over the past 20 years resulting from increased tourism and population. Since 2000, Deschutes county has seen a 45% increase in population growth. In order for ODFW to provide diverse and productive recreational fisheries in the Cascade Lakes, district staff have been experimenting with a range of trout stocks, release sizes, and timing of releases in selected waterbodies. To evaluate the contribution of different hatchery stocks and release strategies to the fishery, district staff propose to implement a creel survey at selected waterbodies to determine if management efforts are meeting the specific goals and objectives outlined in the Upper Deschutes River Subbasin Fish Management Plan.

Objectives: The proposed project objectives include determining which stocks and release strategies of hatchery trout: 1) Provide the greatest return to anglers; 2) Do not

compete and interbreed with native redband on spawning grounds; 3) Grows most quickly to trophy size; and 4) Competes effectively against non-native fishes. Additional project objectives include determining: 1) If recent management efforts have increased angling success and expectations; 2) Catch rates of native redband trout versus hatchery rainbow trout; and 3) Catch rates of illegally introduced fish species. Overall, the goals and objectives of the Cascade Lakes creel survey are to determine if current fish management actions are meeting management objectives by creating a diverse, stable, and productive recreational fishery that is consistent with the conservation needs of native redband trout. The proposed creel survey will also provide district staff with information regarding angler preferences and satisfaction of the current fishery in the selected waterbodies.

Fishery Benefits:

The waterbodies included in this proposal include (in priority): East, Paulina, Hosmer, Crane Prairie Reservoir, Big Lava, Elk, Big Cultus, and Little Cultus lakes. Collectively, coldwater gamefish species targeted in these waterbodies include rainbow trout, brook trout, cutthroat trout, kokanee, Atlantic salmon, and lake trout. In addition, non-native warmwater gamefish species including largemouth bass, black crappie, bluegill, and brown bullhead are found in Crane Prairie. District sampling and creel data, along with angler reports, have shown fluctuations in angler catch and harvest rates over the last decade which has created frustration and dissatisfaction from anglers, resort owners, and fishing guides. Evaluating current fish management actions through a creel survey and annual monitoring will provide district staff essential information to develop quality recreational angling opportunities and guide future management decisions. Management actions implemented to benefit recreational fishing could include stocking waterbodies with those fish stocks that provide anglers with acceptable catch and harvest rates. In addition, district staff are experimenting with the sizes and timing of fish releases. The proposed creel survey will evaluate specific fish stocks and release strategies and how they influence catch and harvest rates.

Watershed Benefits:

The proposed creel survey serves to assist district staff in creating productive consumptive and nonconsumptive recreational fisheries that do not compromise reproductive success or genetics of native redband trout in the watershed as directed by ODFW's Native Fish Conservation Policy.

Current Situation:

Fish species and numbers of fish released on an annual basis into the waterbodies identified in this proposal have changed over time resulting from fish management actions aimed to enhance the performance of hatchery stocks, achieve increased growth rates, and reduce overall production costs. (Table 1). District staff and partners, with funding assistance from the R&E board, have implemented ongoing chub removal efforts in East, Paulina, and Big Lava Lakes since 2010 as part of the district's 5-year management plan for these waterbodies. In addition, the experimental stocking of an all female Blackwater rainbow trout, a fast growing aggressive stock from British Columbia, has been implemented in East Lake as part of current fish management. Annual monitoring and anecdotal reports from anglers have provided limited information on the success of current hatchery programs in the Cascade Lakes. Our proposal is to conduct a creel survey in 2014 to measure how the recent chub removal and experimental hatchery releases have

impacted the recreational fishery along with the performance of specific stocks, release timing, and size of releases. The focus of the proposed creel survey in 2014 will be on East and Paulina lakes but six other waterbodies will also be targeted for creel surveys. Depending on the success of the 2014 creel survey, district staff may request additional funding to collect further creel information on Crane Prairie reservoir in 2015 and East and Paulina lakes in 2016.

