RECLAMATION

Managing Water in the West

Technical Memorandum No. 3290-07-05

Steelhead Movements in the Upper Yakima River Basin, Fall 2002 – Spring 2006

U.S. Department of the Interior
Bureau of Reclamation
Technical Service Center
Denver, Colorado

April 2009

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Abstract

We studied movements and spawning behavior of adult steelhead, *Oncorhynchus mykiss,* in the upper Yakima River, Washington, from fall 2002 – spring 2006 using radiotelemetry. During this four year period, a total of 675 wild adult steelhead (about 6.4% of the Yakima River steelhead run) ascended Roza Diversion Dam, and of these, 451 were gastrically implanted with a 6-month radiotransmitter. Adult steelhead were observed migrating past Roza Diversion Dam from September through June, although the majority moved upstream in March and April. There were at least twice as many females as males each year with females comprising from 67.9% to 87.3%. Of 353 active radiotagged fish (98 fish were lost to the study due to angler capture, tag regurgitation, or tag failure), most (98.9%) moved upstream following release and 62.3% moved into a tributary to spawn. The Teanaway River, Swauk Creek, and Taneum Creek were the most frequently used subbasins. No tagged fish were contacted above Easton Diversion Dam. Mainstem spawners (37.7%) used the Yakima River between Roza and Town Ditch Diversion Dams more frequently than the upper mainstem reaches (73.3%). At least 34% of all radiotagged fish successfully moved out of the Yakima River following spawning; 32% of these during Roza Diversion Dam gate manipulations implemented to aid steelhead outmigration from the upper basin. We observed at least 1.8% repeat spawners; one female retuned to the upper Yakima River in three consecutive years.

Introduction

The steelhead (*Oncorhynchus mykiss*) is the anadromous form of rainbow trout and occurs naturally throughout the western United States and Canada. Steelhead inhabit coastal and inland rivers that drain to the ocean. Sympatric populations of resident rainbow trout and steelhead occur in both the mainstem and tributaries of the upper Yakima River and data suggest the two forms may not be reproductively isolated (Pearsons et al. 1998; Reclamation 2000; J. Hubble, Bureau of Reclamation, personal communication). Yakima River steelhead, a component of the Middle Columbia River steelhead Distinct Population Segment (DPS), were first listed as threatened on March 25, 1999 (Federal Register 64:14517-14528) and more recently reaffirmed as threatened (Federal Register 71:834-862). Causes of decline include migration blocks at numerous dams and reservoirs and loss of suitable spawning and rearing habitat due to water diversion, stream channelization, grazing, logging, mining, and pollution (Federal Register 64:14517-14528; Haring 2001). The Bureau of Reclamation is in consultation with the National Marine Fisheries Service to determine type and level of impacts from operation of the Yakima Project on the Middle Columbia River steelhead DPS.

At least four steelhead populations exist in the Yakima River including the upper Yakima River, the Naches River, and Satus and Toppenish Creeks (Hockersmith et al. 1995). Of these, the upper Yakima population is the smallest (4-5% of Yakima run; Hockersmith et al. 1995) and appears significantly reduced from historic levels (Reclamation 2000). The majority of steelhead produced in the Yakima River originate in Satus and Toppenish Creeks.

The Yakima River in central Washington begins at Keechelus Lake and flows southeasterly for over 320 km (200 miles) to join the Columbia River near Richland, Washington (Figure 1). Development in the Yakima Valley began in the 1800's and today, the Yakima River basin is one of the most intensively irrigated and managed river basins in the western United States (Rinella et al. 1992; Fuhrer et al. 1996; Reclamation 2000). In the upper Yakima and Naches Rivers, winter and spring flows are reduced while summer flows are high to meet irrigation and flood control needs using a network of storage reservoirs, mainstem diversion dams, hydropower facilities, and over 3300 km (2000 miles) of conveyance canals.

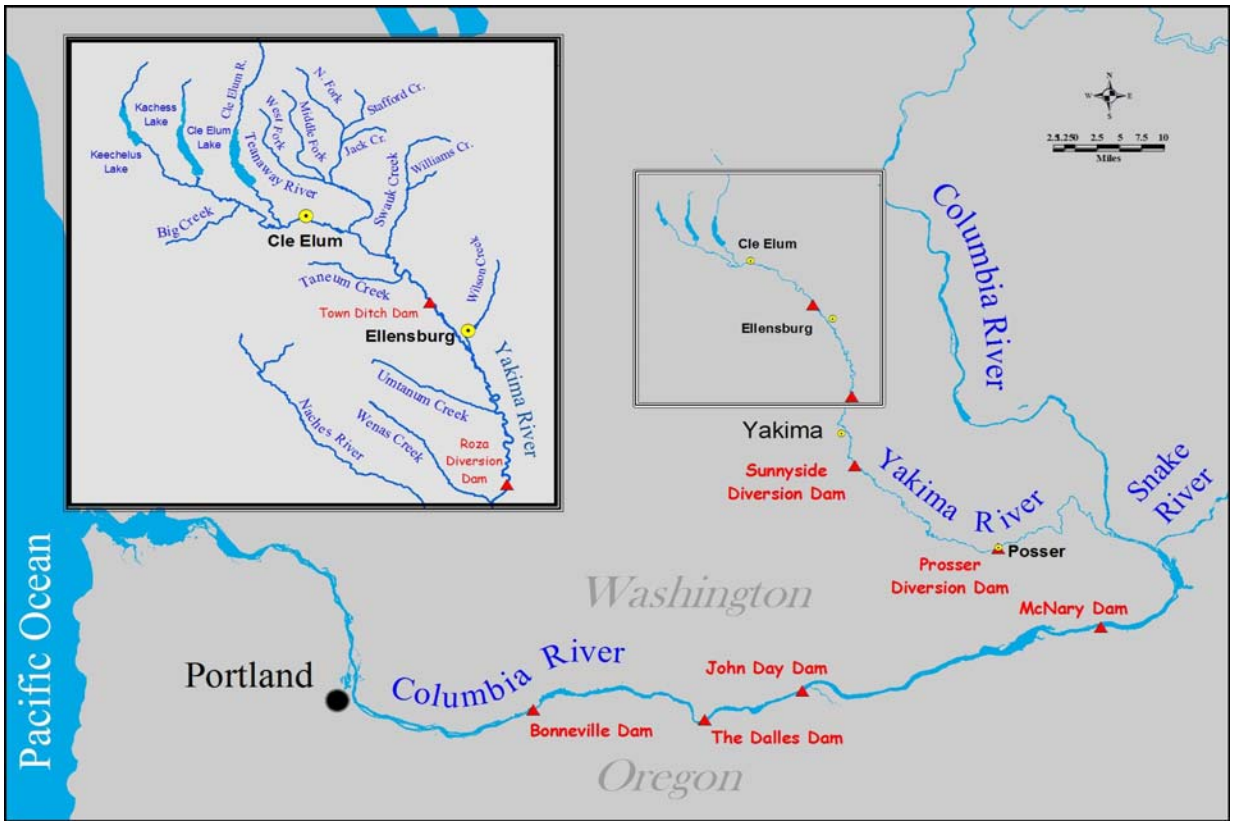

Figure 1. Map of the Yakima River Basin.

Roza Diversion Dam (20.4 m (67 ft) high, 148.1 m (486 ft) long with twin roller gates) about 206 km (128 miles) upstream from the mouth of the Yakima River, was built in 1939-1940 (Reclamation 2002; Figures 1, 2). The fish ladder was constructed at that time but was only accessible year-round after modifications to the water supply and fish exit in 1988. A video camera was installed in the early 1990's to count upstream migrating salmonids, and the Roza Fish Trap was built in 1992 to allow year-round handling of upstream migrants (operated by the Yakama Nation). Reclamation currently targets a minimum flow of 11.32 m^3/sec (400 ft^3/sec) below Roza Diversion Dam for fish passage but flows may range to 1,471.6 m^3/sec (52,000 ft^3/sec) in the spring (Reclamation 2002). The 11.32 m^3/sec (400 ft^3/sec) includes flow through the fish ladder and juvenile bypass system, through the east roller gate, and dam leakage. Adult steelhead can move

downstream through the juvenile bypass system but most are believed to pass under the east roller gate. Fish can also move downstream over and under the west roller gate when that gate is tucked.

Figure 2. Roza Diversion Dam, Yakima River, looking upstream.

Our objectives were to collect basic biological data on upper Yakima River adult steelhead (i.e., sex composition, age, length, weight), characterize timing and movement patterns of fish that ascend Roza Diversion Dam, identify their spawning distribution, and determine whether postspawned fish (i.e., steelhead kelts) outmigrate from the upper Yakima River basin.

Methods

We gastrically implanted adult *O. mykiss* (Figure 3) at the Roza Fish Trap with a 6-month radiotransmitter (16mm X 83mm, 29 gm in air in 2002/03; 16mm X 46mm, 16g in air, fall 2003-2006; Lotek Wireless, Inc.) from fall 2002-spring 2006 (four spawning seasons). Upstream migrating fish were collected for 24 hours in a holding pen, then bypassed into an anesthetic (120mg/L tricaine methane sulfonate) tank for handling. Each

steelhead was measured (fork length, FL, and postorbital length, POL, cm), weighed (kg), checked for external marks, sexed, scanned for a pit-tag (pit-tagged if none present), and a scale sample taken for aging. Fish were then placed in a trough and a uniquely coded transmitter gently inserted into the stomach via the mouth. A thick rubber band was placed about a third of the way along the transmitter to improve its retention in the fish's stomach. The antenna trailed out the mouth and was crimped to flow back alongside the fish's body. Anesthetized fish were allowed to recover in a river-fed tank for two hours and then released into Roza Pool via a fishway. In 2002-03 and 2003-04, we radiotagged the first portion of the steelhead run and thus, did not track later arriving fish. In 2004-05, we radiotagged every other steelhead, and in 2005-06, radiotagged all but two steelhead after January 1. Thus, we radiotracked only a portion of the upper basin steelhead run each year.

Figure 3. Adult steelhead – Roza Fish Trap, Yakima River.

We used mobile tracking and a Yakima River/lower Columbia River system-wide array of remote receiving stations to monitor fish movements. The watershed was tracked frequently so that we were in contact with tagged fish every few days following release. When possible, helicopter flights were made from Prosser to the uppermost reaches of the Yakima River headwaters, including the Teanaway River, Swauk Creek, and Taneum Creek subbasins. River kilometers (miles) were taken from the PTAGIS system with the

mouth of the Columbia River as River Kilometer (RK) 0 (River Mile, RM). Fixed data logging stations included Bonneville Dam (RK 234, RM 145.4), The Dalles Dam (RK 308, RM 191.4), John Day Dam (RK 347, RM 215.6), McNary Dam (RK 470, RM 292), lower Yakima River (RK 539, RM 341; RM 6 from the mouth of the Yakima River), Prosser Diversion Dam (RK 615, RM 382; RM 47.1 in the Yakima River), Sunnyside Diversion Dam (RK 706, RM 439; RM 103.8 in the Yakima River), Terrace Heights Bridge (RK 721, RM 448; RM 113.2 in the Yakima River), lower Naches River (RK 726, RM 452, RM 116.3 in the Yakima River), Roza Diversion Dam (RK 745, RM 463; RM 128 in the Yakima River, an underwater antenna was added in fall 2004 below the dam to assist with determining downstream fish movements), Town Ditch Diversion Dam (RK 799, RM 497; RM 161.5 in the Yakima River), lower Taneum Creek (RK 806, RM 501; RM 1 Taneum Creek), lower Swauk Creek (RK 812, RM 505; RM 1 in Swauk Creek), lower Teanaway River (RK 823, RM 512; RM 1 in the Teanaway River), and the Yakima River just downstream of the Cle Elum River (RK 838, RM 521; RM 185.6 in the Yakima River; Figure 1). Appendix 1a-1d contains tracking data for each year.

Age was determined by the number of freshwater and saltwater annuli (John Sneva, personal communication, Washington Department of Fish and Wildlife) plus one for the current year. Specifically, a four-year old fish had two salt and one freshwater mark, a five year-old had two or three fresh and one or two salt water marks, a six year-old had three freshwater and two salt water marks, and a seven year-old fish had four fresh and two salt water marks.

Annual adult steelhead counts (September 1 to June 30) at Prosser and Roza Diversion Dams were obtained from the Yakima Klickitat Fisheries Project database (B. Bosch, personal communication, Yakama Fisheries Nation) and modified to exclude hatchery steelhead and rainbow trout identified from scale analyses.

Results and Discussion

A total of 675 wild adult steelhead ascended Roza Diversion Dam in the Yakima River from Fall 2002- Spring 2006 (Table 1). The proportion of the Yakima River adult steelhead run observed at the Roza Fish Trap averaged 6.4% (Table 1). Steelhead moved upriver from September through June but peak arrival times to the upper Yakima River were March and April (Figure 4). Scale readings suggested most wild steelhead were four (25.4%) and five year-olds (43.8%; 26.4% of all fish had unreadable scales; Figure 5). Females outnumbered males each year (2.1 to 6.9 females to males, Table 2). Wild females averaged 54.1 cm POL and 2.8 kg (21.3 in, 6.2 lbs, n=493) and wild males averaged 54.3 cm POL and 2.9 kg (21.4 in, 6.4 lbs, n=143, Table 2; 39 fish were not sexed, 36 from early fall passage and 3 fish were missing sex data).

Table 1. Summary of wild adult steelhead counts, upper Yakima River, fall 2002 – spring 2006.

Year	Steelhead fish count at Prosser Diversion Dam[1]	Steelhead fish count at Roza Diversion Dam[2]	Number of steelhead tagged with a radiotransmitter	Number of active radiotagged steelhead
2002-03	2,224	119 (5.4%)[3]	103[4]	75[4]
2003-04	2,732	212 (7.8%)	117	96
2004-05	3,362	226 (6.7%)	121	99
2005-06	1,991	118 (5.9%)	110	83

[1]Numbers taken from the Yakima Klickitat Fisheries Project Database (Yakama Nation).
[2]Numbers derived from fall video counts in the east bank fish ladder and steelhead identified at the Roza Fish Trap in the spring; excludes hatchery steelhead and rainbow trout identified from scale analysis).
[3]Proportion of Yakima River steelhead run.
[4]Includes one upper Yakima River female released above Prosser Diversion Dam (T. Newsome, Yakama Nation).

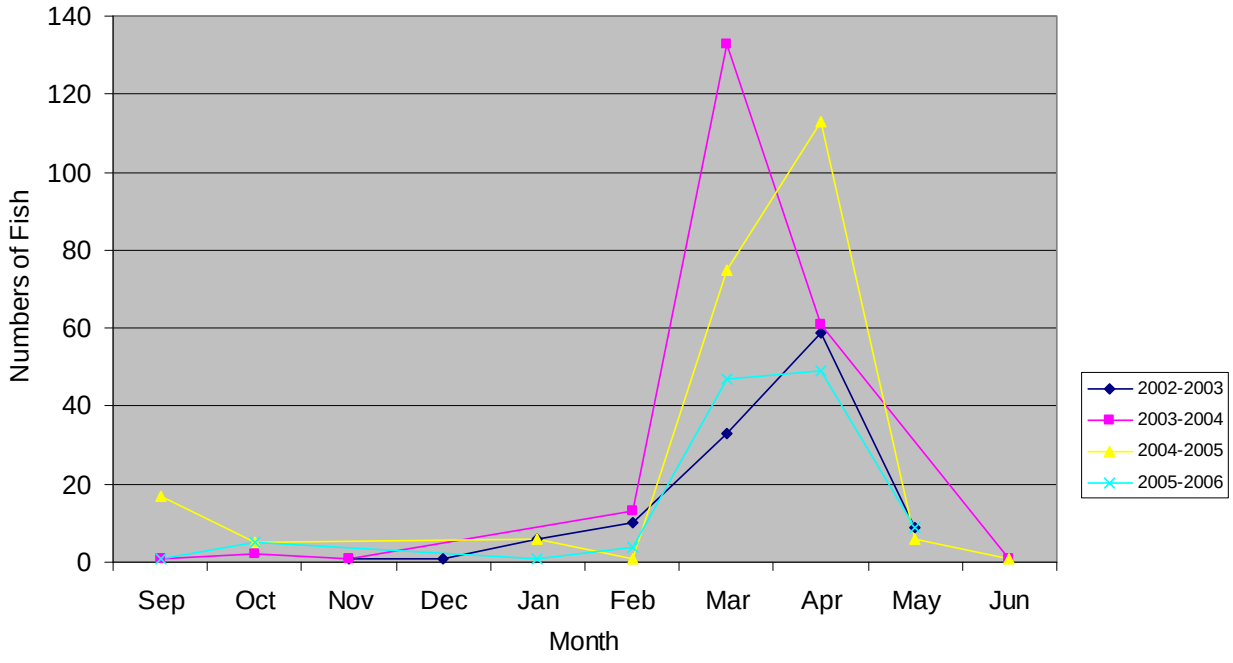

Figure 4. Timing of wild adult steelhead ascending Roza Diversion Dam, Yakima River, 2002 – 2006.

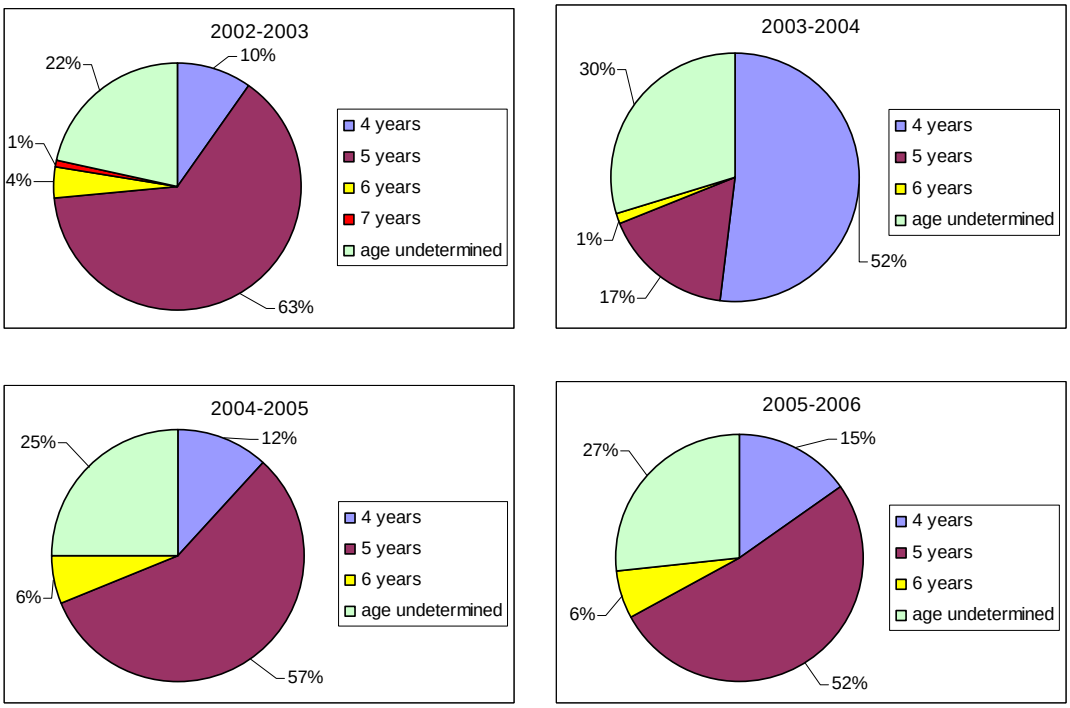

Figure 5. Age structure of wild adult steelhead passing Roza Diversion Dam, upper Yakima River, fall 2002 – spring 2006 (current year included).

Table 2. Length and weight of wild adult steelhead ascending Roza Diversion Dam, Yakima River, fall 2002 – spring 2006.

	Females			Males		
		POL[1] (cm)	Weight (kg)		POL[1] (cm)	Weight (kg)
Year	N	Mean (Range)	Mean (Range)	N	Mean (Range)	Mean (Range)
2002-03	103	57.2 (48 – 65)	3.3 (1.8 – 4.7)	15	59.5 (52 – 67)	3.7 (2.0 – 4.7)
2003-04	154	50.3 (43 – 62)	2.4 (1.5 – 5.3)	53	49.6 (44 – 55)	2.3 (1.6 – 3.5)
2004-05	160	55.5 (45 – 66)	2.9 (1.6 – 4.3)	39	55.5 (46 – 63)	3.1 (1.7 – 4.3)
2005-06	76	55.0 (48 – 65)	2.9 (1.9 – 4.4)	36	57.9 (45 – 69)	3.4 (1.8 – 5.1)

[1]POL = postorbital length

We tracked 353 active wild steelhead (98 tagged fish were lost to the study either to angler capture, tag regurgitation, or tag failure). Of these, most (98.9%) moved upstream following release, and 62.3 % moved into a tributary to spawn (Table 3). Highest tributary movements included about 32 km (20 miles) upstream in the North Fork Teanaway River, including lower Stafford, Standup, and Jack Creeks, at least 8.0 km (5 miles) upstream in the Middle and West Forks of the Teanaway River, about 32 km (20 miles) upstream Swauk Creek including lower Williams and First Creeks, about 14.4 km (9 miles) up Taneum Creek, the lower 6.4 km (4 miles) of Umtanum Creek, about 3.2 km (2 miles) in the Wilson-Cherry-Naneum Creek drainage, the lower Cle Elum River, and the lower Naches River including Cowiche Creek (Figure 6). No radiotagged steelhead were contacted in Manastash or Big Creeks. The most upstream mainstem movements were two females at the base of Easton Diversion Dam (Figure 6). Salmonids were observed on the Easton Diversion Dam fish ladder counter during this study, but steelhead were not differentiated (S. Hiebert, Bureau of Reclamation, personal communication). Of the mainstem spawners, most (73.3%) remained in the Yakima River between Roza and Town Ditch Diversion Dams. Four fish moved below Roza Diversion Dam immediately after tagging. Of these, two moved into the lower Naches River and Cowiche Creek and two were contacted infrequently in the mainstem Yakima River.

Table 3. Summary of wild adult steelhead spawning movements, upper Yakima River, fall 2002 – spring 2006.

Location of Presumed Spawning	Number of Radiotagged Steelhead	
Mainstem Yakima River[1]	133 (37.7%)	
Teanaway River	137 (38.8%)	
Swauk Creek	46 (13.0%)	Total
Taneum Creek	17 (4.8%)	Tributary
Cle Elum River	12 (3.4%)	(62.3%)
Lower Naches River, Umtanum, Cherry, Naneum, and Wilson Creeks	8 (2.3%)	
Total	353	

[1]Includes two fish that moved downstream below Roza Diversion Dam, Yakima River.

