

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION TITLE- 14 MCN 23 McNary Ladder Outage for Dive to Recover Camera Equipment and to Remove Floating Orifice for Repair - [update](#)

COORDINATION DATE- ~~25-September-2014~~ [21 October 2014](#)

PROJECT- McNary Lock and Dam

RESPONSE DATE- FPOM 9 October 2014. [Update - by 28 October 2014](#)

Description of the problem:

While attempting to retrieve a Didson sonar camera near the experimental lamprey passage structure at Oregon ladder entrance SFEW2, the UC Davis crew found that the camera was stuck on its trolley, and all attempts to remove it were futile. The current was too swift to allow inspection by another camera, so no one is sure just why they could not retrieve the camera. We suspect that debris is interfering with the mounting system, preventing retrieval. The only way to remove this camera, which is about 35' below the surface, is to send a diver down. However, diving in this entrance requires shutting down the two fish pumps, and placing the ladder in orifice flow. Based on recent experience, we would expect about a 5 hour ladder outage to perform this dive and retrieve the camera. At the same time, in order to take advantage of the ladder outage, we would like to stoplog one floating orifice slot in order to remove the orifice for restoration. (Orifice repairs were endorsed by FPOM earlier; this just starts the process a few months earlier than originally anticipated.)

Type of outage required:

Shut down Fish Pumps 1 and 3, and place the ladder in orifice flow from 1300 hours to approximately 1800 hours.

Impact on facility operation:

The dive and associated shut down would occur between 1300 and 1800 hours, when fish use of the ladder is the lower level (see attached McNary diel charts), and ~~after~~ [on](#) November [13](#), when adult fish use of the ladder is minimal. The tables (Appendix A) and attached charts show adult fish use of the Oregon ladder from 9/1 to 12/31, for the two most recent years where counting occurred after October 31.

Dates of impacts/repairs:

~~The week starting~~ November [13](#), 2014. ~~Divers are here for another study; we need flexibility to work around their schedule for that week.~~

Length of time for repairs:

Less than 5 hours total ladder down time, from shut down until start up.

Expected impacts on fish passage:

Minimal: Occurs at a time of year and a time of day when adult fish passage is at a low level.

Comments from agencies:

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]
Sent: Wednesday, October 01, 2014 2:32 PM
To: Dugger, Carl R NWW
Cc: Moody, Gregory P NWW; Gersbach, William J NWW
Subject: [EXTERNAL] Re: Gary's info request for the week of Nov. 3 (UNCLASSIFIED)

Stunning effort Carl! Thank you. This is just what is needed in these MOC's to back up the claim of minimal impact. Now it just needs to be included in an updated MOC and we can get on with the coordination. Personally, I am ok with the request, not so much for the Didson issue as for getting an early start on those FOG's. Thanks for humoring me. Gary

On Wed, Oct 1, 2014 at 2:17 PM, Dugger, Carl R NWW <Carl.R.Dugger@usace.army.mil> wrote:
Classification: UNCLASSIFIED
Caveats: NONE

Greg and Gary,

Looking over the data for the period of Nov. 3 through Nov. 7 of 2007 and 2012 (attached), the only years we have any "recent" counts for the Oregon ladder, the daily count averages are as follows:

Chinook: 30.5
Steelhead: 274.7
Coho: 11.2 (unlisted?)
Other salmon: 0.0
Daily Total: 316.4

If the fish pumps were down for the full 5 hours - a worst case scenario:

$5/24 = 0.208$ of a day;

0.208×316.4 daily average = 65.9 = 70 fish delayed by a 5 hour ladder outage.

However, since the outage would occur between 1300 and 1700 hours, about the 5 slowest hours of the day, per the diel charts (attached), probably fewer than half that number of fish would be delayed.

You can increase these numbers to account for the record numbers for this year, and you can decrease them for the fact that some of subpopulations of these fish are not listed, but my best guess is that fewer than 70 fish, including unlisted fish, would be delayed by this action.

Please let me know if you need any additional information.

- Carl

FPOM 9 October 2014, concurred with the work on original MOC to start the week of Nov 3.