Alternatives: District staff could continue to make fish management decisions based on limited information collected from periodic annual monitoring and voluntary angler reports.

Designer: ODFW district staff shall design the creel survey following American Fisheries Society's and other established guidelines with the assistance of Josh McCormick (ODFW Fisheries Biometrician)

Methods: The proposed creel survey is scheduled to begin on April 26th and be conducted on selected waterbodies by a qualified EBA for 23 weeks. If necessary, district staff may assist with creel surveys on a limited basis during anticipated busy times of the season. At least 30 sample days (sample size) shall be conducted at each selected waterbody within the 23 week period with no more than 3 waterbodies surveyed within a one day period. The proposed sample size is being targeted to reduce confidence intervals, or the level of confidence in the parameters being collected, and is based on data from previous creel surveys and direction of the ODFW biometrician. Data collected from the proposed creel survey shall be used for district fish management actions and by the internal ODFW Inland Trout Working Group on a statewide fish management level; specifically stock performance and release strategies. The proposed creel survey shall establish the framework for future creel surveys in the district and potentially state wide.

Inspector: ODFW district staff shall maintain constant oversight of the creel surveyor, review and analyze the data being collected on a routine basis, and report the findings to ODFW Fish Division and the R&E Board in a timely manner.

Funding Elements: The proposed creel survey is expected to begin on April 26th, 2014 and conclude on September 30, 2014. R&E funding is being requested to hire and fund one EBA from the timeframe mentioned above at 40 hours/week. The EBA will be funded to perform a statistically valid creel surveys, pressure counts, and data management. R&E funding will be used for the lease and operation of a vehicle. The duty station for the EBA will be in Bend so a vehicle will be necessary to commute from Bend to designated Cascade Lakes.

Partners: No

Existing Plan: Yes

The Upper Deschutes River Basin Plan directs ODFW to provide diverse angling opportunities for a consumptive and nonconsumptive fishery on naturally and hatchery produced fish while maintaining genetic diversity, adaptiveness, and abundance of native redband trout. Some waterbodies in this proposal also have management directives with goals of providing a "trophy" or "featured" fishery.

ODFW district staff are currently testing a variety of fish stocks and release strategies to achieve these management objectives.

Affected Contacted: Yes

Affected Supportive: Yes

Affected Comments: The general angling public, owners of resorts located at these waterbodies, and local and regional guide services have voiced their frustrations about the current management of selected fisheries in the Cascade Lakes. Before and during the proposed creel survey in 2014, ODFW staff will disseminate our goals and objectives to local angling groups and through various other media sources to highlight the proposed project and promote angler support for obtaining the necessary information from the proposed creel survey.

Project Schedule/Participants/Funding

Activity	Date	Participants
Hire an Experimental Biological Aid (EBA)	3/31/2014	District Staff
Final Project Design	3/31/2014	ODFW Staff
Begin Creel	4/26/2014	EBA and District Staff
End Creel	9/30/2014	EBA and District Staff
Finish Creel Analysis	12/31/2014	ODFW Staff

Affected Species: Atlantic Salmon
Brook Trout
Cutthroat Trout
Kokanee
Lake Trout
Rainbow Trout
Warmwater

Project Permits

This project has no permits.

Project Monitoring

This project has no monitoring.

Project Maintenance

This project has no maintenance plans.