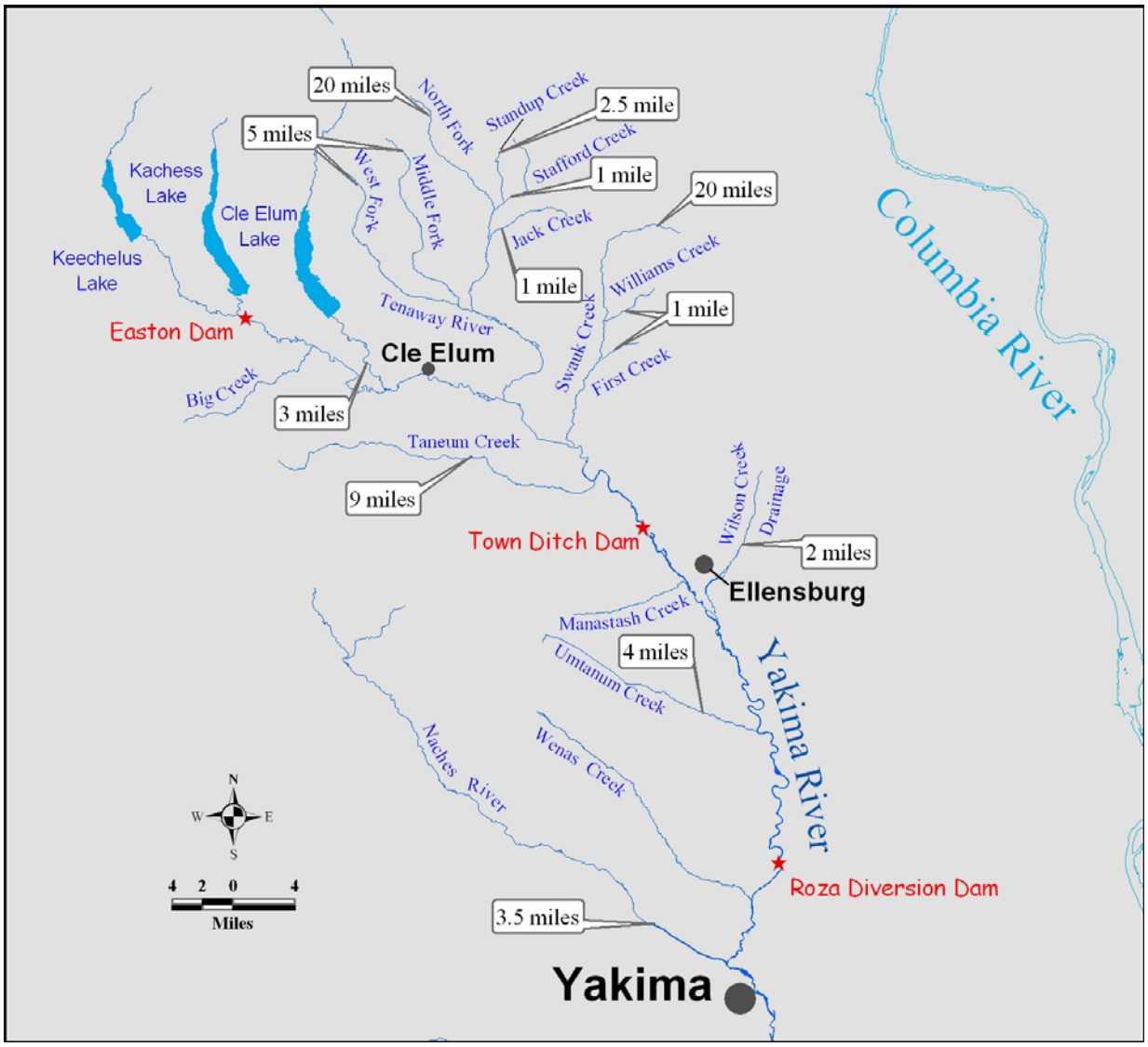

Figure 6. Upstream movements of radiotagged wild adult steelhead, Yakima River, fall 2002 – spring 2006.

All tracked fish exhibited a strong fidelity to a subbasin, there was no straying among tributaries. However, about 12% (13 males, 3 females) of the Teanaway system fish were located in more than one of the Teanaway forks (North, Middle, West) although they spent the majority of their time in one tributary. Presumed and observed spawning areas include the Teanaway River subbasin, the Swauk Creek subbasin, Taneum Creek, lower Cle Elum River, Wilson Creek (including Cherry and Naneum creeks), lower Naches River subbasin and the mainstem Yakima River.

The Teanaway River subbasin was the most heavily used tributary during the spawning season all years (39% of all tagged fish; Figure 7). Fish used the West (n=30), Middle (n=15), and North Forks (n=53) and the mainstem Teanaway River (n=56) for spawning. Four fish (three males, one female) were tracked into Stafford and Standup Creeks and

one female was observed on a redd about 1.6 km (1 mile) up Jack Creek. At least 20 pairings of radiotagged male-female pairs were located throughout the system and one pair was observed in the West Fork.

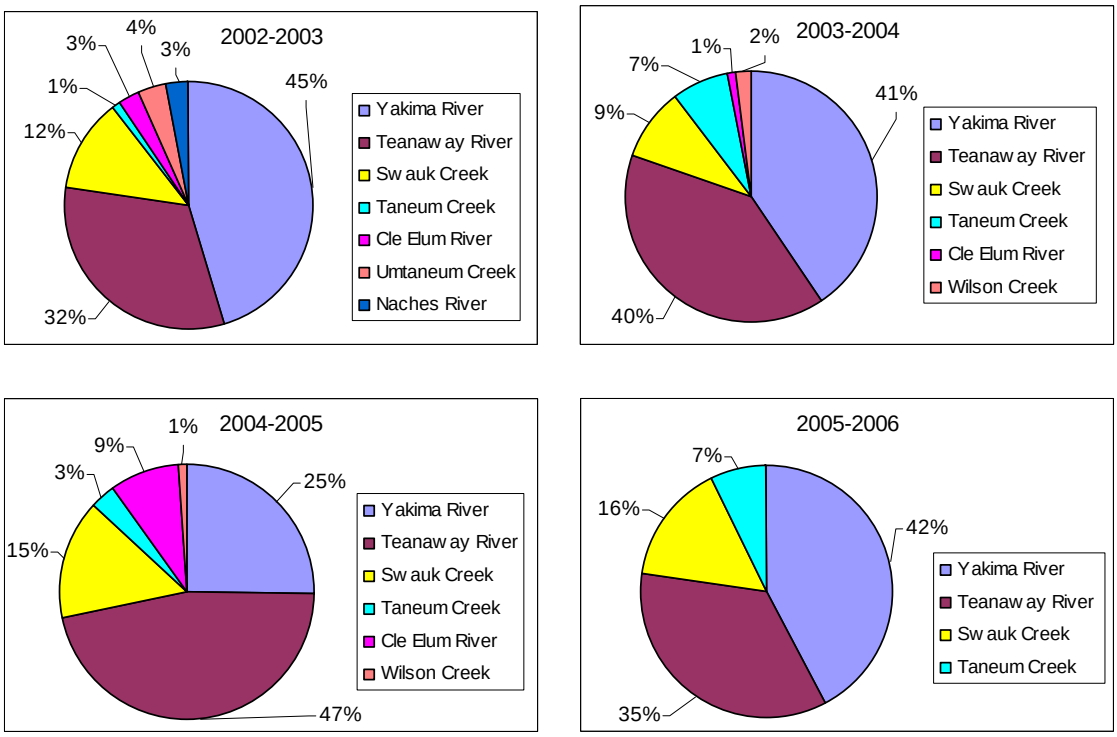

Figure 7. Distribution of active radiotagged wild adult steelhead during the spawning season, Yakima River, fall 2002 – spring 2006.

Swauk Creek was the second most heavily used tributary; 47 (46 radiotagged) steelhead were contacted there. One female that ascended the Roza Fish Trap in three consecutive years was radiotracked to the same reach in Swauk Creek (about 4.8 km, 3 miles, up from the mouth) in winter 2003 and winter 2004. About 67% of the Swauk fish used the lower 13 km (8 miles) for spawning. One female moved about 1.6 km (1 mile) up First Creek and a male was located the same distance in Liberty Creek. Twelve male-female pairs were radiotracked together and one pair (radiotagged female, untagged male) was observed about 6.4 km (four miles) upstream working a redd below a beaver dam.

A total of 17 radiotagged steelhead used Taneum Creek, some moving upstream at least to the Taneum Creek campground (about 14.4 km, 9 miles). Most (82.4%) ascended the Bruton Diversion (about 2.6 km, 1.6 miles, upstream from the mouth) and more than half of these moved above the Taneum (about 3.9 km, 2.4 miles) and Knudson Diversions (about 4.8 km, 3 miles). Three pairs of steelhead were observed together in the middle and upper reaches.

At least twelve wild steelhead used the lower few kilometers of the Cle Elum River, three fish were located in Umtanum Creek (including an Upper Yakima River kelt released

above Prosser Diversion Dam, T. Newsome, personal communication, Yakama Nation) and three others in the Wilson Creek subbasin (including Naneum and Cherry Creeks).

Migration rates ranged to 39.3 km/day (24.4 miles/day) for upstream movements and to 122.3 km/day (76 miles/day) for downstream movements (one female moved 236.6 km, 147 miles, downstream in the Columbia River in two days). Fish appeared to move upstream more during the night than day and when the river was turbid from runoff events.

Fish can move downstream at Roza Diversion Dam by going over and/or under the roller gates (depending on flow conditions) or passing through the juvenile fish bypass system. Each spring during this study, the west gate was tucked for one to nine day intervals to encourage the outmigration of adult and juvenile steelhead. At least 120 kelts (34% of the active tagged fish) successfully moved downstream through Roza Diversion Dam from March through May and, of these, at least 32% moved during gate manipulations (Appendix 2). A minimum of 31 kelts successfully migrated out to Bonneville Dam after spawning (11.4% of active tagged fish from spring 2003-2005; there was no Columbia River tracking in spring 2006 but seven 2005-06 kelts were last contacted in the lower Yakima River).

At least 12 kelts (1.8% of all upper Yakima wild steelhead; 11 females, 1 male) returned to the Upper Yakima River to spawn in 1+ years (one female in three consecutive years), most moving downstream at least to Bonneville Dam between years (seven kelts were recaptured and held in the Chandler Juvenile Fish Facility steelhead reconditioning program for the summer and released the following December, B. Bosch, Yakama Nation). These movements indicate that some steelhead are able to return through the Yakima and Columbia river corridors, for a minimum total swimming distance of 950 miles.

Conclusions

About 6.4% of the Yakima River steelhead moved to the upper system (above Roza Diversion Dam) to spawn from winter 2002-spring 2006. Most fish appeared in the Roza Fish Trap in March and April, usually following a runoff event. Once in the Roza Pool, fish were observed to wait for turbid conditions to resume upstream movement. Some fish moved quickly to a presumed spawning site while others took more time. Tagged steelhead first entered the Teanaway and Swauk subbasins in early-mid March but later into Taneum Creek (late March-April).

Upper Yakima River steelhead primarily used the Teanaway River, Swauk, and Taneum Creek subbasins, and the mainstem Yakima River between Roza Pool and Town Ditch Diversion Dam during the spawning season. The three subbasins contained a mix of pools, riffles, and runs with shaded margins for suitable spawning habitat (Figure 8). However, Umtanum and Wilson Creek subbasins were used infrequently and appeared less suitable for spawning due to silting, channelization, and passage barriers (including log and gabion structures).

Stafford Creek, Teanaway River

Spawning steelhead below a beaver dam, lower Swauk Creek

Upper Taneum Creek

Figure 8. Steelhead spawning habitat in the Teanaway, Swauk and Taneum subbasins, Yakima River.

We noted at least a 1.8% repeat spawning rate in the upper Yakima River basin. Of these, one female homed to the same reach in lower Swauk Creek in consecutive years. We located 35 male-female pairings on presumed spawning grounds in the three main tributaries (Teanaway River, Swauk and Taneum creeks).

Adult steelhead have to navigate a long series of dams, other smaller barriers, impoundments, angling and boating pressure etc., and although we tracked only a portion of the run each year, at least 34% of 353 actively moving kelts successfully moved downstream through Roza Diversion Dam.

Acknowledgements

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Appendix 1a. Summary of radiotagged wild steelhead data, Upper Yakima River, winter 2002-2003 (data are river mile from the mouth of the Yakima River (0) except for tributaries and the Columbia River, where 0 is the mouth of each system (Bon = Bonneville Dam, Dal = The Dalles Dam, JD = John Day Dam, McN = McNary Dam, Yak = Yakima River, Psr = Prosser Dam, Sny = Sunnyside Dam, Cherry Creek, Nac = Naches River, Umt = Umtanum Creek, Twd = Town Ditch Dam, Tan = Taneum Creek, Swk = Swauk Creek, First Creek, Tea = Teanaway River, NTea = North Fork Teanaway River, Stand = Standup Creek, WTea = West Fork Teanaway River, MTea = Middle Fork Teanaway River, CleE = Cle Elum Station; POL = postorbital length, FL = fork length).

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	11/26/02	12/10/02	12/12/02	1/8/03	1/21/03	1/31/03	2/3/03	2/4/03	2/5/03	2/6/03
1	F	r.2	55	65	6.173	128	128	128	128		127.9	127.9	127.5	127.5	
2	F	2.2	56	69	7.9				128	128	127.9	127.9	127.9	127.5	127.9
4	F	2.1	53.5	64	7.3						127.9		124.5		124
5	F	2.2	65	78.5	10.3						133	139	146	153.1	
6	M	r.2	62	78	4.4						128.5	132	135	137	138.8
7	F	2.1	49	59	4.6						128.5	131	132	132	133
8	F	2.1	57	70	8.1						127.9	138	141	141	141
9	F	2.1	48	58.5	4.8							127.9	128.4	130	132
10	F	r.1	51	61	5.6							127.9	128.4	128.8	128.9
12	F	2.2	63	76	8.8										
13	F	2.2	60.5	74.5	8.5										
15	F	2.2	60	73	7.5										
16	F	2.2	53	64	5.4										
17	F	r.2	59	71	7.1										
18	F	2.2	61	74	7.8										
20	F	2.2	60	73	8.8										
21	F	2.2	57	69	7.3										
22	F	2.2	60	72.5	8.3										
23	F	2.2	57	68.5	9										
24	F	r.2	57	69.5	6.7										
25	F	2.2	60	74	7.8										
26	F	2.2	57	69	6.8										
27	M	r.1	52	65	6										
29	F	2.1	51	62	5.7										
30	F	2.2	57	71	8.7										
31	F	r.2	56	69	6.8										
32	F	2.2	63	76	8.9										
33	F	2.2	58	71	7.3										
34	M	r.2	58	70.5	7										
36	F	2.2	63	76	9										
37	F	2.2	60	73	8.9										

Tag #	2/7/03	2/10/03	2/12/03	2/13/03	2/14/03	2/18/03	2/19/03	2/20/03	2/21/03	2/24/03	2/25/03	2/26/03	2/27/03	2/28/03
1	127.8				127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9
2	127.8	127.5	127.5	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9
4	122		122				127.5	127.4	127.4		127.3	127	126.7	
5	158.4		141	141	141	141	141	141	141	161.5 Twd	161.5 Twd	161.3	162	162
6	138	139.8	139.8	139.8	140.4		152.2						150.8	
7	133	131.7	132	133	134	138.8	134	133	133	132	132	132	132	132
8	141	146.1	146	146								143	141	138.5
9	132	132	131.7	131.7	131.7	131.7	131.7	131.7	131.7	131.7	131.7	131.7	131.7	131.7
10	130	128.4	128	128	128	128	128	128	127.9	128	128	128	128	128
12		127.5	127.5		127.9	128	128	127.9	130		136.7	136.7	136.7	136.8
13		127.5			127.9		127.9	127.9	127.9	127.9	128	128	128	
15							133	133	133	137	137	136.2	134	130
16							127.9	127.9	127.9	128	128	128	128	128
17							136.2	141	148.5	153.9				158
18							128	128	131.7		132	130	130	130
20							127.9		128	128	128	128		
21							131.7	131.7	131.7	135	135	135	134	134
22									127.9	136.2	136.2	136.2	136.2	136.2
23														
24														
25														
26														
27														
29														
30														
31														
32														
33														
34														
36														
37														

Tag #	3/1/03	3/2/03	3/3/03	3/4/03	3/7/03	3/8/03	3/10/03	3/11/03	3/12/03	3/13/03	3/14/03	3/15/03	3/16/03
1			127.9	127.9	127.9		127.9	127.9	127.9	127.9	128		
2			127.9	127.9	127.9		127.9	127.9	127.9	127.9	128		
4			126.7		5.5 Nac	5.5 Nac		103.8 Sny					
5			166.6	166.6	170.7		176.5		7.3 Tea	7.7 Tea	9.9 Tea		
6			150.8	153.1	142.8		127.9	132	133	134	133.5		
7			132	132	132		132						
8			127.9	127.9	127.9		127.9	127.9	127.9	103.8 Sny		47.1 Psr	6 Yak
9			131.7	131.7	131.7		131.7	131.7	131.7	131.7	131.7		
10			128	128	127.9		127.9	128	128	128	129		
12			141	142	149.5		148.9	153.1	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd
13			128	128	127.9		127.9	127.9	127.9	127.9	128		
15				131.7	133		136.2	144	148.9	151.8	154		
16			128	128	127.9		127.9	129.7	127.9	127.9	128		
17	161.5 Twd	161.5 Twd	161.5 Twd	162	166.8		169.5	169.9	2.2 Swk	161.5 Twd			
18			130	130	130		127.9		131.7	134	136		
20			137	139	148.9			151	151	161.5 Twd			161.5 Twd
21			136.5		138		138	139	140	139.8	139.6		
22			136.2	136.2	136.2		136.2	136.2	136.2	136.2	136		
23				127.9	140.3		151.7	161.5 Twd	164	168.9	169.9		
24				135			139	144	161.5 Twd	161.5 Twd	161.5 Twd		
25				130	139.5		147	151.7	159	161.5 Twd	161.5 Twd		
26				130	130		130	130	130	130	130		
27				127.9	148.9		152.2	158.7	161.5 Twd	165	168.4		1 Tea
29					130		133	140	151	158.5	161.5 Twd		
30					128		130	132	136.2	152.2	161.5 Twd		
31								127.9	131	131.7	132.5		
32									128	145	158.5		
33										135	137		
34									128	134			
36										128	143		
37											128		

Tag #	3/17/03	3/18/03	3/19/03	3/20/03	3/21/03	3/23/03	3/24/03	3/25/03	3/26/03	3/27/03	3/28/03	3/29/03	3/30/03
1	128	128	128	128	128		128			128	128		
2	128	128	128	128	128		128			128	128		
4													
5	13.2 NTea	14 NTea	15 NTea	15.5 NTea	15.5 NTea		17 NTea			13.7 NTea	13.7 NTea		176.5
6				127	127		127			128	127		
7													
8													
9	132	131.7	132	132	132		132			132	132		
10	129	128	128	129	129		128			129	129		
12	168.4		186	185.6						2.5 CleE	2.5 CleE	161.5 Twd	
13	128	128	128	128	128		128			128	128		
15	159.6	154.5	155.5	144.5	140.5		137			137	137		
16	128	128	128	128	128		128			128	128		
17					11.7 Swk		12 Swk			15 Swk	15.2 Swk		
18	145	146	146	146	148	161.5 Twd			1 Tea	4.2 Tea	4.7 Tea		
20	135.5	128		127	127		127						
21	4.4 Umt	4.9 Umt	4.3 Umt	4.4 Umt	4.2 Umt		4.2 Umt						
22	136	136	136	136	136		136			136	136		
23		2.7 Swk	2.7 Swk	2.8 Swk	10.9 Swk		4 Swk			3.7 Swk	161.5 Twd		
24		2.7 Swk	2.7 Swk	2.8 Swk	10.9 Swk		15 Swk			17.3 Swk	17.4 Swk		
25	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd					159	159.5		
26	130	130	130	130	130		130			130	130		
27	3.7 Tea	6.7 Tea	8.7 Tea	8.7 Tea	8.7 Tea		1.5 WTea			1.5 WTea	8.7 Tea		
29	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	168.4					3.2 Swk	3.3 Swk		
30	3.7 Tea	6.2 Tea	8.7 Tea	8.7 Tea	8.7 Tea		1.5 WTea			1.5 WTea	1.4 WTea	1 Tea	161.5 Twd
31	135.5	136	138.7	140.5	147		150.5			150.7	128		
32	1 Tea	2 Tea	2 Tea	3 Tea	5.7 Tea		10.7 Tea			11.7 NTea	13.7 NTea		
33	148	151.8	153.5	155.5	160	161.5 Twd	153.5		127.9	128			
34				4.4 Umt	4.9 Umt								
36					157.1			161.5 Twd	161.5 Twd		1 Tea	1 Tea	
37	139	143.6	148	151.5	153.5		161.5 Twd			159.5	159.5		

Tag #	3/31/03	4/1/03	4/2/03	4/3/03	4/4/03	4/5/03	4/6/03	4/7/03	4/8/03	4/9/03	4/10/03	4/11/03
1	127.9		128	128	128			128	128		128	128
2	127.9		128	128	128			128	128		128	128
4												
5	161.5 Twd	127.9	103.8 Sny			47.1 Psr						
6				127	127			127				
7												
8							292 McN					
9	132		132	132	132			132	132	132	132	132
10	128		129	129	129			129	129	129	129	129
12	127.9	127.9 - 103.8 Sny		47.1 Psr								
13	128		128	128	128			128	128	128	128	128
15	137		137	137	137			137	137	137	137	137
16	128		128	128	128			128	128	128	128	128
17	14 Swk	10 Swk	169.5	161.5 Twd				141.5		136	127.9	127.9
18			1 Tea	161.5 Twd - 127.9				103.8 Sny				
20				127	127			127				
21		2 Umt										
22	136		136	136	136			136	136	136	136	136
23	142.9	127.9	127.9	127	127			127	103.8 Sny			
24	19 Swk	19.5 Swk	19.5 Swk		16 Swk			169.5	168	161.5 Twd	148.2	146.2
25	159.4		159		147			140.5	140.5	140.5	141	141
26	130		130	130	130			130	130	130	130	130
27	12 NTea				8.7 Tea			0.5 WTea	1 WTea			
29	127.9	127.9 - 120						47.1 Psr				
30	137	127.9	103.8 Sny			47.1 Psr		6 Yak				
31	127.9		128	128	128			128	128	128	128	128
32	16 NTea	14.2 NTea	14.2 NTea		13.7 NTea			12.7 NTea	176.5	161.5 Twd	143.5	133
33				127	127			127				
34												
36			3.2 Tea		176.5		161.5 Twd		143.7	143.7		137
37	137.5											

Tag #	4/12/03	4/14/03	4/15/03	4/16/03	4/17/03	4/18/03	4/19/03	4/21/03	4/22/03	4/23/03	4/24/03	4/25/03	4/27/03	4/28/03
1		128	128						128	128	128			
2		128	128					128	128	128	128	128		128
4														
5														
6														
7														
8														
9		132	132	132	132	132		132	132	132	132	132		132
10		129	129	129	129	129		128	129	129	129	129		129
12														
13		128	128	128	128			128	128	128	128	128		128
15		137	137	137	137	137		137	137	137	137	137		137
16		128	128	128	128	128		128	128	128	128	128		129
17		127.9	127.9	127.9	127.9	127.9		127.9	127.9	127.9	127.9	127.9		127.9
18	6 Yak	292 McN												
20														
21														
22		136	136	136	136	136		136	136	136	136	136		136
23		47.1 Psr												
24		127.9	103.8 Sny	47.1 Psr	6 Yak									
25		141	141	141	140.5	140.5		141	140.5	140.5	140.5	140.5		140.5
26		130	130											130
27						1.5 WTea		1 WTea	1 MTea	11.7 NTea	11.2 NTea	11.2 NTea		7.7 Tea
29														
30	292 McN	292 McN				215.6 JD					191.4 Dal	191.4 Dal	191.4 Dal	
31			128						128	128	128	128		128
32	127.9		103.8 Sny			47.1 Psr	47.1 Psr							
33														
34														
36		137	137	137	137									
37														