Final results:

We shut down both fish pumps and went into orifice flow for less than two hours. When this happened, pressure was relieved enough on the camera/trolley systems that they were able to retrieve them, without needing to send a diver into the water. They were also able to place the stoplogs to facilitate removal of a balky floating orifice. However, they were unable to remove the orifice, in spite of numerous attempts. Removal will need to wait until late January, when that portion of the fish ladder will either be de-watered, or when divers will be available to assist with removal of the disabled orifice.

Please email or call with questions or concerns.

Thank you,

Carl R. Dugger
 Supervisory Fisheries Biologist
 McNary Lock and Dam
 (541) 922-2263
carl.r.dugger@usace.army.mil

Appendix A: Adult fish use, McNary Oregon ladder, 9/1 through 12/31, 2007 and 2012:

McNary Oregon Shore												
Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink
9/1/2007	416	364	52	1974	1495	479	12	8	4	0	0	0
9/2/2007	875	826	49	1605	1189	416	26	24	2	0	0	0
9/3/2007	1440	1337	103	1418	1045	373	80	78	2	0	0	0
9/4/2007	717	637	80	2205	1636	569	14	14	0	0	0	0
9/5/2007	654	482	172	2757	2113	644	63	49	14	0	0	0
9/6/2007	231	122	109	1932	1543	389	58	46	12	0	0	0
9/7/2007	422	256	166	1416	1115	301	102	82	20	0	0	0
9/8/2007	810	496	314	829	659	170	49	42	7	0	0	0
9/9/2007	1158	704	454	666	509	157	67	56	11	0	0	0
9/10/2007	1838	1214	624	815	619	196	73	65	8	0	0	0
9/11/2007	1466	1039	427	1104	864	240	78	62	16	0	0	0
9/12/2007	2288	1600	688	1799	1435	364	98	85	13	0	0	0
9/13/2007	1482	858	624	2273	1788	485	130	114	16	0	0	0
9/14/2007	1092	624	468	1827	1432	395	145	122	23	0	0	0
9/15/2007	988	542	446	2135	1686	449	179	155	24	2	0	0
9/16/2007	868	494	374	4458	3539	919	231	203	28	0	0	0
9/17/2007	1836	1105	731	4569	3548	1021	441	382	59	2	0	0
9/18/2007	1216	646	570	4770	3689	1081	498	438	60	1	0	0
9/19/2007	589	269	320	3845	3049	796	344	307	37	0	0	0
9/20/2007	371	132	239	3274	2570	704	291	253	38	0	0	0
9/21/2007	464	258	206	3446	2788	658	454	402	52	0	0	0
9/22/2007	887	450	437	4326	3391	935	359	313	46	0	0	0
9/23/2007	830	415	415	4804	3800	1004	518	450	68	0	0	0
9/24/2007	1216	520	696	5625	4480	1145	408	353	55	-1	0	0
9/25/2007	1999	950	1049	4246	3462	784	467	406	61	0	0	0