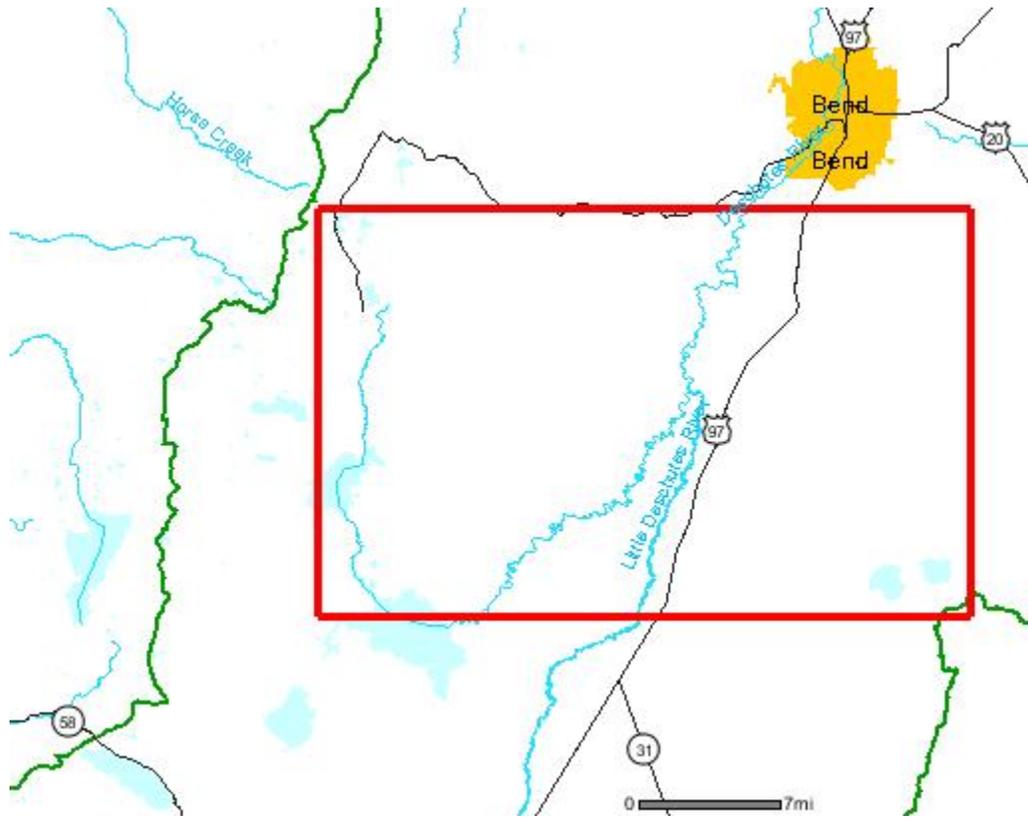
Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$16,400.00	\$0.00	\$0.00		\$16,400.00	No	No	
Upper Deschutes Watershed District	\$0.00	\$4,856.00	\$0.00	NRS-2 Staff Time	\$4,856.00	Yes	No	
Upper Deschutes Watershed District	\$0.00	\$250.00	\$0.00	Uniform Clothes	\$250.00	Yes	No	
ODFW Biometrician	\$0.00	\$4,692.00	\$0.00		\$4,692.00	Yes	No	
				Total Match Funding:	\$26,198.00			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Vehicle	Equipment	1	\$2,000.00	\$2,000.00	\$0.00	\$2,000.00
Vehicle Gasoline	Equipment	1	\$2,400.00	\$2,400.00	\$0.00	\$2,400.00
Experimental Biological Aid	Personnel	1	\$12,000.00	\$12,000.00	\$0.00	\$12,000.00
ODFW Biometrician Time	Personnel	1	\$4,692.00	\$0.00	\$4,692.00	\$4,692.00
ODFW District Staff Time	Personnel	1	\$4,856.00	\$0.00	\$4,856.00	\$4,856.00
Uniform Clothes	Supplies/Materials /Services	1	\$250.00	\$0.00	\$250.00	\$250.00
					Total Budget:	\$26,198.00

Project Map



Additional Files

Click a link to view that particular file.