Tag #	4/29/03	4/30/03	5/1/03	5/2/03	5/3/03	5/5/03	5/6/03	5/7/03	5/8/03	5/9/03	5/10/03	5/11/03	5/12/03	5/13/03
1		128					128							
2	128	128	128				128	128	128	128				
4														
5														
6														
7														
8		145.4 Bon												
9	132	132	132	132		132	131	131	131	132		132	132	
10	129	129	129	128		128	128	128		129			128	
12														
13	129	128	128	128		128	128	128	128	128			128	
15	137	137	137	137		137	137	137	137	137			137	
16	129	128	128	128		128	128	128	128	128			128	
17	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9		127.9	127.9	127.9
18														
20	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9		127.9	127.9	127.9
21														
22	136	136	136	136		136	136	136	136	136			136	
23														
24														
25	140.5	141	141	138		140	140	140	140	140			140	
26	130		130	130		130	130	130	130	130			130	
27	1 WTea	2 WTea						0.7 Tea	0.7 Tea	10.2 Tea	176.5		174	
29														
30														
31	128								128	128				
32														
33		128							128	128				
34														
36														
37														

Tag #	5/14/03	5/16/03	5/17/03	5/18/03	5/23/03	6/1/03	6/2/03	6/3/03	6/4/03	6/7/03	6/8/03	6/10/03	6/14/03	6/17/03
1														
2							128							
4														
5														
6														122
7														
8														
9		132					132							132
10		130					128							129
12														
13		128												
15		137												137
16		128					128							
17	127.9	127.9		127.9			127.9							128
18														
20	127.9	127.9		127.9			127.9	127.9	127.9	127.9	127.9	127.9	127.9	
21							128							
22		136												136
23														
24														
25		140					140							140
26		131					130							
27		169.5												169.5
29														
30														
31														
32														
33														
34							130	130						
36														
37			127.9		127.9	127.9		127.9	124	124				

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/13/03	3/14/03	3/15/03	3/16/03	3/17/03	3/18/03	3/19/03	3/20/03	3/21/03	3/22/03
38	F	r.2	59	71	8	128	130			132.5	132.5	133.5	134.5	137	
39	F	2.2	58	71	8.2		129				128		130	130	
42	M	2.2	60	75	9.3								127	127	
43	F	r.2	57	68	6.9						128	128	128	139	
44	M	2.2	62	80	10.4										
45	F	r.2	56	68.5	7.9							127	127	127	
46	F	r.2	55	67	6.4							128	128	130	
47	F	2.2	60	73	8.4								128	128	
48	F	3.1	48	60	5.1										
49	F	r.2	58	71	8.5										
50	F	r.2	58	71	7.5										
52	M	2.2	58	74	7.4										
53	F	2.2	56	65	6.4										
55	F	3.1	53	63	5.4										
56	F	4.2	63	74	8.9										
57	F	2.2	58	70	8										
58	F	3.2	55	65	6.4										
59	F	r.2	51	62	5.6										
62	F	2.1	57.5	68.5	6.6										
63	M	2.2	67	79	9.1										
65	M	2.2	63	76	8.6										
66	M	2.2	58	73	8.4										
67	F	2.2	61	74	7.6										
68	F	2.2	54	66	5.6										
69	F	2.2	60	73	8										
70	F	r.2	61	75	10.4										
71	F	2.2	59	71.5	8										
72	F	r.2	57	69	6.6										
73	F	2.1	51	62	4										
74	F	3.2	53	64	5.3										
75	F	2.2	57	70	7.7										
76	F	2.2	62	74	7.6										
77	F	2.2	56	68.5	6.7										

Tag #	3/23/03	3/24/03	3/25/03	3/26/03	3/27/03	3/28/03	3/29/03	3/30/03	3/31/03	4/1/03	4/2/03	4/3/03	4/4/03
38		140.5			143	147.5			159.4	161.5 Twd	157	150.5	147
39		135				135.5			137	127.9	103.8 Sny		
42		127											
43				1 Tea	6.7 Tea	8.7 Tea			8.7 Tea		7.7 Tea		8.7 Tea
44													
45	127.9	127.9	127.9	127.9	127.9	127.9	127.9			127.9		127	127
46		133.5			138.5	141				159	158.5		154.6
47					134.5	134.5				159	161.5 Twd	163	163
48		137			149.5						161.5 Twd	161.5 Twd	161.5 Twd
49		133.5			133.5	133.5			147.5	150		157	161.5 Twd
50		128			144.5	153		161.5 Twd	174.4	176.5	0.5 Tea		3.7 Tea
52		128			127	127			127.9		128	128	128
53					129				132		132.5	133	133.5
55									146		147.5	147.5	132.5
56											130	131	131
57											131	132	132.5
58											129	129	129
59											134.5	133.5	134.5
62											128	131	132.5
63											139	148.7	152.2
65											128	128	
66													
67													
68													
69													
70													
71													
72													
73													
74													
75													
76													
77													

Tag #	4/5/03	4/6/03	4/7/03	4/8/03	4/9/03	4/10/03	4/11/03	4/12/03	4/13/03	4/14/03	4/15/03	4/16/03
38			142	138.5	129	128	128			128	128	128
39	47.1 Psr											
42	3.5 Nac							103.8 Sny				
43	1 Tea		167	161.5 Twd	144.5	128	128			128	128	128
44												
45			127									
46					128							
47			171.5	1 Tea	3.7 Tea	6.7 Tea	7.2 Tea			8.7 Tea	8.7 Tea	8.7 Tea
48			161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd			161.5 Twd	161.5 Twd	161.5 Twd
49	161.5 Twd			158	158.5	158.5	158.5	127.9				103.8 Sny
50			4.7 Tea	4.7 Tea	9.7 Tea	13.2 NTea	12.2 NTea			4.7 Tea	172.5	161.5 Twd
52			128	128	128	128	128				128	128
53			133.5	138.5	146					161.5 Twd	168	169.9
55			128	127	128	128	128				128	128
56			134.5	128	128	128	128			128	128	128
57			133.5	134.5	142.5	145.5	147.4			161.5 Twd		157
58			133.5	137	139.5	138.5	133			130	130	130
59			134.5	134.5	134.5	134.5	134.5			134.5	134.5	132.5
62			132.5	132.5	145.5	145.5	144.5	127.9	103.8 Sny			47.1 Psr
63		161.5 Twd	168.5	173.5	179.5	179.5	179.5			179.8	179.8	179.8
65				103.8 Sny								
66			132	149.2		161.5 Twd	161.5 Twd			155.7	158	157
67					132.5	132				148.2	153.5	158.5
68					128	138.5	149			128	103.8 Sny	
69												
70					128	142.5	153		1 Tea	7.7 Tea	10.7 Tea	12.7 NTea
71												
72												
73												
74												
75												
76												
77												

Tag #	4/17/03	4/18/03	4/19/03	4/20/03	4/21/03	4/22/03	4/23/03	4/24/03	4/25/03	4/26/03	4/27/03	4/28/03	4/29/03
38	128	128			128	128	128	128	128				
39													
42													
43	128	128		128	128			128	128			128	
44													
45													
46													
47	8.7 Tea	8.7 Tea			1 Tea	161.5 Twd	143.5	128		103.8 Sny			
48	161.5 Twd	161.5 Twd			161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd			161.5 Twd	161.5 Twd
49													
50	160.5	152			131	128	128	128	128				
52						128	128	128	128			128	
53	2.1 Swk			161.5 Twd	155	140.5	128	129	128				
55		129				128	128		128			128	128
56	128	128			128	128	128	128	128			129	129
57	158	161.5 Twd	161.5 Twd		161.5 Twd	160	160	160.4	161.5 Twd			157	129
58	130	130			131	130	130	130	130			130	130
59	127.9								103.8 Sny				47.1 Psr
62	6 Yak												
63	179.8	179.8				179.3	179.5	179.5					179.5
65													
66	146.5	128			128		128		128			128	
67	161.5 Twd	161.5 Twd			1 Tea	2.5 Tea	2.5 Tea	3 Tea	3 Tea			3.8 Tea	3.8 Tea
68	47.1 Psr												
69													
70	14.7 NTea	15.2 NTea			18.6 NTea	18.7 NTea	18.7 NTea	14.2 NTea	176.5				128
71													
72													
73													
74													
75													
76													
77													

Tag #	4/30/03	5/1/03	5/2/03	5/3/03	5/4/03	5/5/03	5/6/03	5/7/03	5/8/03	5/9/03	5/10/03	5/11/03	5/12/03
38			128							128			
39													
42													
43													
44													
45													
46													
47		47.1 Psr											
48	161.5 Twd	161.5 Twd				161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd			161.5 Twd
49													
50													
52	128	128								128			
53													
55		128					128	128	128	128			
56	128	128	128			128	128	128	128	128			128
57													
58	128	130	130			130	130	130	130	130			130
59													
62													
63	179	177	179			179	179	179	179	179			
65													
66		128				128	128	128	128	128			
67	3.4 Tea	169.5	161.5 Twd			127.9	103.8 Sny						
68													
69													
70													
71		128	128				128	128	128	128			128
72	128		132			132	133.5	133.5	133.5	130			128
73		129	132			140	142	147	152.5	156.5		161.5 Twd	167.5
74		128	143				161.5 Twd	166	165.5	2.0 Swk			
75							146	159	161.5 Twd				
76						128	137	150	161.5 Twd	161.5 Twd	1 Tea		1.7 Tea
77						128		148.5	157.5	161.5 Twd		1 Tea	1 Tea

Tag #	5/13/03	5/14/03	5/15/03	5/16/03	5/17/03	5/18/03	5/19/03	5/21/03	5/22/03	5/23/03	5/25/03	5/27/03	5/28/03	5/29/03
38				128										
39														
42														
43														
44														
45														
46														
47														
48				161.5 Twd										
49														
50														
52														
53														
55														
56				128										
57											127.9			
58														
59														
62														
63														
65														
66														
67														
68														
69														
70														
71				128										
72														
73		1 Tea		3.7 Tea										
74														
75	128	128	128	128	128	128	128	128	128					
76	1 Tea	161.5 Twd			128									
77														

Tag #	6/1/03	6/2/03	6/3/03	6/4/03	6/7/03	6/8/03	6/10/03	6/14/03	6/15/03	6/16/03	6/17/03
38		128		128	128						
39											
42											
43		128									
44											
45											
46											
47											
48		161.5 Twd									
49											
50											116
52		128									116
53											
55											
56		128									
57											127.9
58		130									130
59											
62											
63											179
65											
66		128									
67											
68											
69											
70											
71		128									
72		128									
73	103.8 Sny	47.1 Psr	6 Yak		215.6 JD	215.6 JD	145.4 Bon				
74											
75											
76		118									118
77		161.5 Twd									161.5 Twd

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	4/9/03	4/10/03	4/11/03	4/12/03	4/13/03	4/14/03	4/14/03	4/15/03	4/16/03
78	F	2.2	63	75	8.6									
183	F	2.2	55	69	8.1		131	131.5			152.2		158.5	158.5
184	F	3.2	58	71	7.4	128							128	128
185	F	2.2	54	66	6.6		128	128			128		128	
186	F	2.2	57	71	7			128						
188	F	2.1	51	64	5.3		128	128			129		128	128
189	F	3.2	55	67	7.1		130	135.5			161.5 Twd		167	1.5 Swk
190	F	2.2	60	72	7.7	128	139	152.2	161.5 Twd	161.5 Twd	176.5	1 Tea	2.5 Tea	5.7 Tea
191	M	2.2	58	74	9	129	130	128			158.5		159.8	141.5
192	F	2.2	58	73	9.1	128	133.5	148.5	161.5 Twd	1 Tea	2.7 Tea		4.7 Tea	4.7 Tea
193	F	2.2	58	71	7.6	128	142.5		161.5 Twd	1 Tea	4.7 Tea		8.7 Tea	8.7 Tea
194	F	2.2	57	69	6.9		129						128	130
196	F	2.2	54	66	7.3		128	127.9	127.9	127.9	127.9		127.9	127.9
197	F	2.2	57	69	6.6		128	128			129		132	133.5
198	F	2.2	59	72	8									
199	F	2.1	56	70	7.6		129	144.5	161.5 Twd	161.5 Twd	1 Tea		5.2 Tea	11.2 NTea
200	M	2.2	60	75	8.4		129	129			130		129	129
201	F	2.2	57	70	7						133.5		134.5	134.5
203	F	r.2	54	66	6.1						1 Tea		1 Tea	1 Tea
204	F	2.2	61	73	7.5						161.5 Twd		0.75 Tea	4.2 Tea
205	M	2.2	55	70	6.7						133.5		127.9	
206	F	2.2	59	72	7.8								129	129
207	F	r.2	63	77	9.6						127.9			
208	F	r.2	54	66	6.6								137	138
209	F	2.2	64	78	10								130	138
210	F	r.2	58	71	7.7									128
211	F	2.2	61	73	8.6									
212	M	2.2	59	76	8.5									
5 B	F	2.1	55	68	6.7									
7 B	F	2.2	58	71	7.9									
12 B	M	r.2	61	78	9.6									
23 B	F	2.2	58	71	8.2									
29 B	F	2.2	56	69	6.9									
32 B	F	2.2	54	66	6.7									
34 B	F	2.2	55	68	7.3									
36 B	F	2.2	57	68	6.6									
68 B	F	2.2	57	70	7.6									
34 C	F	2.2	63	75	9.7									

Tag #	4/17/03	4/18/03	4/19/03	4/20/03	4/21/03	4/22/03	4/23/03	4/24/03	4/25/03	4/26/03	4/27/03
78											
183	158.5	158.5	161.5 Twd	1 Tea	3.5 Tea	7.7 Tea	7.7 Tea	8.7 Tea	8.7 Tea		
184	128	128			128	128		128	128		
185		128				128	128		128		
186					127.9	128	128				
188	128	128			128	128	128	128	129		
189		3.1 Swk			1 First Creek	9.1 Swk	9.6 Swk	163	142.5	127.9	
190	6.7 Tea	6.7 Tea			9.7 Tea	10.2 Tea	10.2 Tea	10.2 Tea	10.2 Tea		
191	129	128			128	128		128			
192	4.7 Tea	6.7 Tea			1 Tea - 161.5 Twd	155	140.5	128	128 - 127.9		103.8 Sny
193	6.7 Tea	2.7 Tea			8.7 Tea	0.75 Tea	161.5 Twd	158.5			
194		132			137	140.5	145		147.5		
196	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9	127.9
197	133.5	132.5			131	133.5	135	136	134.5		
198											
199	13.7 NTea	13.7 NTea			14.7 NTea	1 Stand	2.5 Stand	16.7 NTea	14.7 NTea		
200	132.5	133.5			133.5	133.5	133.5	133.5	133.5		
201		132			144.5	144.5		127.9	103.8 Sny		
203	161.5 Twd	161.5 Twd			139	134.5	133.5	128	128		
204	7.7 Tea	10.7 Tea					2 WTea	1.5 WTea	1 WTea		
205											
206						129	129	129	129		
207											
208	138.5	138.5			128	128		103.8 Sny			
209	144.5	147.5			149		131	128	127.9		
210		130			130	130	135	142.5	149		
211						146	156	161.5 Twd	162		
212							131	148.5	156	161.5 Twd	
5 B						130	131	131	132		
7 B						131	143.5	160.4	164		
12 B						128	145	159.5	161.5 Twd		
23 B						129	140.5	155	157		
29 B						128	128	128			
32 B						131	140	153	161.5 Twd	161.5 Twd	
34 B						137	144.5		152		
36 B							161.5 Twd	161.5 Twd	169.6		
68 B						129	147.5	159	161.5 Twd		
34 C											

Tag #	4/28/03	4/29/03	4/30/03	5/1/03	5/2/03	5/3/03	5/4/03	5/5/03	5/6/03	5/7/03	5/8/03	5/9/03
78									130	128	128	128
183	8.7 Tea	8.2 Tea	11.7 NTea	12.7 NTea	4.8 Tea			1 Tea	161.5 Twd			
184	128	128									128	
185	128							128		128	128	128
186	128											127.9
188	129	129	128	128	128			128	128	128	128	128
189	103.8 Sny			6 Yak								
190	161.5 Twd - 169.9	142.5	128	127.9	103.8 Sny			47.1 Psr				
191	128	128	128					128		128		
192												
193												
194	135	133.5	134.5	134.5								
196	127.9	127.9	127.9	127.9	127.9	127.9		127.9	127.9	127.9	127.9	127.9
197	129	129		128	128			128	128	128	128	128
198												
199	176	169.9	161.5 Twd	137	127.9	127.9	103.9 Sny		47.1 Psr			
200	133.5	133.5	133.5	133.5	133.5			133	133.5	133.5	133.5	133.5
201												
203	128	128							128		128	128
204	3.5 Tea - 176	176	176	176	176			176	172.5	172.5	172.5	176.5
205												
206	129	129		129	128			128	128	128		
207												
208	47.1 Psr											
209	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny
210	128	128										
211		6.5 Swk	3.1 Swk	3.6 Swk	3.6 Swk		161.5 Twd	128	128			
212	3.8 Tea	3.8 Tea	8.7 Tea	8.7 Tea	4.6 Tea			5.2 Tea	3.2 Tea	2.2 Tea	5.2 Tea	12.2 NTea
5 B	132	132	132	132	132			132	131	131	131	132
7 B	1.6 Tan	1.6 Tan	1.6 Tan	2.5 Tan	2.5 Tan			2.5 Tan	2.5 Tan	2.5 Tan	2.5 Tan	2.5 Tan
12 B	177.5	185.6	192	199	197			191		1 CleE	195	199
23 B	161.5 Twd	176	5.2 Tea	8.2 Tea	8.7 Tea			170.9	161.5 Twd	127	127	127
29 B	133.5	128	127.9	127	127	127	127	127	127	127	127	127
32 B		6.5 Swk	3.6 Swk	8.1 Swk	11.2 Swk			11.5 Swk	11.5 Swk	11 Swk	8.1 Swk	161.5 Twd
34 B	160											
36 B							161.5 Twd		127.9		128	128
68 B	176.5	176.5	1.0 Tea	176.1	176	161.5 Twd	128		127.9	103.8 Sny		47.1 Psr
34 C												

Tag #	5/10/03	5/11/03	5/12/03	5/13/03	5/14/03	5/15/03	5/16/03	5/17/03	5/18/03	5/19/03	5/21/03	5/22/03
78			154	161.5 Twd	161.5 Twd							
183	128	128	128	128							128	127.9
184							128					
185												
186	127.9							127.9	127.9			
188			128				128					
189												
190												
191			127.9									
192												
193												
194												
196	127.9	127.9	127.9	127.9	127.9		127.9	127.9	127.9	127.9	127.9	127.9
197			128				128					
198												
199												
200			133				133					
201												
203												
204			176.5				173.5					
205												
206							130					
207			127									
208												
209	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny		103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny
210												
211												127.9
212			4.5 Tea						1 Tea	161.5 Twd		
5 B			132				132					
7 B			2.5 Tan				2.5 Tan					
12 B		185.6	161.5 Twd									
23 B	127	127	128				127					
29 B	127	127	127	127	127	127	127	127	127	127	127	127
32 B			127.9				127.9					
34 B												
36 B							127.9					
68 B												
34 C			128			161.5 Twd	147.5	127.9				

Tag #	5/23/03	5/25/03	5/27/03	5/28/03	5/29/03	6/1/03	6/2/03	6/3/03	6/4/03	6/7/03	6/8/03	6/10/03
78												
183							128					
184												
185												
186									127.9			
188							128					
189												
190												
191							128					127.9
192												
193												
194												
196	127.9	127.9				127.9	127.9	127.9	127.9	127.9	127.9	127.9
197												
198												
199												
200							133					
201												
203												
204							172.5					
205												
206							128					
207							127					
208												
209	103.8 Sny	103.8 Sny				103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny
210												
211				127.9	127.9							
212			128									
5 B							132					
7 B							2.5 Tan					
12 B												
23 B							128					
29 B	127	127	127	127	127	127	127	127	127	127	127	127
32 B							127.9	127.9	127.9	127.9	127.9	127.9
34 B												
36 B												
68 B												
34 C												

Tag #	6/14/03	6/15/03	6/16/03	6/17/03	6/21/03	6/22/03	6/23/03	6/25/03
78				155				
183								
184								
185								
186								
188								
189								
190								
191		127.9	127.9		127.9			
192								
193								
194								
196	127.9	127.9	127.9	127.9	127.9	127.9		
197								
198								
199								
200				133				
201								
203								
204				175				
205				123				
206								
207				126.5				
208								
209	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny		103.8 Sny
210								
211								
212								
5 B				132				
7 B								
12 B								
23 B								
29 B	127	127	127	127	127	127	127	
32 B	127.9	127.9	127.9	127.9	127.9	127.9	127.9	
34 B								
36 B								
68 B								
34 C								

Appendix 1b. Summary of radiotagged wild steelhead data, Upper Yakima River, winter 2003-2004, (data are river miles from the mouth of the Yakima River (0) except for tributaries and the Columbia River, where 0 is the mouth of each system) (Bon = Bonneville Dam, Dal = The Dalles Dam, JD = John Day Dam, McN = McNary Dam, Yak = Yakima River, Psr = Prosser Dam, Sny = Sunnyside Dam, Ter = Terrace Heights Bridge, Che = Cherry Creek, Nan = Naneum Creek, Wilson = Wilson Creek, Twd = Town Ditch Dam, Tan = Taneum Creek, Swk = Swauk Creek, Will = Williams Creek, Tea = Teanaway River, NTea = North Fork Teanaway River, Staff = Stafford Creek, Stand = Standup Creek, WTea = West Fork Teanaway River, MTea = Middle Fork Teanaway River, CleE = Cle Elum Station; POL = postorbital length, FL = fork length)

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	2/2/04	2/3/04	2/4/04	2/5/04	2/6/04	2/9/04	2/10/04	2/11/04
3	M	r.1	48	59	4.4		128	128.5	128.5		130	130	130
5	F	3.1	53	64	5.1	128	129	129	129		129	129	129
7	F	2.1	51	61	5.9					128	132	132	132
8	F	r.1	50	61.5	5.5								
9	F	2.1	47.5	57.5	4.3								
10	F	2.1	49.5	59.5	5.2								
11	F	2.1	46	56	4								
13	F	2.1	47	57.5	4.3								
14	M		45	56	3.6								
15	F	2.1	44	54	3.2								
16	F	r.1s1	57	71	7.4								
17	F	r.1	49	59	4.8								
18	F	2.1	48	58	4.7								
19	M	r.1	55	70	7.8								
20	F	2.1	53	63	5.5								
21	M	2.1	49	59	4.6								
22	F	r.1	47	57	4.5								
23	M	2.1	45	58	3.5								
24	M	2.1	55	69	7								
25	M	2.1	50	61	4.8								
26	F	r.1	48	57	4.3								
27	M	2.1	47	59	3.9								
28	M	2.1	51	64	5.3								
29	F	r.1s1	56	70	7.6								
30	M	3.1	54	69	7.5								
31	M	r.1	50	64	5.5								
32	F	2.1	46	56	4.1								
33	F	3.1	48	58	4.3								
34	M	3.1	47	58	4.3								
35	M	2.1	49	61	5								
36	F	3.1	49	62	5.4								

Tag #	2/12/04	2/17/04	2/18/04	2/19/04	2/20/04	2/23/04	2/25/04	2/26/04	2/27/04	3/1/04	3/2/04	3/4/04	3/5/04	3/8/04
3	131.5	140.5	141.5	146.5			152.5	152.5	158	159.7	160	161.5 Twd	161.5 Twd	172
5	129	129	129	129	129	129	129	129	129	129	129	129	129	129
7	132	136.5	136.5	140.5	144	146					2 Che	2 Che	2.25 Che	
8		128	129	129		130	132.5	132.5	132.5	133	133	133.5		133.5
9		128		129	130	130	130.4	130.4	130.4	134.5	140.5	141	142.5	143.5
10				128	129	129	129	129	129	129	129	129	129	129
11				128	129	132	144	144.5	148.5	158	159	159	159	159
13					128	130	130	130	130.4	130	130	130	130	129.6
14							128	128	133		155.8	159.5	159.5	
15								128	130.4	130.6	130.6	130.6	130.6	130
16										128		133.5	133.5	133.5
17									128	133.5	133.5	133.5	133.5	133.5
18									128		131.5	132	132	132
19									128	152.5			160	169.6
20											128			138.5
21											128			137.5
22											128	129	129	129.6
23											128			129.6
24												128	131	131.5
25												128	133.5	134.5
26													128	129
27														128
28														128
29														128
30														
31														
32														
33														
34														
35														
36														