9/26/2007	2130	920	1210	5608	4550	1058	644	562	82	0	0	0
9/27/2007	1983	796	1187	4748	3854	894	584	535	49	0	0	0
9/28/2007	1188	502	686	2346	1789	557	520	466	54	0	0	0
9/29/2007	1793	785	1008	5061	3934	1127	1154	1057	97	1	0	0
9/30/2007	1223	1069	154	3439	2663	776	225	205	20	-2	0	0
10/1/2007	537	250	287	1472	1159	313	379	331	48	0	0	0
10/2/2007	850	386	464	2788	2159	629	366	323	43	1	0	0
10/3/2007	1032	492	540	3974	3043	931	427	367	60	-1	0	0
10/4/2007	790	401	389	2397	1855	542	382	340	42	0	0	0
10/5/2007	560	328	232	2193	1691	502	401	343	58	0	0	0
10/6/2007	686	409	277	2958	2302	656	781	674	107	0	0	0
10/7/2007	568	350	218	2867	2170	697	1066	952	114	0	0	0
10/8/2007	534	346	188	2619	1996	623	696	590	106	0	0	0
10/9/2007	307	176	131	1613	1266	347	469	420	49	0	0	0
10/10/2007	136	72	64	1245	952	293	341	313	28	0	0	0
10/11/2007	208	76	132	1055	815	240	259	229	30	0	0	0
10/12/2007	347	173	174	1181	863	318	130	102	28	0	0	0
10/13/2007	262	142	120	720	526	194	70	62	8	0	0	0
10/14/2007	330	211	119	845	649	196	65	55	10	1	0	0
10/15/2007	303	187	116	917	664	253	74	61	13	0	0	0
10/16/2007	383	184	199	1413	1090	323	97	80	17	0	0	0
10/17/2007	323	160	163	1349	1067	282	113	83	30	0	0	0
10/18/2007	206	118	88	1421	1068	353	106	83	23	1	0	0
10/19/2007	164	88	76	800	598	202	53	43	10	0	0	0
10/20/2007	128	49	79	805	600	205	75	64	11	0	0	0
10/21/2007	129	61	68	1115	859	256	87	80	7	0	0	0
10/22/2007	256	179	77	756	566	190	217	200	17	0	0	0
10/23/2007	198	137	61	908	668	240	195	182	13	0	0	0
10/24/2007	219	170	49	925	654	271	300	270	30	0	0	0
10/25/2007	281	222	59	1411	1008	403	260	232	28	0	0	0
10/26/2007	145	91	54	1415	947	468	157	119	38	0	0	0
10/27/2007	76	59	17	667	494	173	77	67	10	0	0	0
10/28/2007	59	35	24	527	400	127	52	42	10	0	0	0
10/29/2007	76	53	23	414	323	91	47	41	6	0	0	0
10/30/2007	82	68	14	395	271	124	36	35	1	0	0	0
10/31/2007	55	30	25	195	155	40	31	26	5	0	0	0
11/1/2007	39	28	11	246	185	61	25	23	2	0	0	0
11/2/2007	22	11	11	225	174	51	13	11	2	0	0	0
11/3/2007	26	16	10	236	176	60	15	14	1	0	0	0
11/4/2007	23	17	6	221	162	59	21	18	3	0	0	0
11/5/2007	9	6	3	239	180	59	25	20	5	0	0	0
11/6/2007	4	4	0	106	84	22	10	7	3	0	0	0
11/7/2007	12	6	6	138	96	42	6	6	0	0	0	0
11/8/2007	22	12	10	80	60	20	8	7	1	0	0	0
11/9/2007	7	3	4	69	57	12	4	3	1	0	0	0
11/10/2007	8	8	0	81	57	24	7	7	0	0	0	0
11/11/2007	13	10	3	110	80	30	9	9	0	0	0	0
11/12/2007	13	7	6	111	85	26	10	10	0	0	0	0
11/13/2007	8	7	1	106	78	28	0	0	0	0	0	0
11/14/2007	8	4	4	141	96	45	6	5	1	0	0	0
11/15/2007	10	8	2	86	68	18	3	4	-1	0	0	0
11/16/2007	13	10	3	82	53	29	2	1	1	0	0	0
11/17/2007	4	4	0	70	52	18	0	0	0	0	0	0