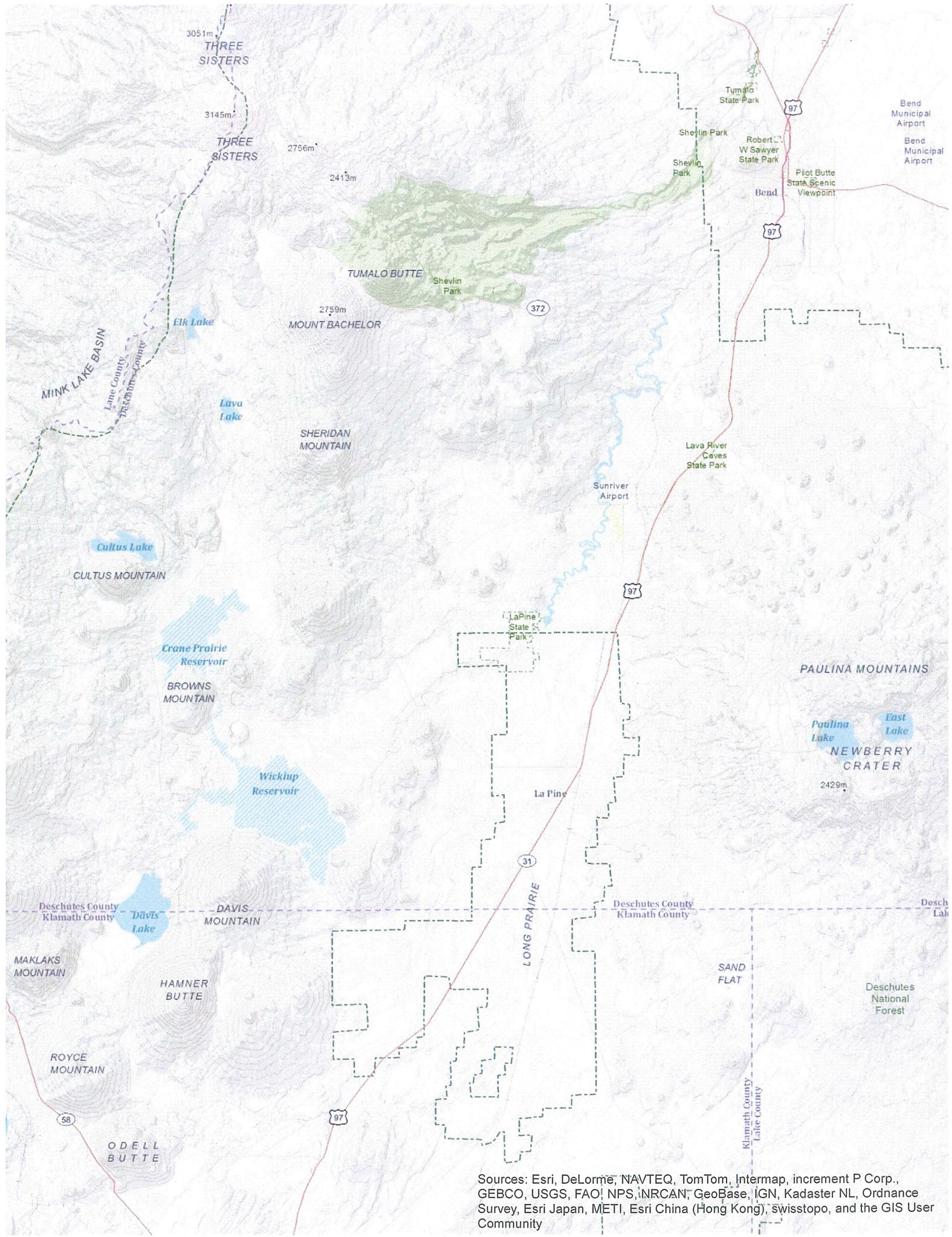
[Project Location Overview](#)

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[Signature Authorization Page](#)