Tag #	3/9/04	3/10/04	3/11/04	3/12/04	3/15/04	3/16/04	3/17/04	3/18/04	3/19/04	3/22/04	3/23/04	3/24/04	3/25/04
3	1 Tea	2.5 Tea	4 Tea	7 Tea	170		1 Tea	1 Tea	1 WTea	2 WTea	2 WTea	2.5 WTea	1 WTea
5	129	129	129	129	129	129	129	129	129	129	129	129	129
7		136	129										
8	135.5	138	138	138.5	140.5	140.5	140.5	142.5	142.5	141.5	146	148.5	148.5
9		154.5	158	159	162	171.5	2 Tea	4 Tea	6 Tea	2 WTea	1 WTea	2.5 WTea	2 WTea
10	129	129	129	129	129	129	129	129	129	129	129	129	129
11	159	159	159	159	159	159	159	159	159	159	159	159	159
13	130	130	130	130	130	130	130	130	130	130	130	130	130
14		172	170			2.5 Swk	2.5 Swk	3 Swk	4 Swk	7.5 Swk		5 Swk	5 Swk
15	131	131.5	130	130	130	130	130	130	130	130	130	130	130
16	143.5		160	161.5 Twd	173	175.5	176	3 Tea	4.5 Tea		11 Tea	11 Tea	11 Tea
17	133.5	134	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133	133
18	139	145.5	147.4	147.4	147.5	148	148			152.5	159	161.5 Twd	
19	176	1 Tea		4.5 Tea	10 Tea	6 Tea	8 Tea	8 Tea	8 Tea	13 NTea	15 NTea	16 NTea	16 NTea
20	142.5	145	145	146.5				151.5					
21	148.5			171	6 Tea	7 Tea	11 Tea	11 Tea	7 Tea	9 Tea	12 NTea	12 NTea	12 NTea
22	134	141	148.5	152		145.5	136	128					
23	132.5		137.5	138.5	142.5	141.5	145	148.5		152.5	157	161.5 Twd	160
24	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131.5	131	131
25	146.5	153.5	157		170	6 Tea	6 Tea	2 Tea	1 WTea	11 Tea	11 Tea	2 WTea	3 WTea
26	129	129	129	129	136	138.5	140.5	142.5	143.5	143.5	144	142	142
27	134	147.4	155.8	157		168.5		179.5	179.5		179	179.5	179.5
28	133.5	140.5	148.5	157		164.5	1 Tea	3 Tea	4 Tea	7 Tea	8 Tea	11 Tea	11 Tea
29	141.5	154.5	161.5 Twd	161.5 Twd	170	175.5	3 Tea	7 Tea	8 Tea	13 NTea	15 NTea	16 NTea	17 NTea
30	128	134	141		147	147.5	147.5						
31	128	138		161.5	172	2 Tea	2 Tea	1.25 Tea	2 Tea	2 Tea	3.5 Tea	3 Tea	3 Tea
32	128		129	128	131.5	133.5	136	136	136	141	146		155
33	128	136	143.5	153.5		162	168.5	170	170	165.5	170	170	170
34	128	141	152.5	161.5 Twd	170	170.5	2 Tea	4 Tea	6 Tea	5 Tea	5 Tea	4.5 Tea	5 Tea
35	128	142.5	154.5	161.5 Twd	171							3 Swk	3 Swk
36	128	131.5	131.5	131.5	132	132	132	132	131.5	132	132	131	131

Tag #	3/26/04	3/29/04	3/30/04	3/31/04	4/1/04	4/2/04	4/5/04	4/6/04	4/7/04	4/8/04	4/9/04	4/12/04	4/13/04
3	1 WTea						2 WTea						
5	129	129	129	129	129	129	129	129	129	129	129	129	129
7													
8	149		156	156	159	159	165		175.5	2 Tea	3 Tea	3 Tea	3 Tea
9	2 WTea	9 Tea	172.5	165.5	148	145	128	128	128	129	127.9		113.2 Ter
10	129	129	129	129	129	129	129	129	129	129	129	129	129
11	159	159	159	159	159	159	159	159	159	159	159	159	159
13	130	130	130	130	130	130	130	130	130	130	130	130	130
14	5 Swk					6 Swk	9.1 Swk	10 Swk	1 Will Cr	1 Will Cr	10 Swk	11 Swk	
15	130	130	130	130	130	130	130	130	130	130	130	130	130
16	11 Tea	11 Tea	11 Tea			11 Tea	1 MTea	11 Tea	11 Tea	6 Tea	170	158	151
17	133	133	133	133	133	133	133	133	133	133	133	133	133
18	161.5 Twd	174.5	1.5 Tea			5 Tea	11 Tea	12 NTea	13 NTea	13 NTea		12 NTea	
19	15 NTea	12 NTea	12 NTea	8 NTea		12 NTea	1 MTea	11 Tea	1 MTea	11 Tea	1 WTea	1 MTea	2 MTea
20													
21	12 NTea	12 NTea		2 WTea						4 WTea	1 WTea	11 Tea	2 WTea
22													
23	157	156		166.5	174.5	4 Tea	13 NTea	14 NTea	12 NTea	9 Tea	7 Tea	128 - 113.2 Ter	103.8 Sny
24	131	131	131	131	131	131	131	131	131	131	131	131	131
25	3 WTea	1 WTea	1 MTea										
26	133				103.8 Sny								
27	179.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	180	181.5
28	11 Tea	1 WTea	11 Tea			1 WTea	1 MTea	1 MTea	1 MTea	1 MTea	1 MTea	1 WTea	1 WTea
29	16 NTea	16 NTea	3 Tea	170	151	128							
30						148							
31	4 Tea	2.5 Tea				1.5 Tea	2 Tea	2 Tea	171.5	163	163	163	163
32	156	159	159		161.5 Twd	164	173.5	176	4.5 Tea	7 Tea	9 Tea	13 NTea	15 NTea
33	170	170	170	170	170	170	170	170	170	170	170	170	170
34	6 Tea	4 Tea	4.5 Tea			7 Tea	7 Tea	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea	7 Tea
35	3 Swk	3 Swk	3 Swk		3 Swk		3 Swk	3 Swk		3 Swk	3 Swk	3 Swk	
36	131	131	131	131	131	131	131	131	131	131	131	131	131

Tag #	4/14/04	4/15/04	4/16/04	4/19/04	4/20/04	4/21/04	4/22/04	4/23/04	4/24/04	4/26/04	4/27/04	4/28/04
3		7 WTea										
5	129	129	129	129	129	129		129		129		
7		117.1										
8	4.5 Tea	4.5 Tea	6 Tea	6 Tea	6 Tea	172.5		143		128	127.9	
9	103.8 Sny								47.1 Psr			
10	129	129	129	129	129	129	129	129		129		
11	159	159	159	159	159	159	159	159		159		
13	130	130	130	130	130	130	130	130		130		
14	1 Will Cr	5.5 Swk	9.5 Swk	5.5 Swk	5.5 Swk	5.5 Swk	4 Swk					
15	130	130	130	130	130	130	130			130		
16	150	150	144	129		129	129	128		113.2 Ter - 103.8 Sny		
17	133	133	133	133	133	133	133	133		133		
18		12 NTea	12 NTea	135.5	133	130		128		128		127.9
19	1 MTea	1 WTea	1 MTea	1 WTea	1 WTea	1 WTea	1 WTea	1 WTea		9 Tea		
20		153						151.5				
21		5.5 WTea		4 WTea	4 WTea		4 WTea	4 WTea		3 WTea		
22		113.2 Ter										
23												
24	131	131	131	131	131	131	131	131		131		
25		6 WTea										
26											47.1 Psr	
27	186	186	2 CleE	2.5 CleE	2.5 CleE	3.5 CleE	2 CleE					
28	1 WTea	1 WTea		1 WTea	1 WTea	1 WTea	1 WTea	1 WTea		1 WTea		
29		127										
30												
31	163	163	163	163	163	163	163	163		163		
32	15 NTea	16 NTea	16 NTea	16 NTea	16 NTea	14 NTea	12 NTea	4.5 Tea		161.5 Twd		
33	170	170	170	170	170	170	170	170		170		
34	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea	4.5 Tea		6 Tea		
35		1 Swk	2.5 Swk				160.5			160.5		128
36	131	131	131	131	131	131	131	131		131		

Tag #	4/29/04	4/30/04	5/1/04	5/3/04	5/4/04	5/6/04	5/7/04	5/8/04	5/9/04	5/11/04	5/13/04	5/14/04
3												
5	129	129										
7												
8			103.8 Sny		47.1 Psr							
9												
10		129										
11	159	159										
13	130	130										
14								127.9				
15	130	130										
16	47.1 Psr											
17	133	133										
18		128										
19	176	176										
20												
21	7 Tea	6 Tea				161.5 Twd	127.9					
22												
23							6 Yak					
24	131	131										
25												
26												
27										185.6		
28	1 WTea	1 WTea										
29							127					
30							118					
31	163	163										
32	128 - 127.9			113.2 Ter - 103.8 Sny			6 Yak		292 McN	215.6 JD	191.4 Dal	145.4 Bon
33	170	170										
34	5 Tea	6 Tea										
35												
36	131	131										

Tag #	5/15/04	5/18/04	6/12/04	6/17/04
3				
5				
7				
8				
9				
10				
11				
13		130		
14				
15				
16				
17		133		
18				
19		176		176
20				
21				
22		113.2 Ter		
23				
24		131		
25				
26				
27				
28			127.9	
29		127		
30				
31		163		163
32				
33		170		170
34	128			
35				
36				

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/9/04	3/10/04	3/11/04	3/12/04	3/15/04	3/16/04	3/17/04	3/18/04	3/19/04
37	F	3.1	51	62	5.8	128	135.5	138	139.5	139.5	139.5	140.5	140.5	140
38	F	r.1	46	56	4.2	128	129			129	129	129		129
39	M	2.1	47	59	4.2	128	140.5	154.5	161.5 Twd	6 Tea	10 Tea	1.5 WTea	2 WTea	2 WTea
40	M	2.1	48	61	5	128	137.5	147.4		168	168.5	173.5	1Tea	2 Tea
41	F	3.1	49	60	4.5	128		129	128	128	128	128	128	128
42	F	r.1	51	61	4.8	128		137.5	146.5	161.5 Twd	168.5	174.5	2.5 Tea	2 Tea
43	F	2.1	49	60	5.1	128	136	145	152	157	161.5 Twd	165	165	165
44	M	2.1	49	60.5	4.6	128	138	152.5		171	2.5 Tea	6 Tea	7 Tea	10 Tea
45	F	2.1	46	56	4	128	132	136	139.5		154.5		161.5 Twd	161
46	F	2.1	51	61	4.8		128	131.5	131.5	131.5	131.5	131.5	131.5	132
47	M	2.1	52	65	5.7		128	138	145.5	154.5	157	157	155	155
48	M	r.1	53	66	6.2		128	129	129	129	129	129	129	
49	F	r.1	49	59	4.9		128	131.5	138.5	140.5	143.5			
50	M	2.1	48	61	4.6			128	130	130	130	129.5	130	130
51	M	2.1	49	61	4.8		128	131.5	136	139.5	140.5	143.5	143.5	143.5
52	F	r.1	45	55	3.9		128	129	128		129	129	129	129
53	F	3.2s	62	74	8.4		128	129	128	128	128	128	128	128
54	M	2.1	49	64	5.3		128	133.5	139.5	1 Wilson	1 Nan	2 Nan		
55	M	r.1	54	69	6.8		128	142.5	157		161.5 Twd	168.5	171	
56	M	2.1	50	64	4.8		128	130	133.5	138.5	143.5		152	152
57	F	2.1	48	59	4.9		128	133.5	139.5		140.5	155	155	155
58	M	2.1	46	57	3.8		128	134.5	146.5	169.6	1 Tea	4 Tea	6 Tea	7 Tea
59	F	2.2	60	73	8.5			128	131.5	134.5	139	146		152.5
60	F	2.1	54	65	6.1			128						
61	M	2.1	47	59	4.1			128	139.5			154	159	160
62	F	2.1	52	63	5.7			128	132	145		156	161.5 Twd	161.5 Twd
72	M	2.1	50	63	5			128	136		168.5	174.5	6 Tea	10 Tea
73	F	2.1	45	55	3.3			128	130	132	132.5	132.5	132.5	133.5
74	F	r.1	48	60	4.9			128	139.5					
75	M	2.1	46	58	4			128	130	130	130	130	130	130
76	F	r.2	62	76	10.2			128	148.5	180	177.5	177.5		
77	M	r.1	47	60	4.5			128	142.5	171	2 Tea	3 Tea	4 Tea	6 Tea
78	F	r.1	47	58	3.8			128	128				129	
79	F	2.1	43	53	3.3			128	129	129.5	129.5	130	132	132
80	M	r.1	44	56	4			128	142.5		161	160.5	161.5 Twd	160
82	F	2.1	47	58	4.2				128	142.5	148.5	155	159.5	161.5 Twd

Tag #	3/22/04	3/23/04	3/24/04	3/25/04	3/26/04	3/29/04	3/30/04	3/31/04	4/1/04	4/2/04	4/5/04	4/6/04	4/7/04
37	140	140	138	138	138	138	138	138					
38		128	129	129	129		129	129	129	129	129	129	
39						3 WTea	3 WTea	2 WTea					
40	9 Tea		9 Tea	9 Tea	9 Tea	11 Tea	11 Tea			11 Tea	11 Tea	12 NTea	12 NTea
41	128		128	128	128	128	128	128	128	128	128	128	128
42	7 Tea	11 Tea	13 NTea	15 NTea	14 NTea						6 Tea		
43	164	165	171.5	174.5	174.5	174.5				3 Tea	8 Tea	7 Tea	9 Tea
44	13 NTea	16 NTea	17 NTea	17 NTea	16 NTea	16 NTea	12 NTea					1 MTea	1 MTea
45	165.5			161.5 Twd	3 Swk		3 Swk			3 Swk		3 Swk	
46	131.5	131.5	131	131	131	131	131	131	131	131	131	131	131
47	158	159		159	159	159	159	159	159	159		159	
48	129	129	129	129	129	129	129	129	129	129			129
49	154	155	155	155	155								
50	130	130	130	130	130	130	130	130	130	130	130	130	130
51	143.5	144	142	142	143							168.5	1 Tea
52	128	128	129	129	129	128	128	128	128	128	129	129	
53	128	128	128	128	128	128	128	128	128	128	128	128	128
54	1.5 Nan	2.5 Nan	2.5 Nan	2 Nan	2 Nan	1.5 Nan	1.5 Nan				135.5	129	129
55	174	175.5	178.5				180.5		180	180	180	180	
56		162	172.5	3 Tea	7 Tea	15 NTea	16 NTea			16 NTea	15 NTea	15 NTea	14 NTea
57	143.5	132.5		129	129			129	129	129			129
58	9 Tea	12 NTea	12 NTea	12 NTea	14 NTea	15 NTea	15 NTea			15 NTea	14 NTea	14 NTea	15 NTea
59		170	174.5	176	176.5	180.5	180.5						
60													
61	161	170	174.5	174.5	174.5	174.5	4 Tea				13 NTea	12 NTea	13 NTea
62	168	172.5	173.5	172.5	171.5	170.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5
72			3 WTea	3 WTea	4 WTea					3 WTea			4 WTea
73	132.5	138.5	139	144	149	156		161.5 Twd	161	161	173.5	1 Tea	2 Tea
74	151.5	152					140	129	129	129			128
75	130	130	130	130	130	130	130	130	130	130	130	130	130
76				144		129	129	129	128	130	128	128 - 129	130
77	4 Tea	7 Tea	4.5 Tea	3 Tea	4 Tea	4 Tea	4 Tea			4 Tea	4 Tea	4 Tea	4.5 Tea
78					129			129	129	129	129	129	128
79	132.5	133.5	136	136	136	136	136	138	138	138			156
80			160.5		166	1.5 Tan			2 Tan	2 Tan	2 Tan	2.5 Tan	4.5 Tan
82	165.5	179	179.5	179.5	179.5	179.5	179.5	179.5	179.5	170.5	142	142	138

Tag #	4/8/04	4/9/04	4/10/04	4/11/04	4/12/04	4/13/04	4/14/04	4/15/04	4/16/04	4/18/04	4/19/04	4/20/04
37												
38								129			128	128
39					4 WTea	4 WTea	4 WTea	4 WTea			5 WTea	5 WTea
40	13 NTea	13 NTea			12 NTea	13 NTea	12 NTea	14 NTea	14 NTea		14 NTea	14 NTea
41	128	128			128	128	128	128	128		128	128
42	131	128				113.2 Ter - 103.8 Sny		6 Yak				
43	11 Tea	12 NTea			13 NTea	13 NTea	14 NTea	14 NTea	14 NTea		15 NTea	15 NTea
44	1.5 MTea	1.5 MTea			4 MTea	8 MTea	8 MTea	7.5 MTea	8 MTea		8.5 MTea	9 MTea
45	3 Swk					3 Swk		2 Swk	3 Swk			
46	131	131				131	131	131	131		131	131
47	159	157			138	128	128	128	128			
48	129	129			129	129	129	129	128		129	128
49					131	128				103.8 Sny		
50	130	130			130	130	130	130	130		130	130
51	3 Tea	7 Tea			1 WTea	3 MTea	4 MTea	4 MTea	1 MTea		2 MTea	1 MTea
52	129	129			129	129	129	129	128		129	129
53	128	128			128	128	128	128	128		128	128
54	129	129			129		129	129	129		128	128
55	180	180			180	180	180	180	180		180	177.5
56	15 NTea	16 NTea				19.5 NTea	17 NTea	16 NTea	18 NTea		19.5 NTea	1.1 Staff
57		129				113.2 Ter	103.8 Sny					
58	15 NTea	9 Tea			11 Tea	15 NTea	15 NTea	15 NTea	16 NTea		16 NTea	15 NTea
59		156	127.9	113.2 Ter				106.6				
60								127				
61	13 NTea	14 NTea			14 NTea	15 NTea	14 NTea	13 NTea	14 NTea		15 NTea	16 NTea
62	171.5	171.5				152.5	146	145	145		145	145
72	4 WTea	4 WTea			4 WTea	4 WTea	4 WTea	4 WTea	4 WTea			2 WTea
73	3 Tea	3 Tea			3 Tea	6 Tea	5 Tea	5 Tea	5 Tea		164	
74		128			128	128	128	128			128	128
75	130	130			130	130	130	130	130		130	130
76	128	113.2 Ter - 103.8 Sny							47.1 Psr			
77	4.5 Tea	4 Tea			4.5 Tea	4.5 Tea	4.5 Tea	4.5 Tea	5 Tea		4.5 Tea	4.5 Tea
78	129	129			128		129	129	128		128	128
79					1 Tea	4.5 Tea	9 Tea	1 WTea	2 WTea		5 WTea	5 WTea
80	4 Tan	4 Tan			4 Tan	4 Tan	4 Tan	4 Tan	4 Tan		4 Tan	3.5 Tan
82	128	128				113.2 Ter - 103.8 Sny						

Tag #	4/21/04	4/22/04	4/23/04	4/24/04	4/26/04	4/27/04	4/28/04	4/29/04	4/30/04	5/1/04	5/2/04	5/3/04
37												
38	129				129			129	129			
39	5 WTea		4 WTea						4 WTea			
40	14 NTea	14 NTea	161.5 Twd	128	127.9							
41	128	128	128		128			128	128			
42												
43	17 NTea	15 NTea	14 NTea		163		127.9				113.2 Ter - 103.8 Sny	
44	9 MTea	2 MTea	2 MTea		2 MTea		127.9					
45								3 Swk	3 Swk			
46	131	131	131		131			131	131			
47												
48	129		129		129			129	129			
49												
50	130	130	130		130			130	130			
51	1 MTea	1 MTea	1 MTea		11 Tea			176	166			
52	129	129	129		128			129	129			
53	128	128	128		128			128				
54	128	128	128		128			129	129			
55	177		154									
56	2.1 Staff	1.5 Staff	1 Stand		17 NTea			19 NTea	17 NTea			
57	47.1 Psr			6 Yak			292 McN					215.6 JD
58	14 NTea	14 NTea	17 NTea		17 NTea			17 NTea	16 NTea			
59												
60						127						
61	14 NTea	15 NTea	15 NTea		14 NTea			17 NTea	15 NTea			
62	145		146.5		129			128	128			
72	4 WTea				3 WTea			5 WTea	2 WTea			
73		147.5	146				103.8 Sny			47.1 Psr		6 Yak
74	128		128		129			128	128			
75	130	130	130		130			130	130			
76												
77	4.5 Tea	4.5 Tea	3 Tea		3 Tea		161.5 Twd	128 - 127.9				
78	129	129	129		128			129	129			
79	2 WTea	2 WTea	2 WTea		6 Tea			5 Tea	4.5 Tea			
80	3.5 Tan	4 Tan	3 Tan		128			128	128			
82	47.1 Psr											

Tag #	5/4/04	5/5/04	5/6/04	5/7/04	5/8/04	5/9/04	5/11/04	5/12/04	5/13/04	5/14/04	5/15/04	5/18/04
37												138
38												
39				113.2 Ter - 103.8 Sny				47.1 Psr				
40												
41												
42					292 McN			215.6 JD	145.4 Bon			
43			6 Yak		292 McN		215.6 JD	191.4 Dal	145.4 Bon			
44												
45												
46												131
47												
48												129
49												
50												
51												164
52												
53												
54												129
55												127
56									161.5 Twd	127.9	103.8 Sny	
57	145.4 Bon	145.4 Bon										
58												
59				106								106
60				127								127
61												
62				127								127
72							1 Tea		161.5 Twd			
73		292 McN		215.6 JD	145.4 Bon	145.4 Bon						
74												
75												
76												
77				127								
78												
79												
80				127								
82												

Tag #	5/19/04	5/26/04	5/27/04	5/28/04	6/17/04
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					164
52					
53					
54					
55					
56					
57					
58					
59					
60					
61		1 Tea	161.5 Twd	128	
62					
72	127.9				
73					
74					
75					
76					
77					
78					
79					
80					
82					