11/18/2007	2	2	0	82	59	23	3	3	0	0	0	0
11/19/2007	2	2	0	81	65	16	-1	-1	0	0	0	0
11/20/2007	9	9	0	47	36	11	2	2	0	0	0	0
11/21/2007	3	2	1	45	32	13	0	0	0	0	0	0
11/22/2007	7	7	0	231	167	64	0	-1	1	0	0	0
11/23/2007	-1	-1	0	331	236	95	1	1	0	0	0	0
11/24/2007	2	2	0	165	123	42	2	2	0	0	0	0
11/25/2007	8	5	3	200	148	52	0	0	0	0	0	0
11/26/2007	4	3	1	133	96	37	1	1	0	0	0	0
11/27/2007	1	1	0	97	69	28	0	0	0	0	0	0
11/28/2007	3	3	0	88	68	20	1	1	0	0	0	0
11/29/2007	1	1	0	116	88	28	0	0	0	0	0	0
11/30/2007	1	1	0	92	67	25	0	0	0	0	0	0
12/1/2007	3	3	0	38	29	9	0	0	0	0	0	0
12/2/2007	2	2	0	44	31	13	2	2	0	0	0	0
12/3/2007	1	1	0	68	51	17	0	0	0	0	0	0
12/4/2007	4	2	2	68	51	17	0	0	0	0	0	0
12/5/2007	0	0	0	25	13	12	0	0	0	0	0	0
12/6/2007	2	1	1	43	33	10	0	0	0	0	0	0
12/7/2007	0	1	-1	53	37	16	0	0	0	0	0	0
12/8/2007	1	1	0	88	57	31	1	1	0	0	0	0
12/9/2007	2	2	0	37	28	9	0	0	0	0	0	0
12/10/2007	1	1	0	151	104	47	0	0	0	0	0	0
12/11/2007	0	0	0	97	58	39	0	0	0	0	0	0
12/12/2007	0	0	0	85	68	17	1	1	0	0	0	0
12/13/2007	1	1	0	78	67	11	1	1	0	0	0	0
12/14/2007	0	0	0	117	80	37	0	0	0	0	0	0
12/15/2007	0	0	0	26	19	7	0	0	0	0	0	0
12/16/2007	2	1	1	59	53	6	-1	-1	0	0	0	0
12/17/2007	-1	0	-1	61	43	18	0	0	0	0	0	0
12/18/2007	0	0	0	15	9	6	0	0	0	0	0	0
12/19/2007	0	0	0	24	17	7	0	0	0	0	0	0
12/20/2007	0	0	0	29	20	9	0	0	0	0	0	0
12/21/2007	0	0	0	30	16	14	0	0	0	0	0	0
12/22/2007	0	0	0	24	19	5	0	0	0	0	0	0
12/23/2007	0	0	0	22	15	7	0	0	0	0	0	0
12/24/2007	0	0	0	54	31	23	0	0	0	0	0	0
12/25/2007	0	0	0	16	9	7	0	0	0	0	0	0
12/26/2007	0	0	0	21	11	10	0	0	0	0	0	0
12/27/2007	0	0	0	17	11	6	0	0	0	0	0	0
12/28/2007	1	1	0	23	18	5	0	0	0	0	0	0
12/29/2007	0	0	0	3	3	0	0	0	0	0	0	0
12/30/2007	0	0	0	31	20	11	0	0	0	0	0	0
12/31/2007	0	0	0	32	25	7	0	0	0	0	0	0
total	45002	26330	18672	138214	107155	31059	16298	14300	1998	5	0	0

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pin
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McNary Oregon Shore