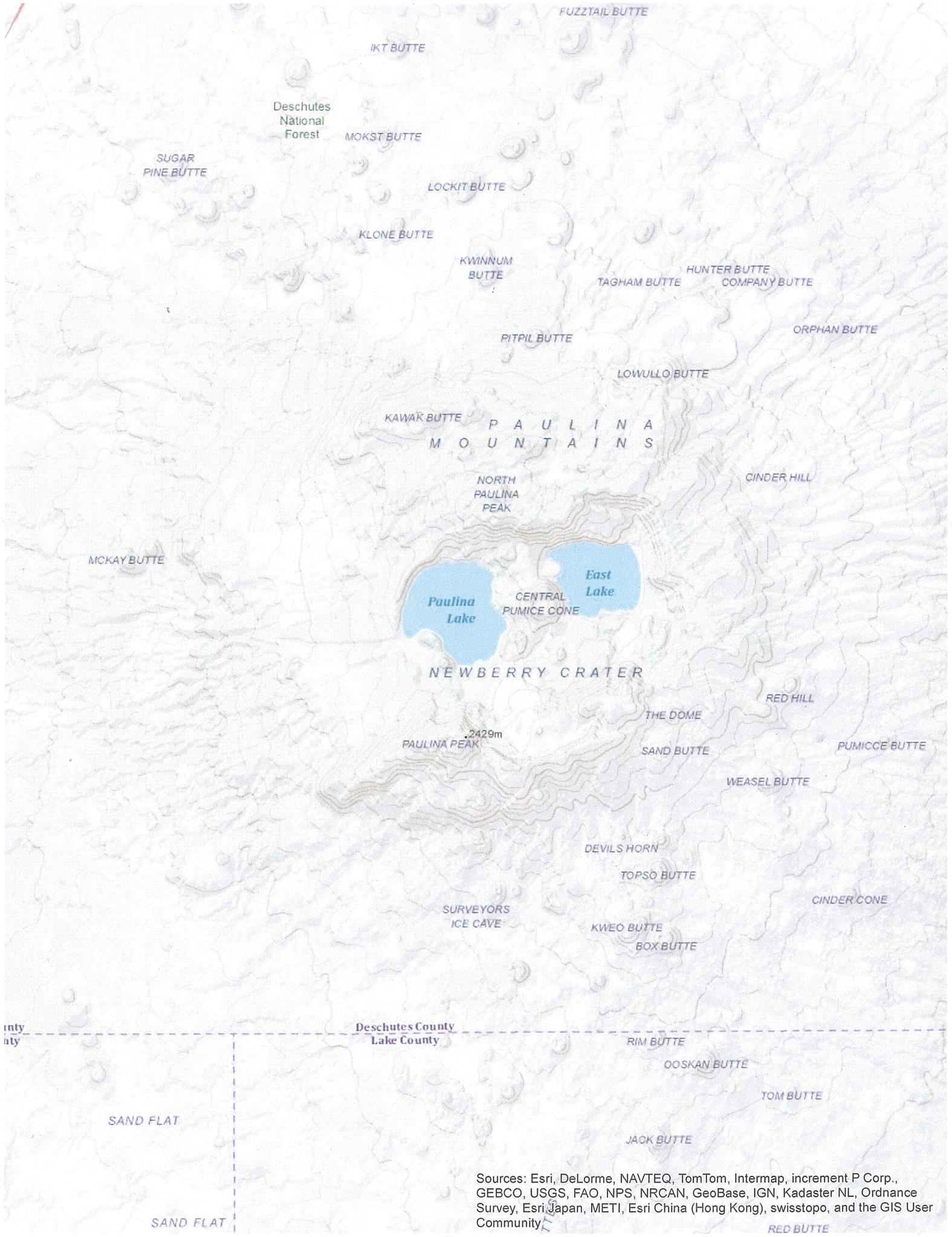
[Table 1: Stocking History 2010-2013](#)



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, INRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster-NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community



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Deschutes County
Lake County

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Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

RED BUTTE

Waterbody	Year	Species	Stock	Size	No./lb.	lbs. Stocked	Total # Stocked	Total lbs. Stocked
Crane Prairie	2010	RB	53	Fingerlings	7.2	873.1	45,257	6,286
Crane Prairie	2010	RB	53T	Fingerlings	7.2	873.1	45,258	6,286
Crane Prairie	2011	RB	53	Fingerlings	10.0	362.4	36,242	3,624
Crane Prairie	2011	RB	53T	Fingerlings	10.0	362.4	36,242	3,624
Crane Prairie	2012	RB	53	Fingerlings	8.7	583.4	44,150	5,075
Crane Prairie	2012	RB	53T	Fingerlings	7.9	699.8	43,683	5,529
Crane Prairie	2012	RB	127	Legals	0.5	112.0	28	56
Crane Prairie	2013	RB	53	Fingerlings	25.5	101.7	66,234	2,595
Crane Prairie	2013	RB	127	Legals	3.0	555.7	5,001	1,667
Crane Prairie	2013	RB	127T	Fingerlings	40.0	17.5	28,000	700

Waterbody	Year	Species	Stock	Size	No./lb.	lbs. Stocked	Total # Stocked	Total lbs. Stocked
Cultus, Big	2010	RB	127	Legals	3.0	667.0	6,003	2,001
Cultus, Big	2011	RB	72T	Fingerlings	200.0	0.4	15,000	75
Cultus, Big	2011	RB	127	Legals	3.2	605.6	6,011	1,908
Cultus, Big	2012	RB	72T	Legals	3.0	667.0	6,003	2,001
Cultus, Big	2013	RB	72T	Legals	3.0	556.0	5,004	1,668

Waterbody	Year	Species	Stock	Size	No./lb.	lbs. Stocked	Total # Stocked	Total lbs. Stocked
East	2010	AS	123	Legals	3.8	157.3	2,273	598
East	2010	BrT	68	Fingerlings	8.0	156.3	10,000	1,250
East	2010	KOK	67	Fingerlings	85.0	2.8	19,975	235
East	2010	RB	127	Fingerlings	22.5	60.5	30,575	1,360
East	2010	RB	127	Legals	3.0	667.7	6,009	2,003
East	2011	AS	123	Legals	3.2	242.2	2,480	775
East	2011	BrT	68	Fingerlings	7.9	144.3	9,006	1,140
East	2011	KOK	67	Fingerlings	81.9	3.0	19,993	244
East	2011	RB	127	Fingerlings	35.8	39.1	50,012	1,398
East	2011	RB	127	Legals	3.0	713.3	6,420	2,140
East	2012	AS	123	Legals	3.8	399.2	5,795	1,521
East	2012	BrT	68	Fingerlings	8.0	153.1	9,800	1,225
East	2012	KOK	67	Fingerlings	112.0	1.6	19,936	178
East	2012	RB	53	Fingerlings	4.6	244.3	5,172	1,124
East	2012	RB	107T	Fingerlings	7.9	166.3	10,383	1,314
East	2012	RB	127	Legals	3.0	1089.7	9,825	3,272
East	2013	RB	127	Legals	3.0	1103.3	9,930	3,310
East	2013	BrT	68	Fingerlings	8.5	126.6	9,146	1,076

Stock Codes: (T = Triploid) & (B = Broodstock)

(53) Oak Springs / (67) Paulina-East Lake / (68) Wickiup Reservoir / (72) Capecod

(107) Black water from Canada / (119) Hackleman Creek / (123) Hosmer Lake / (127) Crane Prairie

						lbs.	Total #	Total lbs.
Waterbody	Year	Species	Stock	Size	No./lb.	Stocked	Stocked	Stocked
Elk	2010	BT	158	Fingerlings	120.0	1.4	20,040	167
Elk	2011	BT	158	Fingerlings	132.0	1.3	21,780	165
Elk	2012	BT	158	Fingerlings	198.5	0.3	13,500	68
Elk	2012	CT	119	Fingerlings	143.0	0.9	18,876	132
Elk	2013	CT	119	Fingerlings	270.0	0.3	20,250	75

						lbs.	Total #	Total lbs.
Waterbody	Year	Species	Stock	Size	No./lb.	Stocked	Stocked	Stocked
Hosmer	2010	AS	123	Legals	3.8	207.6	2,998	789
Hosmer	2011	AS	123	Legals	3.4	255.9	2,958	870
Hosmer	2012	AS	123	Legals	2.5	560.0	3,500	1,400
Hosmer	2013	CT	119B	Legals	1.6	734.0	1,881	1,175
Hosmer	2013	RB	127	Legals	3.0	283.3	2,550	850

						lbs.	Total #	Total lbs.
Waterbody	Year	Species	Stock	Size	No./lb.	Stocked	Stocked	Stocked
Lava, Big	2010	RB	127	Fingerlings	20.0	85.6	34,220	1,711
Lava, Big	2011	RB	53	Fingerlings	11.0	209.5	25,340	2,304
Lava, Big	2011	RB	127	Fingerlings	25.2	134.5	85,640	3,394
Lava, Big	2012	RB	53	Fingerlings	16.0	78.1	20,000	1,250
Lava, Big	2012	RB	53	Legals	4.0	486.3	7,780	1,945
Lava, Big	2012	RB	127	Fingerlings	24.1	178.5	103,550	4,299
Lava, Big	2013	RB	127B	Legals	3.3	45.0	500	150
Lava, Big	2013	RB	53	Legals	4.2	289.3	5,103	1,215
Lava, Big	2013	RB	127	Fingerlings	26.0	150.1	101,478	3,903

						lbs.	Total #	Total lbs.
Waterbody	Year	Species	Stock	Size	No./lb.	Stocked	Stocked	Stocked
Paulina	2010	BrT	68	Fingerlings	8.0	178.8	11,440	1,430
Paulina	2010	KOK	67	Fingerlings	85.0	2.8	19,975	235
Paulina	2010	RB	127	Fingerlings	22.5	60.4	30,580	1,359
Paulina	2011	BrT	68	Fingerlings	7.9	160.8	10,033	1,270
Paulina	2011	KOK	67	Fingerlings	89.0	1.3	9,968	112
Paulina	2011	RB	127	Fingerlings	27.0	41.1	29,997	1,111
Paulina	2012	BrT	68	Fingerlings	8.0	166.9	10,680	1,335
Paulina	2012	KOK	67	Fingerlings	112.0	0.8	9,968	89
Paulina	2012	RB	53	Fingerlings	4.6	222.7	4,709	1,024
Paulina	2012	RB	127	Legals	3.0	1110.3	9,999	3,332
Paulina	2012	RB	171	Legals	3.0	1416.7	12,750	4,250
Paulina	2013	RB	127	Legals	3.0	1104.0	9,936	3,312
Paulina	2013	RB	171	Fingerlings	5.4	363.9	10,611	1,965
Paulina	2013	BrT	68	Fingerlings	8.5	117.6	8,500	1,000

Stock Codes: (T = Triploid) & (B = Broodstock)

(53) Oak Springs / (67) Paulina-East Lake / (68) Wickiup Reservoir / (72) Capecod

(107) Black water from Canada / (119) Hackleman Creek / (123) Hosmer Lake / (127) Crane Prairie

Signature Authorization Page

I hereby make an application for financial assistance under the terms and conditions of the R&E Program as described in my project application.

I understand that if my project is approved for funding, the following will apply:

- All project sponsors must sign a grant agreement containing the terms and conditions on which funding will be released.
- Project expenses which occur before the grant agreement is signed or after the expiration date will not be paid by the R&E Program.
- Copies of all necessary permits must be submitted to the R&E Program.
- Project sponsors must certify compliance with local, state, and federal regulations and laws.
- Landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Regular progress reports may be required, and at the end of each project a Completion Report must be submitted.
- Educational products resulting from projects are public domain.
- All information submitted to either party under this application is subject to the federal Freedom of Information Act.

Project: CASCADE LAKES CREEK

Applicant: 

Date: 12/6/13

Regional Manager: 

Date: 12/6/13