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/15/04	3/16/04	3/17/04	3/18/04	3/19/04	3/22/04	3/23/04	3/24/04	3/25/04
83	F	r.1	49	59	4.4	129	129	129	129	129	129	129	129	129
84	F	2.1	49	60	4.9	134.5	136.6	142.5	147.5	146.5	130 - 141.5	134.5	134	134
85	M	2.1	44	57	3.8		161		166	166				
86	M	2.1	52	66	6.7	148.5	150.5	157	161.5 Twd	161	164		167	168.5
87	M	2.1	54	69	6.9	145	145	145	146.5	153.5	168	174.5	4 Tea	7 Tea
88	F	r.1	49	60	4.9		132	132	132	132	132.5	133.5	137	137
89	F	2.1	47	59	4.7	129	129	129	129	129	129	129	129	129
90	F	2.1	46	55	3.7	138.5	141.5	141.5	142.5	143.5	146.5		152	152
91	F	3.1	47	58	4.4	128	130	131.5	132.5	134.5	138.5	145	150	
92	F	3.1	49	60	4.8	128	128	128		128	128	128	128	128
93	M	2.1	50	64	5.8	128	141.5		161.5 Twd		164		168.5	168.5
94	M	2.1	50	63	5.3	128	135	141.5		157	162.5			
95	F	3.1s1	55	67	6.5	128	129	129	130	130		131.5	133	133
96	F	2.1	47	58	4.9	128	129.5	132.5	134.5	136	136.5	142	144	148.5
97	F	3.1	46	57	3.8	128	133.5	146		161				
98	F	r.1	46	57	4.2	128		129.5	131.5	131.5		135.5	136	137
99	F	2.1	52	63	5.8	128	131.5	134.5	136	139.5	138.5	140	138	138
100	F	2.1	53	64	5.8	128	131.5	140.5	150.5			161	168.5	175.5
101	F	r.1	51	61	5	128	139	148.5	156		168	174.5	2 Tea	2 Tea
102	F	r.1	49	60	5.1	128	129.5	130	131.5	133.5	135.5	138.5	137	137
103	M	2.1	52	67	5.7	128	130	132	136	142.5	140	132	130	131
104	F	2.1ss	57	71	11.6	128	138.5	147.5	152.5	154	161			
105	F	r.1	50	61	5	128			128	128	128	128	128	128
106	F	2.1s	55	69	7.1		128	129.5	137.5	141.5	145.5			157
107	F	2.1	51	63	6.1		128	132.5	132.5	132.5	132.5	132.5	132	132
108	F	r.1	55	68	8.1		128	129	146.5	154	161	168	167	170.5
109	F	2.2	55	66	5.1		128	136.5	139.5	142.5	146.5		150	152
110	F	2.1	49	59	4.4			128	129		130	130	131	133
111	F	2.1	49	59	4.6			128	131.5	132	136.5	142	143	144
112	F	2.1	51	62	5			128	133.5	137.5	142.5			148.5
132	F	2.1	51	63	5.8			128	132.5	133.5	140		155	154
133	F	3.1	50	62	5.2			128		128	142.5			160.5
134	M	2.1	53	66	5.5			128	129	130		129	129	129
135	F	r.1	48	58	4.4			128		131.5	131.5	136.5	139	139
136	F	2.1	45	56	3.2			128	132.5	132.5	132.5	136.5	136	136
139	F	3.1	48	59	4.5			128	130	129	129	129	130	130

Tag #	3/26/04	3/29/04	3/30/04	3/31/04	4/1/04	4/2/04	4/5/04	4/6/04	4/7/04	4/8/04	4/9/04
83	129	129	129	129	129	129	129	129	129		129
84	134	129	129			129	128	128			128
85	5.5 Tan	2.5 Tan			2.5 Tan	2.5 Tan	2 Tan		5 Tan	4 Tan	5 Tan
86		170.5	171.5	171.5	171.5	171.5	170.5	171.5	171.5		1 Swk
87	9 Tea	9 Tea	9 Tea			7 Tea	7 Tea	9 Tea	9 Tea	11 Tea	9 Tea
88	137	140	149	149		149	161	161.5 Twd	170	170	170
89	129	129	129	129	129	129	129		129		129
90	152	160.5	160.5	160.5	161	161	161	160.5	160.5		160.5
91		155	155	155	155	155					
92	128	128	128	128	128	128	128	128	128	128	128
93	166	167				0.5 Tan	165	2.5 Tan	2.5 Tan	4 Tan	3.5 Tan
94			3 Swk			5 Swk		3 Swk	5 Swk		3 Swk
95	133	133	133.5		135.5	135.5		155	161.5 Twd	169.5	176
96	148	150.5	155	155	155	157	159		159		159
97	5.5 Tan		8.5 Tan		8.5 Tan	9 Tan	165	144	127.9		103.8 Sny
98	137	139	142	148	148	147.5		168.5	176	4 Tea	
99	138	138	138	138	138	138	138	138	138		138
100	176.5	182.5	182.5	183	183	183	135				
101	2 Tea	1.5 Tea	1.5 Tea			1.5 Tea	141	128	128	113.2 Ter - 103.8 Sny	
102	137	137	137	137	137	137	141	143.5	148		157
103	131	129			129	129	129	129	129	128	129
104		3 Swk	3 Swk			163	128	129	128		
105	128	128	128	128	128	128	128	128	128		128
106	157		161.5 Twd	161.5 Twd	162	162	168.5			164	164
107	132	129	129	129		129		128	128		128
108	172.5		171.5	161.5 Twd	148	136.5		113.2 Ter - 103.8 Sny			
109	152	159	161.5 Twd			164	1 Tan	1.5 Tan	1.5 Tan	1.5 Tan	1.5 Tan
110	141	168.5	172.5	176.5	176.5	176.5	168.5	160.5	141		113.2 Ter
111	144							161.5 Twd	170	1 Tea	2 Tea
112	149			149	149	149	149		149		
132	154		172.5	176		6 Tea	1 MTea	1 MTea	1 MTea	1 MTea	1 MTea
133	161.5 Twd	176	181.5	181.5	181.5	181.5			201	201	201.9
134	129			129			129	129		129	129
135	140			165.5	163	165	165	166	166		1.5 Tan
136	136	139	140	148					137		
139	130	140				159	170	170	2 Swk		1 Swk

Tag #	4/10/04	4/11/04	4/12/04	4/13/04	4/14/04	4/15/04	4/16/04	4/18/04	4/19/04	4/20/04	4/21/04	4/22/04	4/23/04
83			129	129	129	129	129		129	129	129	129	129
84			128		128	129	128		128	128			
85			8 Tan	8 Tan	9 Tan	6.5 Tan	6.5 Tan		8.5 Tan	9.5 Tan	8.5 Tan	6 Tan	4.5 Tan
86			1 Swk	1 Swk	171.5	1 Swk	3 Swk			2.5 Swk	161.5 Twd	154	
87			9 Tea	8 Tea	7 Tea	9 Tea	7 Tea		8 Tea	9 Tea		9 Tea	9 Tea
88			5 Swk	11 Swk	11 Swk	10.5 Swk	10.5 Swk		10.5 Swk	10.5 Swk	10.5 Swk	10.5 Swk	10.5 Swk
89			129	129	129	129	129		129	129			129
90			160.5	160.5	160.5	160.5	160.5		160.5	160.5	160.5	160.5	160.5
91													
92			128	128	128	128	128		128	128	128	128	128
93			2.5 Tan	3.5 Tan	2.5 Tan	2 Tan	3.5 Tan						127.9
94			9 Swk	11 Swk	10.5 Swk	10.5 Swk	10.5 Swk		10.5 Swk	10.5 Swk	10.5 Swk	10.5 Swk	9.5 Swk
95			12 NTea	13 NTea	14 NTea	16 NTea	17.5 NTea		19.5 NTea	1.1 Staff	2.1 Staff	1.5 Staff	1 Stand
96			133	134	134	134	134		134	134	134	134	
97													
98			10 Tea	10 Tea	11 Tea	11 Tea	10 Tea		170.5	154	143	141	141
99			128			103.8 Sny							
100				113.2 Ter	103.8 Sny				47.1 Psr				
101						47.1 Psr			6 Yak			292 McN	
102			159	159	159	159			135.5	135.5	135.5	135.5	135.5
103			129		129	129							129
104						103.8 Sny			103.8 Sny				
105			128	128	128	128	128		128	128	128	128	128
106			164	164	164	142	129		129			129	129
107			113.2 Ter	47.1 Psr	6 Yak		292 McN		215.6 JD				
108		6 Yak					292 McN	145.4 Bon					
109			1 Tan	1 Tan	1 Tan	1 Tan	1 Tan		154	133			
110	103.8 Sny											6 Yak	
111			3 Tea	4.5 Tea	5 Tea	3 Tea	3 Tea		3 Tea	172.5	153	133	129
112													
132			2 MTea	2 MTea	2 MTea	2.5 MTea	10 Tea		164	159	153	153	152
133			201.9	201	201	201	201		145	134		129	130
134					129	129	129		128	128	129	129	129
135			2.5 Tan	2.5 Tan	2 Tan	1.5 Tan			140	130		128	128
136						114.4							
139				4 Swk	5 Swk	5 Swk	5 Swk				10.5 Swk	11.5 Swk	15.5 Swk

Tag #	4/25/04	4/26/04	4/27/04	4/28/04	4/29/04	4/30/04	5/2/04	5/3/04	5/4/04	5/5/04	5/6/04	5/7/04
83		129			129	129						
84					129	128						128
85		5 Tan			5 Tan	10.5 Tan						161.5 Twd
86												
87		9 Tea			7 Tea	4.5 Tea						
88		10.5 Swk			10.5 Swk	10.5 Swk						
89						129						
90		160.5			160.5	160.5						
91												
92		128				128						
93												
94		3 Swk			10.5 Swk	10.5 Swk						
95							161.5 Twd			127.9	103.8 Sny	
96		128		113.2 Ter - 103.8 Sny					6 Yak			
97												
98		128	127									
99									47.1 Psr			6 Yak
100												
101	215.6 JD				145.4 Bon							145.4 Bon
102		135.5		113.2 Ter	103.8 Sny				47.1 Psr			6 Yak
103		129				129						
104												
105						128						
106		128				128						
107		145.4 Bon	145.4 Bon									
108												
109												107
110												
111		129				128						
112												
132		137			113.2 Ter			103.8 Sny			47.1 Psr	
133												
134		129			129	129						
135		128			128	128						127
136												
139		16.5 Swk			3 Swk	166						113.2 Ter - 103.8 Sny

Tag #	5/8/04	5/9/04	5/11/04	5/12/04	5/13/04	5/14/04	5/15/04	5/16/04	5/18/04	5/19/04	5/20/04	5/21/04	5/22/04	6/17/04
83														
84														
85														
86														
87									169					169
88				47.1 Psr										
89														
90														
91														
92														
93														
94		161.5 Twd												
95	47.1 Psr	6 Yak	292 McN											
96			292 McN			215.6 JD				191.4 Dal	145.4 Bon	145.4 Bon		
97														
98														
99				215.6 JD		191.4 Dal	145.4 Bon							
100														
101														
102			292 McN		215.6 JD	191.4 Dal		145.4 Bon						
103									129					
104														
105														
106														
107														
108														
109														
110														
111														
112														
132														
133														
134														
135														
136														
139				6 Yak			292 McN			191.4 Dal			145.4 Bon	

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/17/04	3/18/04	3/19/04	3/22/04	3/23/04	3/24/04	3/25/04	3/26/04	3/29/04
140	F	2.1	46	55	3.5	128	130		129	129	130	129	130	130
141	F	2.1	51	62	5.3		128							
142	F	r.1	50	61	4.9		128	128	136.5	143	144	145	145	145
143	F	3.1	58	71	7.4		128	133.5	141.5		152	154		159
144	F	2.1s1	57	69	7.3		128	128	136	136.5	141	142	141	142
145	F	2.1	48	58	4.3		128	130	130	130	130	130	130	130
146	F	r	47	58	4.3		128	132	148.5		161.5 Twd	167	171.5	3 Tea
147	F	r.1	49	62	5.2		128	128	134.5	143		154		160.5
148	F	2.1	49	59	4.5		128	132.5	141			160.5	160.5	1.5 Swk
149	F	2.1	51	62	5.8			128		135.5	143	148.5	148	148
150	F	2.1	49	60	4.9			128		130		131	131	131
151	F	r.1	57	68	7			128	129	140	140			
183	F	2.1	49	60	5			128	128	128		128	128	128
184	M	r.1	48	60	4.5			128	141	144	142	142	142	142

Tag #	3/30/04	3/31/04	4/1/04	4/2/04	4/5/04	4/6/04	4/7/04	4/8/04	4/9/04	4/10/04	4/11/04	4/12/04
140	129	129	129	129	129		129	129	129			129
141	113.2 Ter				103.8 Sny							47.1 Psr
142	152	155	155		176	3 Tea	4.5 Tea	7 Tea				7 Tea
143			161.5 Twd		155	156	159	159	135			
144	142	142	142	142			166	1 Tan	2 Tan			2.5 Tan
145	130	130	130	130	130	130	130	130	130			130
146				2 Tea	2 Tea	2 Tea	2 Tea	164			128	127
147	161.5 Twd	161.5 Twd		168.5	171.5	171.5		145	135.5	128	127	127
148				5 Swk	3 Swk	3 Swk		155	141	128 - 127	113.2 Ter - 103.8 Sny	
149	148	148	148	148	148	148	148	148	148			148
150	131	131	131	131	135.5	136	140		156			171.5
151	168.5	175.5		4.5 Tea		2 WTea	1 MTea	1 MTea	1 WTea			1 WTea
183	128	128	128	128	128	128	128	128	128			128
184	142	142	142	142	142	155	163	170.5	1 Tea			6 Tea

Tag #	4/13/04	4/14/04	4/15/04	4/16/04	4/19/04	4/20/04	4/21/04	4/22/04	4/23/04	4/25/04	4/26/04	4/27/04
140	129	129	129	129	129	129	129	129	129			
141												
142	6 Tea	3 Tea	3 Tea	176	4.5 Tea	7 Tea	8 Tea	8 Tea				
143												
144	4 Tan	4 Tan	5.5 Tan	5.5 Tan	8.5 Tan	9.5 Tan	8.5 Tan	8.5 Tan	4 Tan		4 Tan	
145	130	130	130	130	130	130	130	130	130		130	
146	113.2 Ter	103.8 Sny										47.1 Psr
147			127.5									
148		47.1 Psr						47.1 Psr - 6 Yak - 292 McN		215.6 JD		
149	148	148	148	148	148	148	148	148	148		148	
150	1 Tea	2 Tea	3 Tea	3 Tea	9 Tea	10 Tea		1 MTea	1 MTea		170	
151	1 WTea	13 NTea	13 NTea	14 NTea	173	164		144	142		133	
183	128	128	128	128	128	128	128	128	128		128	
184	6 Tea	6 Tea	5 Tea	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea	6 Tea		6 Tea	

Tag #	4/28/04	4/29/04	4/30/04	5/2/04	5/3/04	5/4/04	5/5/04	5/7/04	5/9/04	5/10/04	5/11/04	5/13/04
140		129										
141												
142		128										
143								52				
144					128	127	113.2 Ter - 103.8 Sny	52 - 47.1 Psr		6 Yak		
145		130	130									
146												
147	113.2 Ter			103.8 Sny			47.1 Psr					
148												
149		148	148									
150		155	138					128	127			113.2 Ter
151												
183		128	128									
184		6 Tea	6 Tea		128	127 - 113.2 Ter	103.8 Sny	48				

Tag #	5/14/04	5/15/04	5/16/04	5/18/04
140				
141				
142				
143				
144	215.6 JD	191.4 Dal	145.4 Bon	
145				130
146				
147				
148				
149				
150	103.8 Sny			
151				130
183				
184				

Appendix 1c. Summary of radiotagged wild steelhead data, Upper Yakima River, winter 2004-2005, (data are river miles from the mouth of the Yakima River (0) except for tributaries and the Columbia River, where 0 is the mouth of each system) (Bon = Bonneville Dam, Dal = The Dalles Dam, JD = John Day Dam, McN = McNary Dam, Yak = Yakima River, Psr = Prosser Dam, Sny = Sunnyside Dam, Ter = Terrace Heights Bridge, Wilson = Wilson Creek, Twd = Town Ditch Dam, Tan = Taneum Creek, Swk = Swauk Creek, Tea =Teanaway River, NTea = North Fork Teanaway River, Staff = Stafford Creek, Jack = Jack Creek, WTea = West Fork Teanaway River, MTea = Middle Fork Teanaway River, CleE = Cle Elum Station; POL = postorbital length, FL = fork length).

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	1/25/05	1/26/05	1/28/05	1/31/05	2/1/05	2/2/05	2/3/05	2/4/05	2/7/05
1	F	2.2	55	67	6.3									
2	F	2.2	56	66	6.2									
3	F	r.2	51.5	63.5	5.5									
4	F	r.2	53	65	6.4		128	128	128	128	128	128	131	136
5	F	3.2	59	71	7									
6	M	2.1	53	66	5.8									
7	F	2.2	50	62.5	4.9									
8	F	2.2	59	69	7.1									
9	M	2.2	58	72	6									
10	M	r.1	52	63	5.7									
11	F	r	56	68	6.3									
12	F	r.2	58	70	7.4									
13	F	r.2	54	65.5	6	129.5	133.5	134.5	134.5	134.5	134.5	134.5	135	145
14	M	2.2	58	73	8.4									
15	F	2.2	58	71	7.3									
16	F	2.2	52	64	5.6									
17	F	2.2	54	65	6.7									
18	F	2.2	55	68	7									
20	F	r.2	55.5	67.5	6.4									
21	F	3.2	57	69	6.5									
25	F	r.2	56	69	7.2									
26	M	r.1	51	64	5.2		128	133.5	146	146	146	146	146	147
27	F	2.2	58	70	7									
28	F	2.1	56	68	8.1									
29	F	2.2	57	69	6.9									
30	F	2.2	57	71	7.3									
31	F	w1.2	54	66	5.9									
32	F	2.2	57	69	6.7									
33	F	2.2	58.5	70.5	7.8									
34	F	2.1	45	55	3.6									

Tag #	2/11/05	2/14/05	2/15/05	2/16/05	2/17/05	2/22/05	2/25/05	2/28/05	3/1/05	3/2/05	3/3/05	3/4/05	3/7/05	3/8/05	3/9/05
1														128	136
2															
3															
4	136	136	136	136	136	136	136	136	136		136				141
5															
6															
7										128	128	128		128	131
8															
9															
10									128		140				161
11															
12															
13	145	145	145	146	146	146	146	146	146		146				160
14															
15															
16															
17															
18													128		153
20															
21															
25															
26	147	150						150	150		150			161.5 Twd	164
27															
28															
29															
30															
31									128		138			161.5 Twd	165
32															
33															
34															

Tag #	3/10/05	3/11/05	3/13/05	3/14/05	3/15/05	3/16/05	3/17/05	3/18/05	3/20/05	3/21/05	3/22/05
1			161.5 Twd	161.5 Twd - 164	170			170		170	170
2		128		151	151	151					
3	128	139		161 - 161.5 Twd		167		167		170	168
4		147		151	151	151					151
5				128	134	134		137		144	149
6				128	133	133		134		134	134
7		144		159	160	160		160		160	161
8				128	136	140		140		148	
9		135		149	149	149		149		149	149
10		166		165	165	165		165		166.5	166
11		128			158	161 - 161.5 Twd		162		162	162
12				128	142			161.5 Twd - 162		162	162
13		160 - 161.5 Twd	161.5 Twd	163	163	163		163		163	163
14		128		161.5 Twd - 162	171	177		185.6	185.6	185	185.6 - 186
15		128	161.5 Twd		175	185.6	185.6			184	184
16				128	132	134		134		134	134
17	128	141	161.5 Twd		162	162		162		168	170
18		170		170	170	170		170		170	171
20	128	136									151
21	128	130						154		156	158
25	128	141			160			160		160	159
26		176		176	176 - 1 Tea	1 Tea - 176		176	1 Tea	2 Tea	1 Tea
27				128	128	128		128		128	128
28					128	147		149		148	146
29					128	128		139		145	146
30					128	139		139			149
31		165		166	166	166		166		166	166
32								128		133	133
33										128	133
34											

Tag #	3/23/05	3/24/05	3/25/05	3/26/05	3/27/05	3/28/05	3/29/05	3/30/05	3/31/05	4/1/05
1	170	169.9	3 Swk				3 Swk		3 Swk	1.5 Swk
2										
3	167	167	167			167	166.5		161.5 Twd - 162	157
4	151	151	151			151	151		155	161 - 161.5 Twd
5		153	157	161.5 Twd		161 - 161.5 Twd	162		167	171
6	134	134	134			139	139		147	
7	161	161	160			160	160	161.5 Twd	161 - 161.5 Twd	162
8			151			152	152		152	152
9	148	149	149			149	149		149	149
10	164	164	164			169	170		171	171
11	162	162	162			162	162		162	162
12	162	168	175			174	174		174	174
13	163	163	163			163	163		163	163
14	186	186	186	185.6		184	184		184	
15	185.6	181		161.5 Twd		142	136	128	128	128
16	134	134	134			134	134		134	133
17	170	170	170			169.9 - 1 Swk	169.9			
18	171	171	172			172	172		171	
20		151	151			151	151			
21	156	161	160 - 161.5 Twd			166	166		169	171
25	146	128	128	128	128 - 127.9 - 127.5	128 - 127.5	127.5		128	128
26	1 Tea	1.5 Tea	1.5 Tea			1 Tea	1 Tea		1 Tea	1 Tea
27	128	128	128			128	128		128	128
28	151	158 - 161.5 Twd	160 - 161.5 Twd			163 - 161.5 Twd	157		131	128
29	154	161.5 Twd - 162	172	176.1		6 Tea	7 Tea		7 Tea	7 Tea
30	148					159	160		157	159
31	166	166	166			166	166		166	166
32	133	140	140			144			155	159
33	140	143	145			161.5 Twd	161		161	161
34							128		140	146

Tag #	4/2/05	4/3/05	4/4/05	4/5/05	4/6/05	4/7/05	4/8/05	4/9/05	4/10/05	4/11/05
1	169.9 - 161.5 Twd		140	136		128	128			128
2						152	168			
3			143	141	139	136	136			136
4				168	168	167	168			162 - 161.5 Twd
5			179	179	182	184 - 185.6	185.6 - 184		161.5 Twd	147
6			161.5 Twd - 162	168	172	176.1 - 1 Tea	6 Tea			13 NTea
7			175	3 Tea	4.3 Tea	1 Tea	6 Tea			12 NTea
8			140	128	128	128	128			
9			149	149	149		154			165
10			169.9 - 3 Swk	4 Swk	3.5 Swk	4 Swk	4 Swk			4 Swk
11			162	162	162	162	162			162
12	1 Tea		9 Tea	12 NTea	13 NTea	15 NTea	15 NTea			14 NTea
13			168	173	1 Tea	3 Tea	4.5 Tea			6 Tea
14										
15				128	128	128	128			128
16			133	133	133	133	133			133
17			3 Swk	166 - 161.5 Twd	145	136	128	113.2 Ter		
18										
20										
21		1 Tea	1 Tea	3 Tea	3 Tea	1 Tea	6 Tea			9 Tea
25			128	128	128	128	128			128
26			1 Tea	1 Tea	1 Tea	2 Tea	169	161.5 Twd		130
27			128	128	128	128	128			128
28	128	127.5		113.2 Ter	113.2 Ter					
29			7 Tea	5 Tea	1 Tea - 173	165 - 161.5 Twd	145		128 - 127.5	
30	161.5 Twd			169	169	169.9 - 3 Swk	3 Swk			
31			166	166	166	166	166			166
32			159 - 161.5 Twd	161.5 Twd	173 - 1 Tea	2 Tea	6 Tea			7 Tea
33			1 Tea	2 Tea	1 Tea	2 Tea	5 Tea			128
34				156	160 - 161.5 Twd	171	1Tea - 2 Tea			9 Tea - 1 WTea

Tag #	4/12/05	4/13/05	4/14/05	4/15/05	4/16/05	4/17/05	4/18/05	4/19/05	4/20/05	4/21/05	4/22/05
1	113.2 Ter	103.8 Sny									
2							169.9				
3	130	128	128	128			128	128	127.9	127.9	127.9
4	160	142	136	128		128	128	128			
5	137	134	128	128	128		128	128 - 127.9	127.9	127.9	127.9
6	14 NTea	14 NTea	16 NTea	15 NTea			16 NTea	15 NTea	15 NTea		20 NTea
7	14 NTea	15 NTea	16 NTea	16 NTea			16 NTea	16 NTea		174	169
8											
9	170	171	1 Tea	4 Tea				10 Tea		15 NTea	16 NTea
10	4 Swk	4 Swk	3 Swk	162 - 161.5 Twd		128	127.9	127.5	127.5	127.5	127.5
11	162	162	162	162			162	162		162	162
12	13 NTea	13 NTea	12 NTea	12 NTea			1Tea - 174	174	161.5 Twd		134
13	7 Tea	7 Tea	9 Tea	13 NTea			16 NTea	16 NTea			1.7 Jack
14								185.6		167	167
15											
16	133	133	133	133			133	133		133	133
17					103.8 Sny						
18											
20								161 - 161.5 Twd		164	164
21	11 Tea	1 WTea	1.5 MTea	3 MTea			5 MTea	6 MTea			8.5 MTea
25											
26	130	130	130	130			130	130		130	130
27	128	128	128	128			128	128			
28					103.8 Sny	103.8 Sny					
29	113.2 Ter	103.8 Sny									
30	4 Swk	4 Swk	4 Swk	4 Swk			4 Swk	4 Swk	169.9 - 161.5 Twd	137	130 - 113.2 Ter - 103.8 Sny
31	165	165	166	166			166	166		166	166
32	9 Tea	10 Tea	10 Tea	10 Tea			9 Tea	8 Tea	4.5 Tea	1 Tea	161.5 Twd - 160
33	144		128	128	128		128	128	113.2 Ter	103.8 Sny	103.8 Sny
34	1 WTea	1 WTea	1 WTea	1 WTea			1 WTea	2 WTea	0.5 WTea	1 Tea	161.5 Twd

Tag #	4/23/05	4/24/05	4/25/05	4/26/05	4/27/05	4/28/05	4/29/05	4/30/05	5/1/05	5/2/05	5/3/05	5/4/05	5/5/05	5/6/05
1														
2						150	150				127.9	127.9		127.9
3	127.9	127.9	127.9						127.9		127.9	127.9		127.9
4														
5	127.9	127.9	127.9	127.9	127.9	127.9	127.9		127.9	127.9				
6			16 NTea	18 NTea	16 NTea	15 NTea	18 NTea						18 NTea	
7														
8														
9			16 NTea	18 NTea	16 NTea	15 NTea	10 Tea						8 Tea	
10	127.5													
11			162	161	161	161	161						161	
12		127.5												
13			1Tea - 175	174	161.5 Twd	148	127.5							
14			167	167	167	167	167						167	
15														
16			133	133		133	133						133	
17														
18														
20			166.1 -1.6 Tan	1 Tan	1 Tan	1 Tan	161.5 Twd							
21			5 MTea	5 MTea	6 MTea	6 MTea	6 MTea	1 Tea	161.5 Twd	127.9	127.9	127.9	127.5	113.2 Ter
25														
26			130	130	130	130	130						130	127.9
27				127.9	127.9									
28														
29														
30	103.8 Sny	103.8 Sny												
31			166	166	166	166	166						166	
32		127.5				127.9							127.9	
33						6 Yak							215.6 JD	
34	127.9													

Tag #	5/7/05	5/14/05	5/15/05	5/16/05	5/17/05	5/18/05	5/19/05	5/20/05	5/22/05	5/23/05	5/25/05	5/27/05	5/28/05	5/29/05
1														
2														
3	127.9	127.9					127.9		127.9		127.9	127.9		
4														
5														
6					127.9									
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
20														
21	103.8 Sny				47.1 Psr					6 Yak	215.6 JD			215.6 JD - 191.4 Dal
25														
26													127.9	
27				127.9		127.9								
28														
29														
30														
31														
32														
33				191.4 Dal	145.4 Bon	145.4 Bon		145.4 Bon						
34														

Tag #	5/30/05	5/31/05	6/1/05	6/2/05	6/3/05	6/4/05	6/5/05	6/6/05	6/7/05	6/11/05	6/13/05	6/16/05
1												
2												
3	127.9				127.9		127.9	127.9				
4												
5												
6	127.9		127.9	127.9	127.9	127.9		127.9				
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18				127.9	127.9							
20												
21		145.4 Bon										145.4 Bon
25						127.5	127.5	127.5				
26												
27			127.9				127.5 - 127.9					
28												
29												
30												
31												
32												
33							145.4 Bon		145.4 Bon	145.4 Bon	145.4 Bon	
34												

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/3/05	3/8/05	3/9/05	3/11/05	3/14/05	3/15/05	3/16/05	3/17/05	3/18/05
35	M	r.2	56	69	6.7									
36	F	2.2	55	66	5.7									
37	F	2.2	52	64	5.3							128		139
38	F	2.1s	58	70	8.2								128	131
39	F	2.2	54	66	5.5									
40	F	2.2	59	70	7.5	128	161.5 Twd	161.5 Twd - 166	2.5 Tea	12 NTea	12 NTea	12 NTea		12 NTea
41	M	2.1	48	60	5					128	136	144		149
42	F	3.2	58	69	6.6									
43	M	r	50	64	5.1									
44	F	r.2	50	62	4.8									
45	F	r.2	57	69	6.6									
46	F	2.2	55.5	67.5	6.6									
47	F	2.2	59	71	8.2	128		128	128	128	128	128		128
48	F	2.2	61	74	7.4									
49	F	2.2	54	67	6.6							128		
50	F	2.2	53	64.5	5.6								128	131
51	F	3.1	47	57	3.8									
52	F	r.2	56	67	6.7									
53	F	2.2	51	63	4.8									
54	F	2.2	53	63	5.3									
55	F	2.2	58	69	6.4									
56	M	2.2	59	74	7.3									
57	F	2.2	54	65	5.9									
58	F	2.2	55	67	6.7									
59	F	r.2	54	65	5.7									
60	F	2.2	52.5	63.5	5.1									
61	F	2.2	55	67	6.9									
62	F	2.2	54	65	6.1									
72	F	r.2	53	64.5	6									
73	F	2.2	57	68	6.6									
74	F	2.2	57	68	7									
75	F	r.2	59	70	8.5									
76	F	2.2	55	67	6.5									
77	M	2.2	62	76.5	9.1									
78	F	r.2	60	73	7.6									

Tag #	3/21/05	3/22/05	3/23/05	3/24/05	3/25/05	3/28/05	3/29/05	3/30/05	3/31/05	4/1/05	4/2/05	4/3/05
35						128	128 - 130		147	153		161.5 Twd
36						128	141		155	161.5 Twd - 162		
37	140	140	136	136	136	128	128		128	128		
38	151	158	161	161.5 Twd	161.5 Twd - 161	161.5 Twd - 161	160		153	151		
39							128		149		161.5 Twd	1 Tea
40	12 NTea	12 NTea	12 NTea	12 NTea	5 Tea - 1 Tea	174	174			167		
41	149	149	149						152			
42						128	130		130	134		
43							128		143	144		
44							128		131	133		
45						128	145	161.5 Twd	168	3 Swk		
46						128	130		130	130		
47	128	128	128	128	128	128	128		128	128		
48						128	135		140	140		
49		128	128	128	128		128		128	128		
50	142	142	146			157	157		160	160		
51										128		
52												
53								128	130	130		
54												
55												
56												
57												
58								128	136	136		
59									128	128		
60												
61												
62												
72												
73												
74												
75								128	134	139		
76												
77												
78												

Tag #	4/4/05	4/5/05	4/6/05	4/7/05	4/8/05	4/9/05	4/10/05	4/11/05	4/12/05	4/13/05
35		169.9 - 169	169	1.5 Swk	3 Swk			4 Swk	4 Swk	4 Swk
36	169	169	169 - 169.9	4 Swk - 169.9	169.9 - 169			169	169	169
37	128	128	128	128	128			128		
38	140	136	128	128	128				128	128
39	4 Tea	9 Tea	11 NTea	12 NTea	12 NTea				12 NTea	12 NTea
40	163 - 161.5 Twd			144	142			140	140	140
41	159	158	159	161.5 Twd - 164	166.5			1 Swk	169	169
42	149	152	160 - 161.5 Twd	167			1 Tea	7 Tea	11 Tea	12 NTea
43	143	144	156	161.5 Twd - 164	169	1 Tea		6 Tea	1 Tea	161.5 Twd - 154
44	133	133	134	136	136			136	144	
45	4 Swk	4 Swk	3.5 Swk - 164	149	133	128 - 127.5	113.2 Ter		103.8 Sny	
46	130	130	130	130	130			130	130	130
47		128	128	128	128			128	128	128
48	156	158	160 - 161.5 Twd	167	172		1 Tea	2 Tea	4 Tea	7 Tea
49	128	128	128	128	128				128	128
50	160	160		160	147		128	128	128	128
51		130	130	128	128			133	133	133
52	128 - 130	133	133	133	133			133	133	133
53	130	130	130	130	130			130	130	130
54	128	130	130	130	130			130	130	130
55	128	128		139	139					
56	128		128	128	128				128	128
57	128	142		160 - 161.5 Twd	168		1 Tea	2 Tea	5 Tea	5 Tea
58	136	136	136	136	136			136	136	136
59	142	146	146	147	147			147	147	147
60	128	136	144					159	161 - 161.5 Twd	161 - 161.5 Twd
61	128	136	144					154	154	154
62	128	139	146	153	160 - 161.5 Twd	161.5 Twd		1 Tea - 3 Tea	6 Tea	7 Tea
72	128	133	139	144	144			155	161 - 161.5 Twd	165
73	128	140	153	161.5 Twd - 167	176.1 - 1 Tea			4.5 Tea	6 Tea	9 Tea
74	128	142	156	161.5 Twd - 163	169			169	169 - 161.5 Twd	169
75	143			161.5 Twd - 164	171			182	182	185.6
76	128	130	145	154	161 - 161.5 Twd		1 Tea	6 Tea		11 Tea
77	128	128	128	128	128			128	128	128
78	128	139	146	147	147				151	

Tag #	4/14/05	4/15/05	4/16/05	4/17/05	4/18/05	4/19/05	4/20/05	4/21/05	4/22/05	4/23/05
35	4 Swk	4 Swk			4 Swk	4 Swk		4 Swk	4 Swk	
36	169	169			169 - 169.9	4 Swk		4 Swk	11 Swk	
37		128			128	128				
38	128	128			128	128				
39	2 Tea - 1Tea	161.5 Twd			142	136	128	128	128	
40	140	140			140	140		140	128	127.9
41	1 Swk	3 Swk	169.9		169.9 - 1 Swk	172	169.9	3 Swk	4 Swk	
42	14 NTea	14 NTea			17 NTea	17 NTea	17 NTea		20 NTea	
43	147	142			134	134		134	134	
44	152	159 - 161.5 Twd	161.5 Twd	161.5 Twd	161 - 161.5 Twd	161.5 Twd - 169	1 Tea		10 Tea	
45										
46	130	130			130	130				
47	128	128			128	128				
48	7 Tea	7 Tea			7 Tea	7 Tea			7 Tea	
49	128	128			128	128				
50	128	128			133	133		128 - 127.5		
51	133	133			140	142		146	148	
52	133	133			133	133		133	133	
53	130	130			130	130		130	130	
54	130	130			130	130		130	130	
55	152	158	161.5 Twd	161.5 Twd	162	167		1 Tea - 3.5 Tea		
56	128	128			128	128				
57	5 Tea	5 Tea		1 Tea	163 - 161.5 Twd	144		133	130 - 127.5	
58	136	136			136	136		136	136	
59	147	147			147	147		146	146	
60	166	171	1 Tea		7 Tea	9 Tea	2 MTea		3.2 MTea	
61	154	154			154	155		154	141	127.9
62	7 Tea	8 Tea			8 Tea	8 Tea		1 Tea - 175	167	
72		175 - 1 Tea			8 Tea	11 Tea				
73	10 Tea	10 Tea	1 Tea		151	140	128		127.5 - 113.2 Ter	
74	169	169			169	170		169.9 - 1 Swk	4 Swk	169.9
75		182			184			134	127.9	113.2 Ter
76	1 MTea	1 MTea			1 MTea	1.5 MTea	1.5 MTea		8 MTea	
77	128	128			128	128				
78		148			147					

Tag #	4/24/05	4/25/05	4/26/05	4/27/05	4/28/05	4/29/05	4/30/05	5/1/05	5/2/05	5/3/05
35		4 Swk	4 Swk		4 Swk					
36		11 Swk	14 Swk		11 Swk		169.9	161.5 Twd		
37						127.9				
38										
39	128	128	128	128		128				
40	127.9	127.9	127.9	127.9	127.9	127.9		127.9		127.9
41		4 Swk	9 Swk		11 Swk					
42		16 NTea	17 NTea	17 NTea	17 NTea	17 NTea				
43						127.9				
44		2 WTea	7 Tea	6 Tea	6 Tea	6 Tea				
45				47.1 Psr						
46		130	130	130	130	130				
47										
48		6 Tea	7 Tea	7 Tea	7 Tea	7 Tea				
49					128				127.9	
50				113.2 Ter						
51		151	153	154	151	139				
52		133	133	133	133	133				
53										
54		130	130	130	130	130				
55		1 MTea	2 MTea	3 MTea	4 MTea	4 MTea				
56						127.9				
57										
58		136	136	136	136	136				
59		146	146	146	146	146				
60		2 MTea	11 Tea	4 Tea - 176.1	161.5 Twd - 155	127.5		113.2 Ter - 103.8 Sny		
61	127.9	127.9	127.9	127.9	127.9	127.9				
62		167	167		167	167				
72								1 Tea		161.5 Twd
73		103.8 Sny								
74	161.5 Twd	151	147	144	130	128	127.9			
75										
76		2 MTea	1 Tea - 174	161.5 Twd	145	128	128		113.2 Ter - 103.8 Sny	
77	127.9				127.9					
78			1 Wilson - 127.9							

Tag #	5/4/05	5/5/05	5/6/05	5/7/05	5/8/05	5/9/05	5/10/05	5/11/05	5/12/05	5/13/05	5/14/05	5/15/05	5/17/05
35		6 Swk											
36		127.5											
37													
38													
39													
40	127.9	127.9	127.9	127.9	127.9 - 127.5		127.9	127.9	127.9	127.9			
41												169.9	
42		17 NTea											
43												127.9	
44		7 Tea											
45													
46		130											
47				127.9	127.9								
48		7 Tea											
49										127.9			
50													
51		136											
52		133	127.9		127.9								
53													
54													
55		4 MTea	1 Tea			161.5 Twd	161.5 Twd			128	113.2 Ter		
56													
57						127.9							
58		136		127.9									
59		145	127.9										
60													
61													
62		167											
72		134	128 - 127.9	113.2 Ter	103.8 Sny	103.8 Sny					47.1 Psr	6 Yak	292 McN
73													
74			127.9		127.9					127.9			
75													
76								6 Yak		292 McN			
77													
78			127.9				127.9		127.9				

Tag #	5/18/05	5/19/05	5/20/05	5/21/05	5/22/05	5/24/05	5/25/05	5/26/05	5/27/05	5/28/05	5/29/05	5/30/05	5/31/05
35													
36													
37													
38		127.9											
39													
40													
41		127.9											
42								127.9					
43									127.9		127.9	127.9	127.9
44													
45													
46													
47								127.9		127.9	127.9	127.9	
48													
49						127.9				127.9			
50													
51													
52				127.9				127.9					
53													
54											127.9		
55	103.8 Sny						6 Yak	292 McN	215.6 JD	215.6 JD	191.4 Dal	145.4 Bon	
56									215.6 JD				
57													
58			127.9										
59													
60													
61													
62													
72		191.4 Dal	145.4 Bon	145.4 Bon	145.4 Bon		145.4 Bon	145.4 Bon	145.4 Bon				
73													
74													
75													
76	191.4 Dal	145.4 Bon											145.4 Bon
77													
78												127.9	127.9

Tag #	6/1/05	6/2/05	6/3/05	6/4/05	6/5/05	6/6/05
35						
36						
37						
38						
39						
40						
41						
42				127.9		
43		127.9				
44						
45						
46						
47			127.9	127.9		
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58	127.9					
59						
60						
61						
62						
72						
73						
74						
75						
76						
77						
78					127.9	

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/30/05	3/31/05	4/1/05	4/4/05	4/5/05	4/6/05	4/7/05	4/8/05	4/9/05
79	M	r.1	53	65	5.5				128	128	128	128 - 132	149	161.5 Twd
80	F	r.2	54	65	5.7				128	128	130	128	128	
81	F	w1.2	61	73	8.5	128	134	140	149	149	149	149	145	128
82	F	2.2	58	70	7				128	128	128		128	
83	M	2.2	59	74	8				128	146		160 - 161.5 Twd	168	1 Tea
84	F	2.2	61	75	9.5				128	136	144	151	160	161.5 Twd
85	M	2.2	52	64	5.7					128 - 130	130	130	130	
86	F	2.2	53	65	6						128	131	132	
87	M	r	56	69	6.6					128	130	136	139	
88	F	2.2	56	68	6.4					128				
89	F	r.1	50	61	4.9					128	131	139	147	
90	F	2.2	61	74	8.6						128	139	139	
91	F	3.2	60	72	7.8					128 - 130	145	144	144	
92	F	3.2	55	65	5.5						128		128	
93	F	3.2	57	70	6.6					128	138	146	145	
94	F	2.2	54	66	5.2							128	134	
95	F	3.2	57	69	7.8				128	130	134	136	138	
96	M	r.2	57	72	8.7							128	140	
97	F	2.2	54	67.5	6.9						128	146	154	161.5 Twd
98	M	2.2	60	74	9.4							128	144	
99	F	r.2	53	64	5.9								128	
100	F	r.2	56	68	6.5							128	128	
101	F	r.1	51	60.5	4.7							128	139	
102	F	2.1	50	61	4.8								128	
103	F	2.2	59	70	7.1								128	
104	F	2.2	51	63	6								128	
105	F	2.2	55	66	7.3								128	
106	F	w1.2	56	68	6.9							128	142	
107	M	2.2	57	71	7					128			128	
108	F	3.2	51	62	4.7							128	140	
109	F	2.2	56	69	6.4							128	130	
110	M	r.2	56.5	70	6.7									
111	M	2.2	57	68	6.2									
112	M	2.2	59	73	7.2									
113	F	2.2	57	67	6.1									
114	F	2.2	56	68	6.2									
115	M	r.2	60	75	7.3									
116	F	3.2	58	69	6.4									
117	F	2.2	59	72	8.1									
118	F	r.2	55	65	6.2									

Tag #	4/10/05	4/11/05	4/12/05	4/13/05	4/14/05	4/15/05	4/16/05	4/17/05	4/18/05
79		1 Tea - 3 Tea	5 Tea	10 Tea	14 NTea	16 NTea			17 NTea
80		128	128	128	128	128			128
81	128	128	128	128	128	128			128
82		128	128	128	128	128			128
83		8 Tea	8 Tea	5 Tea	5 Tea	6 Tea			6 Tea
84		1 Tea - 176	4 Tea	5 Tea	5 Tea	5 Tea			7 Tea
85		130	130	130	130	130			130
86		144	149	149					160 - 161.5 Twd
87		144		154	160 - 161.5 Twd	166			168
88		128	128						
89		159	160	160 - 161.5 Twd	164	167			
90			153	147	147	147			147
91		128	128		128	128	128		128
92		128	128	128	128	128			128
93					151				151
94		148	148	148	148	148		127.5	113.2 Ter
95		140	147		152	154		161.5 Twd	161.5 Twd - 161
96						151			
97		175 - 1 Tea	4 Tea	6 Tea	7 Tea	7 Tea			
98	161.5 Twd	166 - 176.1	172	4 Tea	6 Tea	7 Tea			8 Tea
99		161.5 Twd - 163	172		185.6				184
100		148			152				161 - 161.5 Twd
101		156	161 - 161.5 Twd	167	172	1 Tea - 2 Tea			11 Tea
102		128	130	130		128			128 - 131
103		145			160 - 161.5 Twd	161.5 Twd - 160			160 - 161.5 Twd
104		160 - 161.5 Twd	166	171		185.6 - 182			184
105		147	153			158	161.5 Twd	161.5 Twd	161 - 161.5 Twd
106			147	128	128	128			128
107		158 - 161.5 Twd	161.5 Twd - 165	168	175 - 1 Tea	3 Tea			8 Tea
108		161.5 Twd - 162	169	169.9 - 1 Swk	169.9 - 3 Swk	4 Swk			
109		151	158	160	160	159			159
110									
111		128	137	148	152	159 - 161.5 Twd	161.5 Twd		1 Tea - 2 Tea
112									
113			128	130	130	130			131
114									
115									
116									
117		128	147	153	160 - 161.5 Twd	167	1 Tea		3 Tea - 1 Tea
118				128	128	128			128

Tag #	4/19/05	4/20/05	4/21/05	4/22/05	4/23/05	4/24/05	4/25/05	4/26/05
79	16 NTea	16 NTea		18.5 NTea			16 NTea	16 NTea
80	128							
81	128	128	128	128 - 127.5				103.8 Sny
82	128							127.9
83	7 Tea			6 Tea			10 Tea	11 Tea
84	7 Tea			1 Tea - 173 - 161.5 Twd			128 - 127.9	128 - 127.9
85	130		130	130			130	130
86	165		177	177 - 1 Tea		1 Tea	177	161.5 Twd - 155
87	174 - 1 Tea	9 Tea		1.5 WTea				
88								
89	167		165 - 161.5 Twd	133	128	128		
90	147		161.5 Twd	169 - 1 Tea			8 Tea	11.7 Tea
91	128	128	127.9	127.9	127.9	127.9	127.9	127.9
92	128							
93	155	161.5 Twd	167	166.5			166.1 - 1 Tan	2 Tan
94	103.8 Sny							
95	161 - 161.5 Twd		171	176 - 1 Tea			10 Tea	12 NTea
96	151			149			143	143
97	12 NTea		16 NTea				4 Tea - 1 Tea	169 - 161.5 Twd
98	9 Tea		14 NTea	17 NTea				18 NTea
99		185.6	168 - 161.5 Twd	139				
100	165		169.9 - 3 Swk	4 Swk				169.9 - 164 - 161.5 Twd
101	10 Tea			11 Tea			13 NTea	14 NTea
102	128			161.5 Twd	161.5 Twd	169.9	5 Swk	
103	167	1 Tea		0.4 MTea			2 WTea	11.7 Tea - 1 Tea
104			191	191			161.5 Twd - 159	146
105	169	1 Tea	5 Tea	4 Tea			2 Tea - 1 Tea	173
106	128			113.2 Ter			103.8 Sny	
107	11 Tea			15 NTea			12 NTea	12 NTea
108				4 Swk			9 Swk	10 Swk
109	159		159	159			159	159
110		128	145	160 - 161.5 Twd	1 Tea		12 NTea	12 NTea
111	4 Tea			2.3 WTea				3 WTea
112				128		161.5 Twd	1 Tea - 5 Tea	2 WTea
113	131		136	141				154
114			128	145	161.5 Twd	169.9	169.9	4 Swk
115			128	149	161.5 Twd	1 Tea	8 Tea	12 NTea
116							128	137
117	161.5 Twd		128	127.5 - 113.2 Ter	103.8 Sny			
118	128				127.9			

Tag #	4/27/05	4/28/05	4/29/05	4/30/05	5/1/05	5/2/05	5/3/05	5/4/05	5/5/05
79	12 NTea	11 Tea	4 Tea - 1 Tea		161.5 Twd				160
80				127.9					
81					6 Yak				
82		127.9				127.9	127.9		
83	11 Tea	10 Tea	10 Tea	1 Tea					166
84		128 - 127.9	128 - 127.9	128 - 127.9	127.9	127.9	127.9	127.9	127.9
85	130	130	130						127.9
86	132	128 - 127.9 - 127.5	127.9	127.9	127.9	127.9			127.5
87									
88						127.9			
89									
90	11.7 Tea	11.7 Tea	7 Tea - 1 Tea	161.5 Twd - 127.9		127.9 - 127.5	113.2 Ter	103.8 Sny	
91	127.9	127.9	127.9						
92									
93	4 Tan	5 Tan					166.1	161.5 Twd	127.5
94									
95	12 NTea	12 NTea	14 NTea						16 NTea
96	144	144	144						143 - 127.5
97		137	128		127.9	113.2 Ter - 103.8 Sny			
98	1 Staff	17 NTea	18.5 NTea						15 NTea
99									
100	156	155	153						138
101	15 NTea	14 NTea	12 NTea		1 Tea	161.5 Twd	127.9	127.9	127.9 - 113.2 Ter
102					169.9	161.5 Twd	161.5 Twd		128
103	161.5 Twd - 156	128	127.5 - 113.2 Ter	103.8 Sny	103.8 Sny				
104	135	128	113.2 Ter	103.8 Sny					
105	161.5 Twd		128	113.2 Ter - 103.8 Sny					
106									
107	12 NTea	12 NTea	1 WTea	1 Tea	161.5 Twd				128
108		4 Swk	169.9 - 169	161.5 Twd				128	128
109	159	159	159						160
110	12 NTea	12 NTea	11 Tea						12 NTea
111									3 MTea
112	1.5 WTea	11.7 Tea	1.5 WTea						
113	155	159					1 Tea		
114		4 Swk							6 Swk
115	12 NTea	14 NTea	12 NTea						12 NTea
116	141	147					161.5 Twd		151
117									
118									

Tag #	5/6/05	5/7/05	5/8/05	5/9/05	5/10/05	5/11/05	5/12/05	5/13/05	5/14/05	5/15/05
79										
80					127.9	127.9	127.9		127.9	127.9
81			191.4 Dal							
82			127.9			127.9		127.9	127.9	127.9
83										
84	127.9									
85		127.9								
86										
87									1 Tea	161.5 Twd - 127.9
88										
89										
90							47.1 Psr			
91										
92										
93	113.2 Ter - 103.8 Sny									
94										
95		1 Tea	161.5 Twd	161.5 Twd					127.9	113.2 Ter - 103.8 Sny
96								127.9		
97				47.1 Psr	47.1 Psr	6 Yak		292 McN		
98										
99					127.9					
100							127.9			
101	103.8 Sny						47.1 Psr			
102	113.2 Ter		103.8 Sny							
103						47.1 Psr				
104								47.1 Psr		
105										
106										
107										
108		128	128	128						128
109										
110	1 Tea	161.5 Twd								
111							1 Tea	161.5 Twd		127.9
112				1 Tea - 161.5 Twd						
113										1 Tea
114				127.9		127.9			127.9	
115				1 Tea		127.9				127.9
116										
117										
118								47.1 Psr		

Tag #	5/16/05	5/17/05	5/18/05	5/19/05	5/20/05	5/21/05	5/22/05	5/23/05	5/24/05	5/25/05	5/26/05
79											
80				127.9				127.9			
81											
82		127.9	127.9			127.9	127.9	127.9	127.9		
83											
84											
85				127.9							
86											
87		127.9 - 127.5	113.2 Ter - 103.8 Sny							47.1 Psr	
88											
89											
90											
91											
92											
93											
94											
95				47.1 Psr							
96			127.9								
97		191.4 Dal									
98											
99											
100											
101	6 Yak					215.6 JD	191.4 Dal	145.4 Bon			
102		47.1 Psr									
103											
104											
105											
106											
107											
108	128	128	128	128	128	128	128	128			
109		127.9		127.9			127.9				127.9
110											
111	113.2 Ter - 103.8 Sny									47.1 Psr	
112		127.9		127.9		127.9	127.9			127.9	
113	161.5 Twd		127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5
114									127.9		
115						127.9					
116											
117							215.6 JD			145.4 Bon	145.4 Bon
118								215.6 JD	215.6 JD		215.6 JD

Tag #	5/27/05	5/28/05	5/29/05	5/30/05	5/31/05	6/1/05	6/2/05	6/3/05	6/4/05	6/5/05	6/6/05	6/7/05	6/8/05
79													
80							127.9		127.9	127.9			
81													
82		127.9				127.9				127.9	127.9		
83													
84													
85													
86													
87													
88													
89													
90													
91													
92													
93													
94													
95													
96													
97													
98													
99								127.9					
100													
101							145.4 Bon						
102													
103													
104													
105													
106													
107													
108				128	128	128	128	128	128	128	128		
109	127.9					127.9	127.9						
110													
111													
112								127.9	127.9				
113	127.5		127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5	127.5		
114		127.9								127.9			
115	127.9												
116													
117	145.4 Bon			145.4 Bon	145.4 Bon				145.4 Bon	145.4 Bon	145.4 Bon		145.4 Bon
118	215.6 JD						215.6 JD					215.6 JD	215.6 JD

Tag #	6/9/05	6/11/05	6/13/06	6/18/05	6/20/05	6/29/05	7/1/05
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97		145.4 Bon					
98							
99							
100							
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117	145.4 Bon		145.4 Bon	145.4 Bon	145.4 Bon	145.4 Bon	
118							215.6 JD

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	4/8/05	4/11/05	4/12/05	4/13/05	4/14/05	4/15/05	4/18/05	4/19/05
119	F	3.2	53	64	6								
120	F	2.2	54	65	6.2								
121	F	2.2	51	61.5	4.9	128	154	154	153	154	154	130	128
122	F	r.2	56.5	68	6.6								
123	F	2.2	58	70	6.9			128	128	128	128	128	128
124	F	r.1	52	63	5.6								
132	F	2.2	59	69	6.8						128	142	
133	F	r.2	62	74	7.7			128	130	131	136	156 - 161.5 Twd	161.5 Twd - 167
134	F	r.2	56	68	6.1			128	138	142	148	154	159
135	F	r.2	58	69	6.8							128	130
136	F	2.2	54	66	6.1		128	128			130	140	144
137	F	2.2	55	65	5.4								
138	F	r.2	55	66	6			128	131	131	131	131	131
139	F	w1.2	60	71	7.3		128	140		160	160		
140	F	2.2	59	71	7.6						128	128	128
141	F	2.2	54	64.5	5.3								

Tag #	4/20/05	4/21/05	4/22/05	4/23/05	4/24/05	4/25/05	4/26/05	4/27/05	4/28/05	4/29/05
119			128					161.5 Twd	169.9	
120	128	142	154 - 161.5 Twd	161.5 Twd	1 Tea	2 Tea	3.5 Tea	5 Tea	6 Tea	6 Tea
121	128	128	128	128 - 127.5						
122		145	159 - 161.5 Twd			167	161.5 Twd - 156	137	128 - 113.2 Ter	103.8 Sny
123			128							
124		128	145	161.5 Twd	1 Tea	5 Tea	9 Tea	10 Tea	10 Tea	10 Tea
132		160 - 161.5 Twd	167		185.6					
133	169.9	4 Swk	4 Swk	169.9 - 161.5 Twd	127.5					
134	161.5 Twd	167	166.5			166.1 - 2 Tan	2 Tan	2 Tan	2 Tan	
135		145		161.5 Twd		1 Tea - 2 Tea	6 Tea	6 Tea	7 Tea	8 Tea
136		153	156	161.5 Twd		174		185.6		
137		128								128
138		131	131			131	131	131	131	131
139										
140										
141	128	137	148		161.5 Twd	161.5 Twd - 167	176 - 1 Tea	6 Tea	10 Tea	12 NTea

Tag #	5/2/05	5/3/05	5/4/05	5/5/05	5/6/05	5/7/05	5/8/05	5/9/05	5/10/05	5/11/05
119				6 Swk			169.9 - 161.5 Twd		127.5	113.2 Ter - 103.8 Sny
120	1 Tea	161.5 Twd		128	127.5	113.2 Ter	103.8 Sny	103.8 Sny		
121									127.5	
122										
123										
124			1 Tea - 161.5 Twd	134				127.9 - 127.5	113.2 Ter - 103.8 Sny	103.8 Sny
132										
133										
134	166.1			161.5 Twd - 160		127.5 - 113.2 Ter	103.8 Sny			
135			1 Tea - 161.5 Twd	161.5 Twd		127.5		127.9	127.9	
136									185.6	
137										
138	127.9	127.9		131						
139										
140				127.9						
141				13 NTea		1 Tea - 161.5 Twd			113.2 Ter	103.8 Sny

Tag #	5/12/05	5/13/05	5/14/05	5/16/05	5/17/05	5/18/05	5/19/05	5/20/05	5/21/05	5/22/05	5/23/05	5/24/05
119												
120												
121		127.9										
122												
123												
124			6 Yak		292 McN			215.6 JD		215.6 JD - 191.4 Dal	145.4 Bon	
132		185.6	161.5 Twd	113.2 Ter	103.8 Sny							6 Yak
133												
134												
135					127.9							
136	161.5 Twd		127.9	113.2 Ter	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny	103.8 Sny
137		127.9			47.1 Psr							
138											127.9	
139												
140	127.9	127.9										
141												

Tag #	5/27/05	5/28/05	5/29/05	5/30/05	6/1/05	6/2/05	6/12/05	6/15/05
119								
120								
121	127.9			127.9				
122								
123								
124								
132			215.6 JD - 191.4 Dal	145.4 Bon			145.4 Bon	145.4 Bon
133					127.9	127.5		
134								
135		127.9						
136								
137								
138					127.9			
139								
140								
141								

Appendix 1d. Summary of radiotagged wild steelhead data, Upper Yakima River, winter 2005-2006, (data are river miles from the mouth of the Yakima River (0) except for tributaries and the Columbia River, where 0 is the mouth of each system) (Bon = Bonneville Dam, Dal = The Dalles Dam, JD = John Day Dam, McN = McNary Dam, Yak = Yakima River, Psr = Prosser Dam, Sny = Sunnyside Dam, Ter = Terrace Heights Bridge, Twd = Town Ditch Dam, Tan = Taneum Creek, Swk = Swauk Creek, Tea = Teanaway River, NTea = North Fork Teanaway River, Staff = Stafford Creek, WTea = West Fork Teanaway River, MTea = Middle Fork Teanaway River, CleE = Cle Elum Station, POL = postorbital length, FL = fork length).

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	4/20/06	4/21/06	4/22/06	4/23/06	4/24/06	4/25/06	4/26/06
10	F	3.2	53	64	5.5		128	128		131	132	135
11	F	2.2	61	73	8.1					128	141	
12	F	2.2	58	68	7.2					128	128	
13	F	2.2	59	72	7.5		128		161.5 Twd	168 - 176.1 - 169.5 Swk		4 Swk
14	F	2.2	54	67	6					128	134	143
15	M	2.2	61	76	8.5		128			131	131	131
16	F	r.2	59	70	6.2							128
17	F	2.2	58	70	7.2							128
18	F	2.1	49	60	4.7							128
19	F	3.2	55	67	6	128	149	161.5 Twd	161.5 Twd	166.1	166.1	3 Tan
20	M	2.2	52	64	5.3	128	128			157	158 - 161.5 Twd	158
21	F	r	58	70	7.4						128	132
22	F	r.2	54	66	5.9		128			156	156	156
23	M	2.2	62	78	10.4		128		161.5 Twd	169 - 169.9	4 Swk	5 Swk
24	F	3.2	59	70	7							
25	F	3.2	61	72	6.9						128	133
26	F	2.2	63	77	9.6							
27	F	r.2	54	66	6.4		128		161.5 Twd		160 - 161.5 Twd	169
28	F	2.2	55	66	6.5							
29	M	r.2	62	76	8.2							
34	F	3.2	56	67	5.7							
35	F	r.1	50	61	5.2							
37	F	2.2	57	67	6.4							
39	F	2.1	52	64	5.5							
41	F	3.1	52	63	5.5							
45	F	2.2	60	71	7.2							

Tag #	4/27/06	4/28/06	4/29/06	4/30/06	5/1/06	5/2/06	5/3/06	5/4/06	5/5/06
10	139	146							
11	161.5 Twd		1 Swk	1 Swk			4 Swk	4 Swk	4 Swk
12	140				155		160		160
13	5 Swk	7 Swk			7 Swk		5 Swk	4 Swk - 1 Swk	1 Swk - 161.5 Twd - 160
14	150	150					150	150	150
15	131	131			132		132	132	132
16	128	134			139		139	140	143
17		128							128
18	130	139			149		149		149
19	3 tan	3 Tan			4 Tan		5 Tan	7 Tan	7 Tan
20		157			155				134
21	139	149			154		157		161.5 Twd
22	157				157		157	157	156
23	10 Swk	11 Swk			11 Swk		12 Swk	13 Swk	13 Swk
24		128	128	128	127.5	127.5 - 127.9	127.9 - 128	128	133
25	140	149			154			159	161.5 Twd
26	128	141					160 - 161.5 Twd	160	158
27	176.1- 2 Tea	3 Tea			4 Tea		11 Tea	14 NTea	15 NTea
28									
29							128	150	161.5 Twd
34									
35								128	147
37							128	132	133
39									
41									
45							128	139	147

Tag #	5/6/06	5/7/06	5/8/06	5/9/06	5/10/06	5/11/06	5/13/06	5/14/06	5/15/06	5/16/06	5/17/06	5/18/06
10												127.9
11			4 Swk	4 Swk	4 Swk							
12			160	160	160	160			160		160	160
13			127.5									
14			150	150	150	150			150	150	150	150
15			132	132	132	132			132	132	132	132
16			147	148	148	148			148	149		
17			128	128	128	128			128	128	128	128
18			149	149	149	149			149	149	149	149
19			7 Tan	7 Tan					7 Tan	7 Tan	6 Tan	7 Tan
20			134	134	134	134			134	134	134	134
21			1 Tea - 2 Tea	3 Tea	3 Tea	3 Tea			3 Tea	3 Tea	2 Tea	2 Tea
22						127.9	127.9	127.9				
23			10 Swk	7 Swk	7 Swk		1 Swk	1 Swk - 161.5 Twd	135	128	128	
24			143	148		150			156	150	150	144
25			163	163	165		166.1		5 Tan	7 Tan	6.5 Tan	7 Tan
26			135	127.9								127.5
27			15 NTea	15 NTea	16 NTea	15 NTea		1 Tea	161.5 Twd		144	113.2 Ter
28				128	139					130	128	128
29		1 Tea	9 Tea	1 WTea		1 WTea			9 Tea			
34									128			
35	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd - 162	162	165		128		127.5		
37			143	145	146				157		160	160
39			128	139	149	155	161.5 Twd		1 Tan	2 Tan	3.5 Tan	3 Tan
41			128	139	147	148					127.9	113.2 Ter
45			154	157	157						128	128

Tag #	5/19/06	5/20/06	5/21/06	5/22/06	5/23/06	5/24/06	5/25/06	5/26/06	5/29/06	5/30/06	5/31/06	6/3/06
10	127.9	127.9	127.9	127.9	127.9	127.9	127.9	128				
11												
12				127.9								
13												
14												
15					131.5			131.5			131.5	
16					128							
17					128			128				
18												
19					6 Tan			6 Tan			6 Tan	
20					133			133.5			134	
21					2 Tea			2 Tea			1 Tea	
22												
23					129			129			129	
24					144			143			144	
25					6.5 Tan			2 Tan			6 Tan	1 Tan
26									127.5			
27					6 Yak							
28												
29		1 Tea	161.5 Twd		138			138			135	
34												
35								126			126	
37		161.5 Twd			163		1 Swk				133	
39					5 Tan					1 Tan	164	
41							6 Yak					
45					128			128				

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/20/06	3/21/06	3/22/06	3/23/06	3/24/06	3/25/06	3/26/06	3/27/06	3/28/06
46	M	2.2	58	70	6.8									128
47	M	2.2	57	71	7.7		128	136	140	147				
48	F	r.2	57	68	8	128	131	134	138	142			143	
49	F	2.2	57	68	7.3									128
50	M	2.2	60	71	7.3									128
51	F	2.2	65	77	7									
52	M	r.2	52	64	5.7	128	131	134	136	144			151	
53	M	2.2	67	84	10.4									128
54	F	r.2	57	69	7.3								128	
55	F	2.2	49	61	4.6					128				
56	M	2.2	57	70	7.3									
57	F	2.2	61	72.5	8.2									128
58	M	2.2	69	84	11.2	128	131	131	131	131			131	
59	F	2.1	50	60	4.5		128	136	142			161.5 Twd	161.5 Twd	
60	F	r.1ss	57	68	8					128				161.5 Twd
61	F	2.2	54	65	5.4			128	128	133			151	
62	F	r.1	50	61	5.1	128	130	130	130	139			150	
63	M	r.1s1	52	65	6.1		128	139		156	161.5 Twd		176.1	
64	M	2.2	62	76	9.5									
65	F	2.2	57	69	6.7									
66	M	2.2	57	70	6.9									
67	M	2.2	64	78	9.6									128
69	F	3.1	55	67	6.8									
70	F	2.2	56	67	6.5									
71	F	2.2	54	65	6.4									
73	M	r.2	57	69	6.9									
74	F	2.1	51	60	5.2									
75	M	2.2	55	69	6.6							128	144	
76	F	2.2	56	66	6.5									
77	F	2.2	58	70	7.8									
78	F	2.1	50	63	5.7									
79	F	2.2	50	61	5.2									
80	F	2.1	48	58	4.1									

Tag #	3/29/06	3/30/06	3/31/06	4/1/06	4/3/06	4/4/06	4/5/06	4/6/06	4/7/06	4/8/06	4/10/06
46	133	133	136		134	135	135	135	135		135
47	154	154	154		160	160	160	160	168		175
48	143	141	142		143	143	145	150	151		158
49	133	133	133		134	133	133	133	133		134
50	145	161.5 Twd			7 Tea	9 Tea	11 Tea	11 Tea	2 WTea		2 MTea
51	128	161.5 Twd	128					127	127		6 Yak
52	153	154	156		161.5 Twd	161.5 Twd	166	169	169		1 Swk
53	128	128	128		128	128	128	128	128		128
54	139	148	156 - 161.5 Twd		166	168	174	3 Tea	6 Tea		9 Tea
55	157	164	168	1 Swk	2 Swk	2 Swk	2 Swk	3 Swk	3 Swk		3 Swk
56		128	144		150	147	148		148		
57	139		157	161.5 Twd	160	160	164	170	175 - 1 Tea		4 Tea
58	131	131	131		131	131	131	131	131		131
59	173	176.1	4 Tea		7 Tea	9 Tea	9 Tea	10 Tea	11 Tea		13 NTea
60	161.5 Twd	162	162		140	139	131	128	128		128
61	161.5 Twd	161.5 Twd	162		164	164	168	174	3 Tea		9 Tea
62					160 - 161.5 Twd	161.5 Twd	166		168		168
63	7 Tea	7 Tea	7 Tea		9 Tea	9 Tea	9 Tea	9 Tea	9 Tea		9 Tea
64			128		133	133	133	133	133		133
65			128		161.5 Twd - 160	160					163
66			128		128	128	128	128	128		128
67					128	128	128	127	127		127
69			128	128	160 - 161.5 Twd	161.5 Twd	169	3 Tea	6 Tea		12 NTea
70			128		131	131	131	131	131		131
71			128		161.5 Twd	176.1	8 Tea	2 WTea	2 WTea		
73			128		148	157	161.5 Twd	169 - 1 Swk	1 Swk		
74		128	131		141	161.5 Twd	161.5 Twd	168	1 Swk		4 Swk
75		158	161.5 Twd		176.1	6 Tea	8 Tea	11 Tea	13 NTea		16 NTea
76			128		164 - 161.5 Twd	176.1	171	171	171		144
77			128		139	139					128
78			128		146	146	145	145	145		156
79			128		134	140	148	154	157	161.5 Twd	165
80	128	132	134		148	148	148	147	148		152

Tag #	4/11/06	4/12/06	4/13/06	4/14/06	4/15/06	4/16/06	4/17/06	4/18/06	4/19/06	4/20/06	4/21/06
46	134	135	135	135			135	135	135	135	135
47	175	175	175	175			175	175	175	175	175
48	160 - 161.5 Twd	161.5 Twd	166	168			171	172	172	172	172
49	134	134	134	134			134	134	134	134	134
50	1.5 MTea	2 MTea	2 MTea	2 MTea	1 Tea		161.5 Twd - 160	144	144	146	157
51											
52			3 Swk	3 Swk			2 Swk	2 Swk	2 Swk	2 Swk	2 Swk
53	128	128	128	128			128	128	128	128	128
54	11 Tea	12 NTea	12 NTea	13 NTea			14 NTea	15 NTea	15 NTea	4 Tea	157
55			3 Swk	3 Swk	1 Swk	161.5 Twd	137	127.5			
56	150	149	149	149				149		149	149
57	5 Tea		8 Tea	9 Tea			12 NTea	12 NTea	12 NTea	12 NTea	12 NTea
58	131	131	131	131			131	131	131	131	131
59	13.5 NTea	15.8 NTea	15 NTea	15 NTea			14 NTea	13 NTea	12 NTea	12 NTea	13 NTea
60	128	128	128	128			128	127	127	127	127
61	9 Tea		12 NTea	13 NTea			14 NTea	15 NTea	16 NTea	16 NTea	16 NTea
62	168	168	168	168			140	140	140	132	128
63		9 Tea	9 Tea	9 Tea			9 Tea	9 Tea	10 Tea	9 Tea	9 Tea
64	133	133	133	133			133	133	133	133	133
65	145	132	128				127	127	127	127	127
66	128	128	128	128			128	128	128	128	128
67	127	127	127	127			127	127	127	127	127
69	13 NTea	14 NTea	15 NTea	15 NTea			14 NTea	14 NTea	12 NTea	10 Tea - 1 Tea	144
70	132	132	132	132			132	132	132	132	132
71								1 WTea - 1 Tea	169	163	144
73			4 Swk	4 Swk			4 Swk	4 Swk	4 Swk	7 Swk	6 Swk
74	4 Swk		4 Swk	7 Swk			4 Swk	4 Swk	161.5 Twd - 155	141	128
75	16.5 NTea	15.8 NTea	12 NTea	13 NTea			14 NTea	14 NTea	12 NTea	12 NTea	13 NTea
76	144	128	127.5				127	127	127	127	127
77	127	127	127	127			127	127	127	127	127
78	160	160	160	160			160 - 161.5 Twd	161.5 Twd	166	171	171
79	169 - 1 Swk		2 Swk	2 Swk			4 Swk	4 Swk	4 Swk	4 Swk	4 Swk
80	158	161.5 Twd		166.1			2 Tan	1 Tan	2 Tan	2 Tan	2.5 Tan

Tag #	4/22/06	4/23/06	4/24/06	4/25/06	4/26/06	4/27/06	4/28/06	4/29/06	5/1/06	5/3/06	5/4/06	5/5/06
46			135	135	135	135	135		135	135	135	135
47			175	175	175	175	175		175	175	175	175
48			172	172	172	149	135		127.9			
49			134	134	134	134	134		134	134	134	134
50		161.5 Twd	1 Tea	3 Tea	5 Tea	7 Tea	9 Tea		1 WTea	1 WTea	1 WTea	167
51												
52			2 Swk	4 Swk	4 Swk	5 Swk	5 Swk		11 Swk	5 Swk	13 Swk	9 Swk
53			128	128	128	128	128		128	128	128	128
54	127.9			127								
55				127								
56				149								
57			12 NTea	12 NTea	3 Tea	161.5 Twd - 160						
58			131	131	131	131	131		131	131	131	131
59			1 Tea - 171	161.5 Twd - 156	144	135						
60			127	127					6 Yak			
61										17 NTea	15 NTea	1 Tea - 176
62	128			127								
63			9 Tea	9 Tea	9 Tea	9 Tea	9 Tea		9 Tea	9 Tea	9 Tea	9 Tea
64			133	133	133	133	133		133	133	133	133
65			127	127								
66			128	128	128	128	128		128	128	128	128
67			127	127								
69	128			127								
70			132	131	132	132	132		132	132	132	132
71		128	127.5	127								
73			6 Swk	6 Swk	8 Swk	7 Swk	7 Swk		7 Swk	5 Swk	5 Swk	5 Swk
74						47.1 Psr						
75			15 NTea	13 NTea	12 NTea	9 Tea	9 Tea		3 MTea	5 MTea	5 MTea	5 MTea
76			127	127								
77			127	127								
78			171	158	139	128		128				
79	161.5 Twd		139	128	127.5							
80			2.5 Tan	2.5 Tan	4 Tan	3 Tan	165 - 161.5 Twd	127.9				

Tag #	5/6/06	5/7/06	5/8/06	5/9/06	5/10/06	5/11/06	5/12/06	5/13/06	5/14/06	5/15/06	5/16/06	5/17/06	5/18/06	5/20/06
46			135	135	135	135			127.9	135	135	135	135	
47			175	175	175	175				175	175	175	175	
48			128			127.9			127.9			127.5		
49			134	134	134	134				134	134	134	134	
50			128						6 Yak					
51										127.9				
52			9 Swk	7 Swk	7 Swk					10 Swk	10 Swk	10 Swk	10 Swk	1 Swk
53			128	128	128	128				128	128	128	128	
54	6 Yak					127.9								
55							127.9							
56														
57		6 Yak												
58			131	131	130	130				130	130	130	130	
59											128	128	128	
60														
61	161.5 Twd					127.9								
62														
63			9 Tea	9 Tea		9 Tea				9 Tea	9 Tea	9 Tea	9 Tea	
64			133	133	133	133				133	133	133	133	
65														
66			128	128	128	128				128	128	128	128	
67														
69														
70			132	132	132	132				132	132	132	132	
71														
73			5 Swk	4 Swk	4 Swk		161.5 Twd			128	128	128	128	
74								127.5						
75			4 MTea	4 MTea	4 MTea	4 MTea				10 Tea		6 Tea	6 Tea	
76							127.9							
77							127.9							
78							6 Yak							
79														
80							127.9							

Tag #	5/21/06	5/22/06	5/23/06	5/24/06	5/25/06	5/26/06	5/27/06	5/28/06	5/29/06	5/30/06	5/31/06	6/1/06
46												
47			176			176					175.5	
48						128					127.5	
49			133			133.5					133.5	
50												
51												
52	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	1 Swk	128	128
53												
54												
55												
56												
57												
58			130			131					129.5	
59						128						
60												
61												
62												
63			9 Tea			9 Tea					8.5 Tea	
64			133			133					132.5	
65												
66			128			128						
67												
69												
70			131.5			131.5					132	
71												
73			129			129					129	
74												
75			6 Tea			6 Tea					6 Tea	
76						127					127	
77						126					126	
78												
79												
80												

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	3/31/06	4/1/06	4/3/06	4/4/06	4/5/06	4/6/06	4/7/06	4/10/06
81	F	2.2	58	71	7.5	128	128	157	161.5 Twd - 162	166	171	1 Tea	8 Tea
82	F	2.2	55	66	6.7						128	128	128
83	F	2.2	57	68	6.5						128	130	131
84	F	2.2	55	67	6.7				128				144
85	F	r.2	57	69	6.1								
87	F	2.2	57	68	6.5						128	131	148
88	F	2.1	48	57	4.6				128	139	147		
89	F	2.2	54	66	6.6							128	161.5 Twd
90	M	2.2	57	71	7.6				128	128	128	128	128
91	F	2.2	58	68	6.8								
92	M	r	64	79	10.1						128	144	160 - 161.5 Twd
93	F	r.2	57	69	6.9								
95	F	r.2	54	65	6.6								
96	F	2.2	53	63	5.5						128	144	160
97	M	2.2	59	72	7.9						128	145	160 - 161.5 Twd
98	F	2.2	50	62	4.9					143		148	154
99	F	2.2	52	63	5.2							128	131
100	M	2.1	52	65	5.5								
101	M	2.2	67	81	9.4								
102	M	r.2	62	76	10.2								
103	M	2.1	52	65	6.6								
104	F	2.1	50	61	4.8								
105	M	2.2	59	72	7.4								
106	F	2.1	51	61	4.7								
107	F	r.2	53	64	5.8								
108	F	2.2	59	70	6.7								
109	F	2.2	55	67	6.3								
110	M	2.2	57	70	6.2								
111	F	r.2	55	66	6.1								
113	F	2.2	57	70	7.7								
114	F	3.2	52	64	5.1								
115	F	2.1s1	54	66	5.9								
116	F	r.2	61	73	7.8								
117	F	2.1	50	62	5.2								

Tag #	4/11/06	4/12/06	4/13/06	4/14/06	4/17/06	4/18/06	4/19/06	4/20/06	4/21/06	4/22/06	4/23/06
81	8 Tea	9 Tea	8 Tea	8 Tea	8 Tea	8 Tea	9 Tea	8 Tea	8 Tea		
82	128	128	128	128	128	128	128	128	128		
83	132	132	132	132	133	133	133	134	144		
84	150	148	149	149	128	128	128	128	128		
85		128	140		150	150	158	161.5 Twd - 164	1 Tea		
87	150	154	160 - 161.5 Twd	168	185.6 CleE						
88			154		154	149	141	131	127.5		
89	163	163				167	167	167	167		
90	128	128	128	128	128	128	128	128	128		
91	128	148	161.5 Twd	160		160	127.9				
92	166	175 - 1 Tea	4 Tea	7 Tea	12 NTea	12 NTea	16 NTea	19 NTea	19 NTea		
93		128	128	128	128	128	128	128	128		
95							128	145	155		
96	160	160 - 161.5 Twd	164	164	175 - 1 Tea	3 Tea	5 Tea	8 Tea	8 Tea		
97	164	171	171	176	179	181	179	181	183 - 185.6 CleE		
98	154	154	154	154	154	154		154			
99	134	139	144	146	149		155	160	161.5 Twd - 164		1 Swk
100							128	147	157 - 161.5 Twd		
101								128	145		
102							128	140	154		161.5 Twd
103								128	147		161.5 Twd
104							128	139	155	161.5 Twd	
105								128	131		
106							128	130			
107								128	141		161.5 Twd
108								128	154	161.5 Twd	1 Tea
109								128	132		
110								128	155	161.5 Twd	1 Swk
111								128	135		
113								128	146		161.5 Twd
114								128	132		
115							128	132	132		
116							128		128		
117								128	141		

Tag #	4/24/06	4/25/06	4/26/06	4/27/06	4/28/06	4/30/06	5/1/06	5/2/06	5/3/06	5/4/06	5/5/06
81	8 Tea	8 Tea	8 Tea	8 Tea	8 Tea		7 Tea		7 Tea	7 Tea	7 Tea
82	128	128	128	128	128		128		128	128	128
83		158	161.5 Twd	169	1 Tea - 175		4 Tea		9 Tea	11 Tea	1 WTea
84	128	127									
85	9 Tea	9 Tea	11 Tea	11 Tea	13 NTea		13 NTea		15 NTea	14 NTea	15 NTea
87	202.5	202.5	202.5	202.5	201		202.5		202.5	201	201
88							6 Yak				
89		128	128	128	128						
90	128	128	128	128	128		128		128	128	128
91		127.9				127.5					
92	20 NTea	20 NTea	20 NTea	20 NTea	1 Staff		0.5 Staff		19 NTea		1 Staff
93	128	128	128	128	128		128		128	128	128
95	158	161.5 Twd	158	158	158		147		134	134	134
96	13 NTea	13 NTea	14 NTea	14 NTea	16 NTea		15 NTea		14 NTea	14 NTea	14 NTea
97			185.6 CleE				167		167	167	167
98		132									
99			4 Swk	5 Swk	9 Swk		11 Swk		12 Swk	13 Swk	13 Swk
100	160	160	160	160	160		156		155	149	149
101	145	145	145	145	145		145		145	145	145
102	169	1 Tea	1 Tea	3 Tea	6 Tea		5 Tea		1 Tea	177	176
103	168 - 1 Swk			5 Swk	7 Swk		8 Swk		12 Swk	5 Swk	4 Swk
104		167	166.1 Tan - 1 Tan	3 Tan	3 Tan		5 Tan		6 Tan	6 Tan	6 Tan
105		127									
106	134	140	144	144							
107	164	172 - 1 Tea	2 Tea	6 Tea	8 Tea		1 WTea		3 WTea	2.5 WTea	3 WTea
108	6 Tea	8 Tea	1 WTea	3 WTea	3 WTea		3 WTea		3 WTea	2.5 WTea	176
109		155	161.5 Twd		2 Tan		3 Tan		4 Tan	5 Tan	6 Tan
110					4 Swk		170		167	167	165
111				150	150						
113	171 - 1 Tea	3 Tea	5 Tea	9 Tea	1 WTea						
114				156	157		160	161.5 Twd	161.5 Twd	167	1 Tea
115	132	132	136	144	148		150		156	160 - 161.5 Twd	167
116	128	128	128	128	128		128		128	128	128
117	157	161.5 Twd	168	175 - 1 Tea	1 Tea - 2 Tea				178	178	161.5 Twd - 150

Tag #	5/6/06	5/7/06	5/8/06	5/9/06	5/10/06	5/11/06	5/12/06	5/13/06	5/14/06	5/15/06	5/16/06
81			7 Tea	7 Tea		7 Tea				7 Tea	7 Tea
82			128	128	128	128				128	128
83			2.5 WTea	4 Tea	161.5 Twd - 158	132	127.9				127.9
84											
85				161.5 Twd	140		127.9				
87											
88											
89											
90			128	128	128	128				128	128
91											
92			19 NTea	19 NTea		20 NTea				1 Staff	1 Staff
93			128	128	128	128				128	128
95	128	127.5									127.9
96			16 NTea	1 Tea - 176	161.5 Twd	140	128				
97			167	167	167	167					167
98											
99			8 Swk	7 Swk	164 - 161.5 Twd	147	128	127.5			
100			140	140	140	140				135	133
101			145	145	145	145				145	145
102			176.1	173 - 161.5 Twd	149	128	127.9		127.5		128
103			5 Swk	4 Swk	5 Swk					1 Swk	5 Swk
104			6 Tan	6 Tan	5 Tan	5 Tan				5 Tan	5 Tan
105											
106											
107				161.5 Twd	149						
108		161.5 Twd	128	128	128	128				128	128
109			5 Tan	5 Tan	164						
110			165	165	165	165				165	165
111											
113			3.5 WTea	172	168	171	161.5 Twd	127.9		127.5	
114			6 Tea	11 Tea		11 Tea			1 Tea	161.5 Twd - 154	127.5 - 113.2 Ter
115	1 Tea		6 Tea	8 Tea	11 Tea	1 MTea				3 WTea	4 WTea
116			128	128	128	128				128	128
117			132	128	128	128			127.9	128	128

Tag #	5/17/06	5/18/06	5/22/06	5/23/06	5/24/06	5/25/06	5/26/06	5/30/06	5/31/06
81	6 Tea	5 Tea		3 Tea			3 Tea		2 Tea
82	128	128					128		
83									
84									
85	127.5						126		125
87									
88									
89							126		125
90	128	128							
91									
92	19 NTea	18 NTea							
93	128	128					128		
95									
96				128	127.5				
97	167								
98									
99		6 Yak							
100	128	128							
101	145	145		145			145		145
102	128						127		127
103	8 Swk	4 Swk	161.5 Twd	145			6 Yak		
104	5 Tan	5 Tan		5 Tan			5 Tan		5 Tan
105									
106									
107									
108	128	128							
109									
110	165	165		165			165		
111									
113	127.9 - 113.2 Ter	6 Yak							
114									
115						113.2 Ter		6 Yak	
116	128	128					128		
117	128								

Tag #	Sex	Age	POL (cm)	FL (cm)	Weight lbs	1/13/06	1/18/06	1/19/06	1/20/06	1/23/06	1/24/06	1/25/06	1/26/06	1/27/06	1/29/06
118	F	2.2	56	67	6.3										
119	F	2.1	51	63	5.8										
120	M	2.2	62	73	7.4										
121	M	r.1	47	59.5	4.7										
122	M	2.2	57	71	7.2										
123	M	2.2	55	67	6.1										
124	M	2.1	45	56	4										
125	M	2.1	49	60	4.8										
126	F	r.1s	56	68	6.1										
127	F	2.2	57	68	6.8										
128	M	r.2	57	71	7.1	128	149	149	149	149	151	151	151	151	151
129	F	2.1s	50	61	5.1										
130	M	r	59	71	6.7										
131	F	r.2	60.5	72.5	7.9										
132	F	3.2	57	67	6.5										
133	M	r.2	62	74.5	8.7										
134	F	r.1	51	62.5	5.4										

Tag #	2/1/06	2/2/06	2/3/06	2/5/06	2/6/06	2/7/06	2/8/06	2/9/06	2/10/06	2/13/06	2/14/06	2/15/06	2/16/06	2/17/06
118														
119														
120														
121			128				156			147				
122														
123														
124						136	146		152	152	152	152	152	152
125														
126														
127														
128	154	154		159		159	159	159	159	160	160	161.5 Twd	161.5 Twd	161.5 Twd
129														
130														
131														
132														
133														
134					128	130	130	130	130	130	130	130	130	130

Tag #	2/21/06	2/22/06	2/23/06	2/24/06	2/27/06	2/28/06	3/1/06	3/2/06	3/3/06	3/4/06	3/5/06	3/6/06	3/7/06
118									128			130	134
119													
120								128	128			128	128
121			154	154	153	153		154	159			153	156
122													
123						128	134	143	146				
124	152	152	156	160	160	161.5 Twd	162	162	169				
125									128	128		129	130
126													
127													
128	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	161.5 Twd	162		171	174			174	174
129													
130									128			147	
131								128	128			133	132
132													
133							128	138	147		161.5 Twd	161.5 Twd	161.5 Twd
134	130	130	130	130	130	130	130	130	130			130	130

Tag #	3/8/06	3/9/06	3/10/06	3/13/06	3/14/06	3/15/06	3/16/06	3/17/06	3/19/06	3/20/06	3/21/06	3/22/06	3/23/06
118	134	134	134	138	138	138	138	138		138	138	139	139
119	128	128	128		135	140	140	140		147			151
120	128	128	128	128	128	128	128	128		128	128	128	128
121	156	155	157	151	151	151	151	151		158	157	155	155
122						128	137	143		147	152	155	156
123					152	153	153	153		160 - 161.5 Twd	164	164	164
124							128	130	128	128	128	128	128
125	132	132	132	132	132	132	132	132		138	141	143	145
126						128	132	136			157	161.5 Twd	161.5 Twd
127										128	134	134	139
128	174	174	174	174	174		174	174		176.1	4 Tea	7 Tea	9 Tea
129										128	144	156 - 161.5 Twd	
130					152	156	161.5 Twd	161.5 Twd		176.1	4 Tea	6 Tea	6 Tea
131	138	140	141	142	146		146	146			155	158	158
132										128	133	134	134
133	168	173	175	175	175		175	175	1 Tea	6 Tea	7 Tea	10 Tea	10 Tea
134	130	130	130	130	130	130	130	130		130	130	130	130

Tag #	3/24/06	3/25/06	3/26/06	3/27/06	3/28/06	3/29/06	3/30/06	3/31/06	4/1/06	4/2/06	4/3/06	4/4/06	4/5/06
118	139					139	139	139	139		139	139	139
119	151			160		161.5 Twd	166					185.6 CleE	
120	128			128		128	128	128			128	128	128
121	155			155		157	157	154			154	154	154
122	156	161.5 Twd		156		155	155	158				166	176
123	164		1 Tea	4 Tea		9 Tea	9 Tea	9 Tea			10 Tea	1 WTea	1 MTea
124	128			128		128	128	128			128	127	127
125				154		154	157	156			159	160	160
126				172		167	168	168	161.5 Twd			127	127
127	145			154		153		154	161.5 Twd		162	162	162
128	10 Tea			11.7 Tea		11.7 Tea	12 NTea	12 NTea			1 WTea	11.7 Tea	1 MTea
129	1 Swk							9 Swk			13 Swk	13 Swk	12 Swk
130	8 Tea			10 Tea		11 Tea	11.7 Tea	11.7 Tea			9 Tea	9 Tea	8 Tea
131	161.5 Twd			163			160	160			157	157	157
132	133			133		133	133	133			133	133	133
133	10 Tea			11.7 Tea		11.7 Tea	11.7 Tea	11.7 Tea			1 MTea		2 WTea
134	130			130		130	130	130			130	130	130

Tag #	4/6/06	4/7/06	4/9/06	4/10/06	4/11/06	4/12/06	4/13/06	4/14/06	4/15/06	4/17/06	4/18/06	4/19/06	4/20/06
118	139	139		139	139	139	139	139		139	139	139	139
119		189							161.5 Twd	128	128	128	128
120	128	128		128	128	128	128	128		128	128	128	128
121	154	154	127.5		127	127	127	127		127	127	127	127
122	2 Tea	5 Tea			8.5 Tea	8.5 Tea - 1 Tea	171	170	161.5 Twd	160	160	160	160
123	2 WTea	11 Tea		14 NTea	15 NTea	14.5 NTea	15 NTea	15 NTea		14 NTea	14 NTea	14 NTea	14 NTea
124	127	127		127	127	127	127	127		127	127	127	127
125	160	159		160		160	160 - 161.5 Twd	160		160	160	160	160
126	127	127		127	127	127	127	127		127	127	127	127
127	162	163		163	163	163	163	163		163	163	163	163
128	11 Tea	2 WTea									1 WTea	12 NTea	12 NTea
129	8 Swk	8 Swk		169	168	168 - 161.5 Twd	168	148		128	128	128	128
130	9 Tea	9 Tea		8 Tea	8 Tea	9 Tea	8 Tea	8 Tea		6 Tea	8 Tea	11 Tea	12 NTea
131	157	157			128	128	128	128		128	127	127	127
132	133	133		133	133	133	134	134		134	134	134	134
133	3 WTea										3 WTea	3 WTea	
134	130	130		130	130	130	130	130		130	130	130	130

Tag #	4/21/06	4/24/06	4/25/06	4/26/06	4/27/06	4/28/06	4/29/06	5/1/06	5/2/06	5/3/06	5/4/06	5/5/06
118	139		139	139	139	139	139		139		139	139
119	128	128	128	128	128	128						
120	128	128	128	128	128	128		128		128	128	128
121	127	127	127									
122	160	160	160	160	160	160		160		160	160	160
123	14 NTea	14 NTea	11 Tea	1 WTea	3 WTea	3 WTea		3 WTea		3 WTea	2.5 WTea	3 WTea
124	127	127	127									
125	160	160	160	158	158	158		160		160	160	160
126	127	127	127									
127	163	163	163	163	163	163		163		163	163	163
128	12 NTea	12 NTea	12 NTea	11 Tea	11 Tea	11 Tea		9 Tea		9 Tea - 1 Tea	1 Tea	161.5 Twd - 156
129	128	128	127									
130	14 NTea	10 Tea	8 Tea	8 Tea	8 Tea	7 Tea		9 Tea			6 Tea	3 Tea - 1 Tea
131	127	127	127									
132	134	134	134	134	134	134		133		133	133	133
133		9 Tea	176.1	168 - 161.5 Twd	156	145						
134	130	130	130	130	130	130		130		130	130	130

Tag #	5/6/06	5/8/06	5/9/06	5/10/06	5/11/06	5/12/06	5/15/06	5/16/06	5/17/06	5/18/06	5/19/06	5/20/06	5/23/06	5/26/06	5/31/06
118	139		139	139	139	139		139	139	139	139		138	138	138.5
119															
120		128	128	128	128		128	128	128	128			128		
121															
122		160	160	160	160		160	160	160	160					
123		2.5 WTea	11 Tea	11 Tea	11 Tea		11 Tea	11 Tea	11 Tea	11 Tea			11 Tea	11 Tea	11 Tea
124														128	
125		160	139	127.9								127.5		128	
126															
127		163	163	163	163		163	163	163	163			163	163	163
128		135	135	134	130				130	128			130	131	131
129															
130		173	173	173	173		173	173	173	173			174		173
131						127.9									
132		133	133	133	133		133	133	133	133			131.5	131.5	131.5
133						127.9									
134		130	130	130	130		130	130	130	130			130	130	129.5

Appendix 2a. Dates that steelhead kelts moved downstream at Roza Diversion Dam, Yakima River, January-June 2003. (gate manipulations May 9, May 23-27).

Date	Tag Number
1/31	4
3/1 – 12	8
3/19	45
3/22 – 23	42
3/31	12, 29
4/1	5, 23, 30, 39
4/3	18
4/5 – 7	65
4/12	32, 49, 62
4/12 –14	24
4/14 – 15	68
4/17	59
4/23	208
4/24	201
4/25	47, 192, 209
4/26	189
5/1	190
5/5 – 6	67, 68B
5/17 – 29	73
5/18 – 6/1	76

Appendix 2b. Dates that steelhead kelts moved downstream at Roza Diversion Dam, Yakima River, March-May 2004 (gate manipulations April 27-29, May 4-6, May 14-21).

Date	Tag Number
3/12 – 4/15	7
3/19 – 29	141
3/19 – 4/14	22
3/29 – 3/31	26
4/5	108
4/6 – 12	100
4/7	97
4/7 – 8	101
4/8	76, 110
4/8 – 14	104, 136
4/9	9
4/9 – 13	82
4/10	148
4/10 – 11	107
4/10 – 13	42, 57
4/11 – 12	146
4/12	23
4/13 – 15	99
4/14 – 17	49
4/24 – 26	16
4/26 – 28	73
4/27	8, 102
4/27 - 28	96, 132
4/28	43
4/29	32
5/1 – 7	39
5/2 – 12	88
5/3 – 6	139
5/4	184
5/5	95
5/9	150
5/14	56

Appendix 2c. Dates that steelhead kelts moved downstream at Roza Diversion Dam, Yakima River, April-May 2005 (gate manipulations April 22-29, May 10-13, June 8-9).

Date	Tag Number
4/2 – 3	28
4/8 – 9	17
4/9	45
4/10	29
4/11 – 12	1
4/17	94
4/19 – 20	33
4/19 – 22	106
4/20 – 22	73
4/22	30, 75, 81, 117
4/23	118
4/28	122
4/28 – 29	104
4/29	60,103
4/29 – 30	105
4/30 – 5/2	76
5/1 – 2	97
5/2	90
5/3 – 5	21
5/5	93,101
5/5 – 6	102
5/6	72, 120
5/7	134
5/8 – 10	141
5/9	124
5/10	119
5/13	137
5/13 – 14	55
5/14 – 15	95
5/14 – 16	136
5/15 – 16	111
5/17	87

Appendix 2d. Dates that steelhead kelts moved downstream at Roza Diversion Dam, Yakima River, April-May 2006 (gate manipulations March 31-April 3, April 7-13, April 25-May 3, May 16, May 18-May 24, June 15, June 20).

Date	Tag Numbers
4/1 – 6	51
4/17 –18	60
4/21	88
4/21 - 27	74
4/22 – 28	54
4/28 – 5/7	57
5/1 – 13	78
5/8 – 14	50
5/13	99
5/15	113
5/17	85
5/17 – 18	27, 41
5/17 – 25	115
5/19 – 26	35
5/24 – 26	103