Date	All	Adult	Jack	All	Clipped	Unclipped	All	Adult	Jack	Sockeye	Chum	Pink
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	Chinook	Chinook	Chinook	Steelhead	Steelhead	Steelhead	Coho	Coho	Coho			
9/1/2012	1084	888	196	380	254	126	54	42	12	0	0	0
9/2/2012	2759	2430	329	746	517	229	119	113	6	0	0	0
9/3/2012	2501	2220	281	690	458	232	104	102	2	0	0	0
9/4/2012	4478	3798	680	1439	1068	371	181	169	12	1	0	0
9/5/2012	4873	4056	817	1296	958	338	151	139	12	2	0	0
9/6/2012	3225	2468	757	1306	940	366	346	329	17	0	0	0
9/7/2012	4481	3484	997	1912	1410	502	570	529	41	0	0	0
9/8/2012	1776	1386	390	1123	713	410	346	306	40	0	0	0
9/9/2012	4581	3514	1067	1758	1244	514	652	598	54	1	0	0
9/10/2012	4497	3676	821	2385	1699	686	852	806	46	0	0	0
9/11/2012	4302	3631	671	1802	1249	553	611	593	18	0	0	0
9/12/2012	4488	3827	661	1047	748	299	363	350	13	0	0	0
9/13/2012	4510	3886	624	1393	1027	366	543	523	20	4	0	0
9/14/2012	4445	3252	1193	1801	1352	449	584	535	49	4	0	0
9/15/2012	4575	3340	1235	1694	1320	374	660	593	67	0	0	0
9/16/2012	5002	3557	1445	1407	1055	352	479	448	31	0	0	0
9/17/2012	5732	4070	1662	1455	1078	377	440	424	16	1	0	0
9/18/2012	5922	4907	1015	1552	1090	462	387	359	28	0	0	0
9/19/2012	5820	4574	1246	2261	1655	606	432	392	40	1	0	0
9/20/2012	6692	5156	1536	2682	1966	716	786	750	36	0	0	0
9/21/2012	5506	3874	1632	1710	1277	433	540	515	25	0	0	0
9/22/2012	4320	3160	1160	1572	1118	454	554	511	43	0	0	0
9/23/2012	6810	4705	2105	2468	1837	631	766	719	47	-1	0	0
9/24/2012	4710	3098	1612	1813	1399	414	377	358	19	0	0	0
9/25/2012	3959	2400	1559	2283	1754	529	400	368	32	0	0	0
9/26/2012	4543	3698	845	4318	3002	1316	419	391	28	0	0	0
9/27/2012	3023	1991	1032	2289	1732	557	205	187	18	0	0	0
9/28/2012	1478	956	522	1798	1307	491	213	193	20	0	0	0
9/29/2012	2128	1368	760	1311	961	350	174	157	17	0	0	0
9/30/2012	3228	2166	1062	1714	1247	467	243	211	32	0	0	0
10/1/2012	2958	2082	876	1435	1057	378	254	222	32	0	0	0
10/2/2012	2246	1504	742	899	612	287	89	70	19	0	0	0
10/3/2012	1929	961	968	1075	764	311	53	48	5	0	0	0
10/4/2012	1559	779	780	685	497	188	48	43	5	0	0	0
10/5/2012	2244	1356	888	1048	750	298	59	41	18	0	0	0
10/6/2012	1821	1108	713	1201	911	290	45	41	4	0	0	0
10/7/2012	1149	677	472	1051	786	265	52	44	8	0	0	0
10/8/2012	783	446	337	618	478	140	24	20	4	0	0	0
10/9/2012	774	455	319	748	557	191	184	112	72	0	0	0
10/10/2012	905	527	378	895	719	176	72	48	24	0	0	0
10/11/2012	1103	580	523	936	691	245	67	55	12	0	0	0
10/12/2012	828	451	377	623	443	180	37	35	2	0	0	0
10/13/2012	994	527	467	1194	802	392	74	66	8	0	0	0
10/14/2012	1013	611	402	974	652	322	50	48	2	0	0	0
10/15/2012	971	637	334	1020	659	361	58	58	0	0	0	0
10/16/2012	480	324	156	766	512	254	61	47	14	0	0	0
10/17/2012	379	240	139	652	382	270	66	65	1	0	0	0
10/18/2012	307	185	122	560	368	192	34	32	2	0	0	0
10/19/2012	222	109	113	458	266	192	66	65	1	0	0	0
10/20/2012	356	242	114	1251	647	604	131	124	7	0	0	0
10/21/2012	490	275	215	2052	1045	1007	133	122	11	0	0	0
10/22/2012	132	58	74	724	394	330	62	56	6	0	0	0

10/23/2012	149	79	70	483	281	202	46	42	4	0	0	0
10/24/2012	83	46	37	210	125	85	40	36	4	0	0	0
10/25/2012	111	49	62	269	151	118	14	13	1	0	0	0
10/26/2012	114	52	62	289	175	114	14	12	2	0	0	0
10/27/2012	69	34	35	164	110	54	18	14	4	0	0	0
10/28/2012	56	25	31	179	119	60	20	20	0	0	0	0
10/29/2012	108	58	50	196	134	62	13	12	1	0	0	0
10/30/2012	153	71	82	310	221	89	19	14	5	0	0	0
10/31/2012	78	26	52	180	112	68	7	7	0	0	0	0
11/1/2012	57	37	20	200	161	39	1	1	0	0	0	0
11/2/2012	52	35	17	255	223	32	3	3	0	0	0	0
11/3/2012	86	60	26	442	377	65	1	1	0	0	0	0
11/4/2012	66	42	24	340	301	39	3	3	0	0	0	0
11/5/2012	31	21	10	398	330	68	8	8	0	0	0	0
11/6/2012	28	11	17	331	293	38	17	17	0	0	0	0
11/7/2012	20	6	14	296	210	86	6	6	0	0	0	0
11/8/2012	19	13	6	332	265	67	8	8	0	0	0	0
11/9/2012	6	0	6	215	188	27	15	15	0	0	0	0
11/10/2012	3	3	0	98	81	17	3	3	0	0	0	0
11/11/2012	17	13	4	83	69	14	23	22	1	0	0	0
11/12/2012	10	8	2	138	119	19	12	12	0	0	0	0
11/13/2012	3	2	1	68	57	11	11	9	2	0	0	0
11/14/2012	1	1	0	51	32	19	16	16	0	0	0	0
11/15/2012	1	0	1	32	24	8	14	14	0	0	0	0
11/16/2012	0	0	0	56	42	14	11	11	0	0	0	0
11/17/2012	4	1	3	64	44	20	10	10	0	0	0	0
11/18/2012	3	2	1	93	56	37	8	7	1	0	0	0
11/19/2012	0	0	0	60	39	21	7	7	0	0	0	0
11/20/2012	0	0	0	52	33	19	11	11	0	0	0	0
11/21/2012	0	0	0	68	51	17	9	9	0	0	0	0
11/22/2012	1	0	1	65	48	17	14	14	0	0	0	0
11/23/2012	2	2	0	62	39	23	7	7	0	0	0	0
11/24/2012	0	0	0	67	45	22	7	6	1	0	0	0
11/25/2012	0	0	0	83	56	27	21	18	3	0	0	0
11/26/2012	0	0	0	81	52	29	20	20	0	0	0	0
11/27/2012	0	0	0	86	46	40	1	1	0	0	0	0
11/28/2012	0	0	0	73	43	30	2	2	0	0	0	0
11/29/2012	0	0	0	50	35	15	1	1	0	0	0	0
11/30/2012	0	0	0	80	51	29	2	2	0	0	0	0
12/1/2012	0	0	0	32	18	14	2	2	0	0	0	0
12/2/2012	0	0	0	57	38	19	2	2	0	0	0	0
12/3/2012	0	0	0	49	35	14	5	5	0	0	0	0
12/4/2012	0	0	0	83	53	30	2	2	0	0	0	0
12/5/2012	0	0	0	131	87	44	0	0	0	0	0	0
12/6/2012	2	1	1	86	58	28	1	1	0	0	0	0
12/7/2012	2	2	0	131	89	42	0	0	0	0	0	0
12/8/2012	1	1	0	259	168	91	3	3	0	0	0	0
12/9/2012	2	2	0	155	118	37	1	1	0	0	0	0
12/10/2012	0	0	0	183	113	70	0	0	0	0	0	0
12/11/2012	0	0	0	133	84	49	0	0	0	0	0	0
12/12/2012	0	0	0	188	118	70	5	5	0	0	0	0
12/13/2012	0	0	0	119	75	44	1	1	0	0	0	0
12/14/2012	0	0	0	115	71	44	1	1	0	0	0	0

12/15/2012	0	0	0	70	51	19	0	0	0	0	0	0
12/16/2012	0	0	0	62	42	20	0	0	0	0	0	0
12/17/2012	0	0	0	60	38	22	0	0	0	0	0	0
12/18/2012	1	1	0	49	29	20	0	0	0	0	0	0
12/19/2012	0	0	0	33	19	14	0	0	0	0	0	0
12/20/2012	0	0	0	33	20	13	1	1	0	0	0	0
12/21/2012	0	0	0	45	23	22	1	1	0	0	0	0
12/22/2012	0	0	0	22	7	15	0	0	0	0	0	0
12/23/2012	0	0	0	21	16	5	0	0	0	0	0	0
12/24/2012	0	0	0	21	14	7	0	0	0	0	0	0
12/25/2012	0	0	0	28	20	8	1	1	0	0	0	0
12/26/2012	0	0	0	15	8	7	0	0	0	0	0	0
12/27/2012	0	0	0	11	5	6	0	0	0	0	0	0
12/28/2012	0	0	0	7	3	4	0	0	0	0	0	0
12/29/2012	0	0	0	9	7	2	0	0	0	0	0	0
12/30/2012	0	0	0	5	1	4	0	0	0	0	0	0
12/31/2012	0	0	0	4	2	2	0	0	0	0	0	0
total	150430	110374	40056	81085	57695	23390	14759	13632	1127	13	0	0
Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink