Columbia Spotted Frog

(Rana luteiventris)

2005 Monitoring Report

Dry Creek, Oregon

Prepared for the Vale District, Bureau of Land Management

by

Janice C. Engle
US Fish and Wildlife Service
2800 Cottage Way Room 2605
Sacramento, CA 95825

Raymond J. Hennekey
Idaho Department of Fish and Game
1540 Warner Avenue
Lewiston, ID 83501

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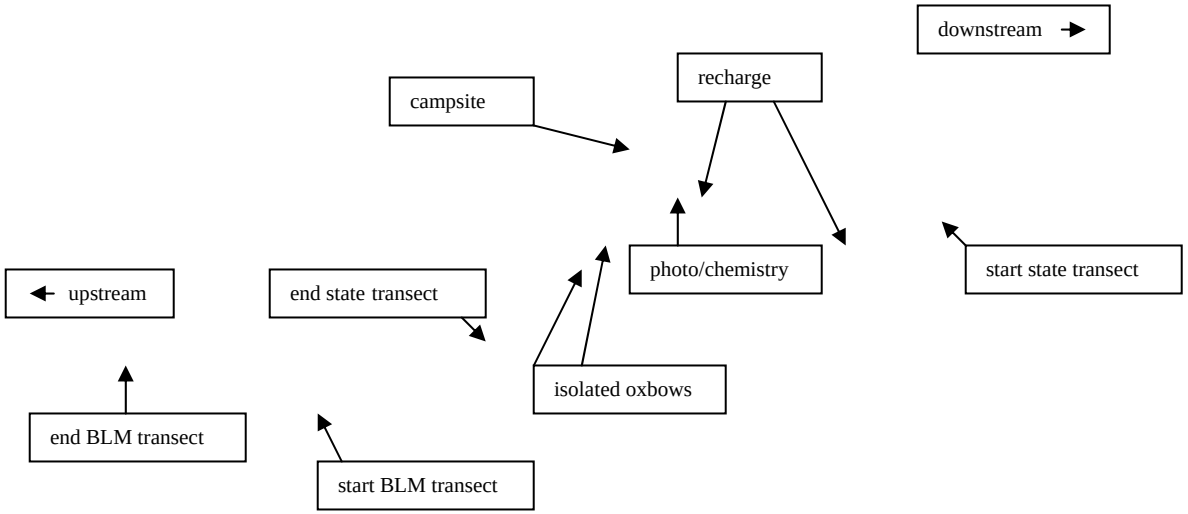
DRY CREEK SPOTTED FROG SURVEY SITE



Landmark locations for reference in text

This map does not include capture locations for the 2005 survey season

Introduction

This report summarizes the results of the fifth year of the Dry Creek Monitoring project for Columbia spotted frogs (*Rana luteiventris*), with incidental observations of other herpetofauna. The protocol followed for this survey is described in Appendix I.

Although the summer of 2004 was another drought year, aquatic habitat connectivity was not as limited as that observed in previous years, and ambient air temperatures during surveys were considerably cooler. Several stream reaches that were dry in August of previous years maintained water throughout the season in 2004. Metamorph and subadult numbers were greater in 2004 than previous years, possibly due to improved habitat conditions (vegetative cover, wet connectivity).

Figure 1. Riparian habitat in June 2005.

The spring of 2005 continued the wetter pattern with cooler temperatures. Vegetation and stream conditions in June of 2005 received the highest ratings since monitoring began in 2001 (Figure 1) and water was more widespread (cover photo) along the stream corridor than had been observed in previous years. Precipitation was higher than normal in the spring of 2005. Subadult frogs reached their highest documented numbers in June 2005. However, by August, riparian habitat ratings declined to very poor in specific sections (not all) of the survey transect (Figure 2), the lowest ratings since monitoring began. Metamorph frog numbers were approximately 50% lower in 2005 than in 2004.

Dry Creek was visited twice this summer; by Janice Engle and Ray Hennekey from June 4 through June 7 to conduct the mark-recapture survey (four days to make two complete passes) and measure habitat parameters; and then on August 11, by Janice Engle, Robby Engle, Marisa Meyer, and Keith Paul to determine annual recruitment success and to score habitat parameters again.

Figure 2. Riparian habitat in August 2005.

Monitoring Results

Table 1. Monitoring data.

Date	Time	Water temp	DO	Con	pH	SSAR	VUBA	L-P Population Estimate	Recruitment
6 Jun 01	1310	17.3C	14.65	191.5	9.2	0-25%	0-25%	74	-
4 Aug 01	1335	22.3C	16.46	246.4	9.3	26-50%	76-100%	-	yes
6 Jun 02	1315	22.5C	*	*	*	26-50%	51-75%	**	-
11 Aug 02	1300	21.8C	***	340	8.9	51-75%	76-100%	-	yes
6 Jun 03	1200	20.9C	12.6	270	9.1	51-75%	0-25%	62	-
9 Aug 03	1355	24.9C	16.3	310	8.9	51-75%	26-50%	-	yes
6 Jun 04	1515	22.2C	13.8	250	8.9	51-75%	51-75%	168	-
20 Aug 04	1440	26C	14.8	280	9.0	26-50%	26-50%	-	yes
6 Jun 05	1730	17.0C	14.4	230	8.9	0-25%	0-25%	255.2	-
11 Aug 05	1249	21.0C	15.4	260	9.1	51-75%	76-100%	-	yes

(for description of habitat measures, see Appendix I. SVSR has been removed from the analysis because it is not the appropriate measure to detect changing vegetative conditions)
**equipment failure*
***unable to calculate LP due to PIT-tag reader failure*
****not recorded*
Standard photo point and water chemistry point is mid-way of the State transect (Figure 3).

Figure 3. Dry Creek standard photo point, June 6, 2005 and August 11, 2005.

JUNE 2005

We began our survey of the Dry Creek transect on June 4, 2005 at 1336 hrs. The weather was clear (27ºC/80ºF). Proceeding west from the state land start point, we surveyed upstream to the campsite until 1904 hrs. It became mostly cloudy, but it was warm and pleasant all afternoon. The depth of the water in the third pinch was a bit shallower even though water levels appeared up. High spring flows may have deposited more sediments and changed the channel

configuration. Several new channels were observed connecting the scour pools. Tadpoles were observed at the lower side channel breeding site as well as along the stream near the scour pool breeding site (Figure 4). Seventy frogs (mostly subadults) were observed on this first day of the survey.

Figure 4. Side channel oxbow breeding site. Although this breeding site is usually isolated, in June 2005 it was connected to the main channel at its outflow (left). By August, it was isolated and exposed (right).

On day two, Ray conducted a gastric lavage on three native trout. No frogs or tadpoles were observed in the flushed stomach contents; two stomachs were empty and one contained a few unidentified macroinvertebrates.

We did not proceed with the frog survey on the morning of June 5 because of rain and wind. Starting at the oxbow below the campsite, we realized that our capture rate would be very low – frogs were extremely skittish and those that were up the previous evening were not up in the rain and wind. We used the time to hike to the end of the state transect so that we could at least complete the second pass of the previous day's survey route in the afternoon. Although the rain stopped, it remained windy and mostly cloudy (air temperature 13ºC/55ºF). Sixty-nine frogs were observed on the second pass of the lower state transect. In 2004, a few cattails had established in the area below the campsite, but none were observed in 2005. A few new, small willows were noted in this transect – just downstream of the third pinch and on the deposition bar below the second pinch (Figure 5). The only available overwintering habitat in this section

Figure 5. New willow growth on the State section of the transect.

of Dry Creek appears to be active muskrat runs and burrows along the banks of the main channel (Figure 6).

Figure 6. Muskrat channels under vegetation and holes in the bank.

On June 6, we completed the first pass of the remaining State section and all of the BLM section. Although the weather was mostly clear, it was still breezy and cool. We began the survey below the campsite and worked upstream all the way through the BLM transect. By afternoon, there were scattered showers; then it cleared and became breezy. Most noteworthy was the degree of wet habitat connectivity. Additionally, some side channels, previously dry, had water that provided extra suitable habitat (Figure 7 and cover photo).

Figure 7. Side channels held water in June, increasing suitable habitat and facilitating connectivity.

At dusk, two minnow traps were placed in the stream corridor below the campsite in an attempt to capture frogs migrating along the channel bank during the evening hours. Although trapping efforts had been successful in spotted frog occurrences in Idaho, we had not previously attempted this technique at the Dry Creek site.

The evening of June 6 was relatively cold and the temperature at the campsite was 4ºC/39ºF at 0800 on June 7. We began the day by checking the traps. Not only were no frogs captured, but individual frogs were not observed at the occupied oxbow below the campsite by 1030 hrs. Therefore, we chose to hike to the upstream end of the BLM transect in hopes that it would warm up by the time we arrived to survey for the second pass. We began capturing frogs at noon on the BLM section, and collected swab samples for the USGS Emergence of C*hytridiomycosis* in the Pacific Northwest study (Dr. Michael J. Adams, principal investigator). Twenty subadult frogs from the transect were sampled (Figure 8) according to the standard protocol. One frog sampled for C*hytridiomycosis* was noted to have reddish coloration on its inner thighs (Figure 9); but this coloring was not as severe as that of infected frogs in Idaho.

Figure 8. Sample swabs for chytridiomycosis survey.

Figure 9. Sample frog with reddish thigh skin.

No adult frogs were observed this year in the BLM section. Subadults were scattered along the main channel. No frogs were observed in the oxbow pool that was previously occupied by adults. Subadults were also scattered along the main channel in the upper half of the State section, perhaps facilitated by wet connectivity throughout 2004. The greatest density of subadults was found in the isolated oxbow pools just downstream from the natural exclosure. Although these pools were unoccupied in previous years, this year they provided very suitable habitat (Figure 10). Frogs were once again difficult to observe and capture in the natural exclosure due to thick vegetation. However, a small patch of cattails was washed out by high flows, creating a small opening where frogs were observed basking (Figure 11). Frogs were also observed in the dense cattails, and it is presumed others were present, but well concealed.

Figure 10. (left) Isolated oxbow pool below natural exclosure, site of many subadults.

Figure 11. (above) Spotted frog in opening in cattails.

We observed great horned owls on the BLM cliff, in the same location as previous years (Figure 12) and saw more prairie falcons along the entire survey route this year than in years past. Other birds observed or heard during the spring survey included:

Blackbird	California quail
Killdeer	Prairiefalcon
Kingfisher	Meadowlark
Chukar	Mallard
Poorwill	Swallows
Flicker	Shrike
Say's phoebe	Starling
Horned lark	Canyon wren
Kestrel	Great blue heron
Turkey vulture	Rock Dove
Magpie	Raven
Nighthawk	Red-tailed hawk
American robin	

We found a bird band just north of the creek in the State section and submitted it to USGS for identification. It was identified as a white-faced ibis, too young to fly when banded in 1996.

Figure 12. Great horned owl nesting site.

Mammals observed in the survey area included: badger, mule deer, jackrabbit, antelope ground squirrel, Paiute ground squirrel, golden-mantled ground squirrel, porcupine (remains of a carcass found in August), and coyote. Snake observations are listed in Table 2.

Table 2. Snake observations (June survey).

	Thamnophis elegans	*Thamnophis sirtalis*	*Pituophis catenifer*	*Coluber constrictor*	*Crotalus viridis*
2001	*	*	2	2	2
2002	14	1	1	1	0
2003	40	2	4	2	1
2004	14	0	0	1	0
2005	15	0	0	1	1

The Lincoln-Peterson Population estimate for the State transect was calculated as follows:

First pass x second pass / recaptures = 88 x 87/30 = 255.2

The gender and age distribution data for the State section is listed in Table 3.

Table 3. State section population (June survey results) 2001-2004.

YEAR	FEMALES	MALES	SUBADULTS	UNCAPTURED
2001	9	2	39	5
2002	9	2	20	8
2003	9	2	41	9
2004	26	10	61	14
2005	18	8	119	18

AUGUST 2005

We began at 0900 at the upstream BLM start point and surveyed through to the end of the State transect by 1540. The weather ranged from clear and calm, 20ºC/68ºF to clear and breezy, 34ºC/93ºF by late afternoon. Despite wide wet connectivity in June, most of the BLM section was now completely dry (Figure 13). No frogs were observed on the BLM section; however, metamorphs were scattered along the upstream portion of the State section, on the edges of the main channel, where they had not been observed in previous years, as well as throughout the rest of the

Figure 13. BLM transect start point, looking downstream, to the east.

state section. Two kills were observed along Dry Creek in the upper State section: a porcupine and a large, unidentified raptor (Figure 14).

Figure 14. Remains of a bird kill next to the creek.

As in past surveys, the oxbow pools on the State section supported adult frogs, while metamorphs were more common along the migratory channel. In previous years, the outflow channel below the recharge pool (below the campsite) was a site of high metamorph use. However, in August 2005, no frogs were observed there, possibly because most of the riparian vegetation had been removed by grazing (Figure 15). The vegetative condition of the riparian area varied greatly throughout the State transect, which made it difficult to determine the habitat ratings. Some areas had received little grazing use, while others had received heavy use (Figure 16). No livestock were present during the survey, however. As noted in previous years, the only riparian habitat that exhibits any complexity with woody growth is in the natural exclosure, where livestock cannot gain access. Native ungulates use that area however, as evidenced by bedding areas and fecal pellets commonly observed there.

Figure 15. Recharge pool and outflow channel below State section campsite. No frogs were observed here in August 2005.

Figure 16. Riparian condition varied greatly throughout the survey route in August.

Discussion

Although 364 frogs have been PIT-tagged in the Dry Creek survey area, only 20 have been captured in more than one year (Table 4). Most were captured first as subadults, and subsequently as adults (when gender could be determined). Only five frogs have been captured across three or more years, and only one of those was an adult at its first capture. That frog, female #434E2B7F25 was at least in her fifth year in 2004; she was not recaptured in 2005. The other four frogs, all females, were in their fourth year at their last capture. No other frogs could be verified as over three years in age. For the purposes of this report, "age" is defined as follows:

First year: first calendar year of life (egg, tadpole, metamorph stages)
Second year: second calendar year of life (previous year's metamorph cohort, now subadults)
Third year: third calendar year of life (previous year's subadult cohort, now adults)
Fourth year: fifth calendar year of life

Table 4. Recapture data. (green=subadult; red=female; blue=male)

CAPTURE	Hour	gen	mass	SVL	PIT tag	UTME	UTMN	distance
06/07/02	1309	F	34.5	75	4350506E41	441100	4816940	
06/07/03	1554	F	30.5	75	4350506E41	441097	4816938	3.61
06/06/01	1546	sa	9.7	49	41620A620B	442454	4817407	
06/08/01	1237	sa	9.3	49	41620A620B	442447	4817424	18.38
08/04/01	1217	f	23.6	65	41620A620B	442407	4817306	124.60
06/06/02	1105	F	30.1	70	41620A620B	442442	4817419	118.30
06/07/01	1103	sa	14.7	56	42384B4216	442745	4817588	
06/06/02	1157	F	36.5	73	42384B4216	442682	4817602	64.54
06/07/02	1050	F	35.0	74	42384B4216	442682	4817603	1.00
06/06/03	1532	sa	12.0	51	433C5D7064	443181	4817455	
06/07/03	1142	sa	11.5	52	433C5D7064	443174	4817464	11.40
06/07/04	1353	F	32.5	68	433C5D7064	443201	4817460	27.29
08/20/04	1308	F	28.5	67	433D052673	442344	4817270	
06/07/05	1503	F	24.0	67	433D052673	442254	4817154	146.82
08/11/02	1507	F	38.8	73	434E2B7F25	443169	4817464	
06/07/03	1147	F	36.0	74	434E2B7F25	443165	4817469	6.40
06/06/04	1304	F	48	78	434E2B7F25	443293	4817422	136.36
06/07/04	1316	F	48	78	434E2B7F25	443306	4817425	13.34
06/07/03	1003	sa	9.5	48	43504D4627	443489	4817431	
06/06/04	1102	F	27.5	67	43504D4627	443486	4817438	7.62
06/07/04	1130	F	28	67	43504D4627	443484	4817409	29.07
06/05/05	1526	F	29.5	72	43504D4627	443448	4817431	42.19
06/08/03	1553	sa	11.5	50	43512B2A78			
08/20/04	835	F	25	65	43512B2A78	441103	4816942	
06/06/04	1235	SA	13	52	435243287E	443356	4817414	
06/04/05	1520	F	27.5	67	435243287E	443318	4817419	38.33
06/07/03	1002	sa	14.0	52	43573B5E21	443489	4817431	
06/06/04	1104	F	28	66	43573B5E21	443486	4817438	7.62
06/08/03	1036	sa	12.0	51	435777396C	442695	4817595	

06/07/04	910	F	29	66	435777396C	442681	4817613	22.80
08/20/04	1709	F	34.5	71	435777396C	442676	4817611	5.39
06/04/05	1904	F	34.5	71	435777396C	442686	4817607	10.77
06/06/03	1212	sa	10.5	42	43577A5D43	442839	4817608	
06/04/05	1747	F	29.0	72	43577A5D43	442842	4817607	3.16
06/07/02	1230	F	14.5	54	4358056A44	440900	4816950	
06/07/03	1514	F	27.5	69	4358056A44	440804	4817010	113.21
08/09/03	1007	F	29	67	435852595C	441143	4816909	
06/05/04	1453	F	24	68	435852595C	441163	4816902	21.10
06/07/04	1750	F	24	68	435852595C	441163	4816902	0.00
06/06/04	1240	SA	8.5	45	43595D7C2A	443345	4817422	
06/07/04	1300	SA	8.5	45	43595D7C2A	443331	4817420	14.14
06/05/05	1622	M	12.0	54	43595D7C2A	443275	4817438	58.82
06/06/03	1215	sa	11.0	44	435A336346	442839	4817608	
06/07/03	1249	sa			435A336346	442839	4817608	0.00
06/06/04	1410	F	30.5	69	435A336346	442843	4817613	6.40
06/06/03	1436	sa	12.5	50	435A3B583D	443730	4817622	
06/07/03	907	sa	12.5	51	435A3B583D	443721	4817609	15.81
06/07/04	1110	M	19	57	435A3B583D	443662	4817552	82.04
06/06/04	1416	SA	10	48	435A4C6906	442733	4817601	
06/04/05	1851	M	16.0	56	435A4C6906	442686	4817607	47.38
06/05/05	1908	M	16.0	56	435A4C6906	442684	4817606	2.24
06/07/02	1311	M	18.0	52	435B2A2063	441100	4816940	
06/07/03	1559	M	18.5	58	435B2A2063	441097	4816938	3.61
06/08/03	1034	sa	10.5	49	435B2B0157	442695	4817595	
06/04/05	1852	F	31.0	70	435B2B0157	442686	4817607	15.00
06/05/05	1900	F	31.0	70	435B2B0157	442684	4817606	2.24
08/11/05	1259	F	34.0	73	435B2B0157	442681	4817603	4.24

Because adult survivorship appears to be low compared to other Great Basin spotted frog occurrences, it is increasingly important to monitor yearly recruitment into the population. Table 5 shows the number of metamorphs observed each August.

Table 5. Numbers of metamorphs observed, 2001-2005 (entire survey transect).

YEAR	NUMBER OF METAMORPHS
August 4, 2001	37
August 11, 2002	71
August 9, 2003	98
August 20, 2004	223*
August 11, 2005	100

**the entire transect was not completed.*

Another measure of recruitment success is to identify the number of metamorphs that survived their first winter and were observed the following year as subadults. Table 6 relates these two data sets.

Table 6. The relationship between the number of metamorphs observed and the number of subadults observed the following year (entire survey transect).

YEAR	NUMBER OF SUBADULTS	
June 2001	53	(? metamorphs in 2000)
June 2002	29	(37 metamorphs in 2001)
June 2003	73	(71 metamorphs in 2002)
June 2004	74	(98 metamorphs in 2003)
June 2005	134	(223 metamorphs in 2004)

Figure 17a shows the total of each age class present in the population each survey year. Figure 17b. shows the numbers of males and females captured at each SVL.

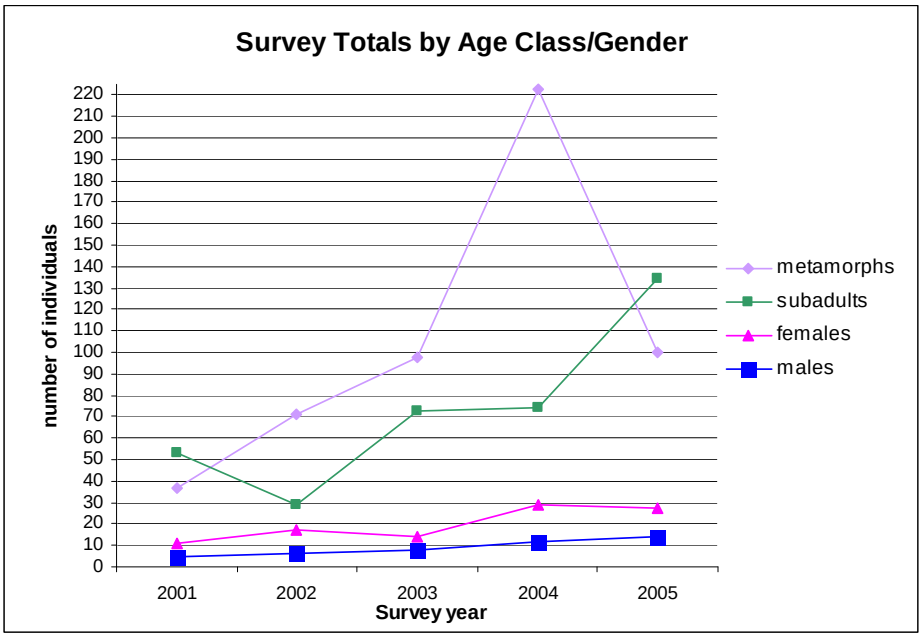


Figure 17a. Total individuals in each age class, by survey year.

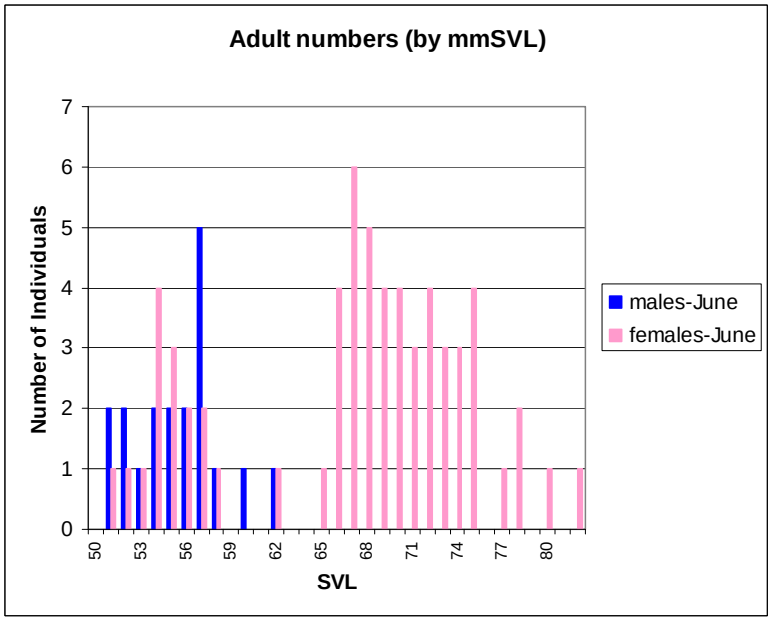
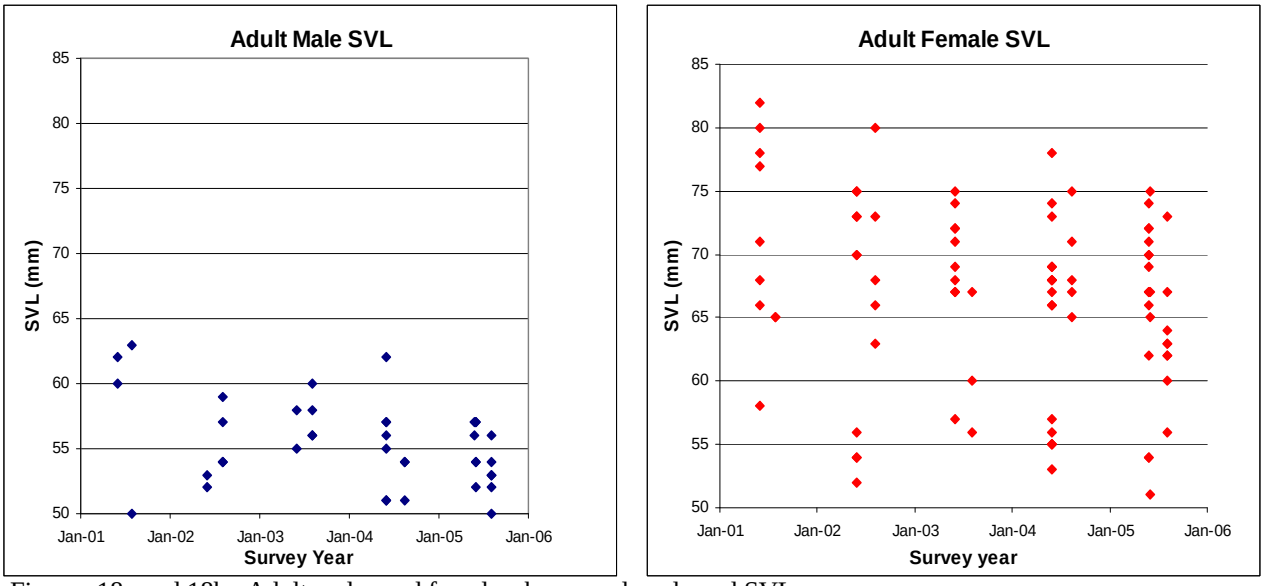


Figure 17b. Total number of males and females at each SVL, across all survey years.

Although Figure 17b shows total numbers of males and females captured at each SVL, Figures 18a and 18b split out the data by individuals per annual survey season. Eventually, trends in survivability may be evident by gender; however all that is clear at this time is that more females are in the adult population than males. A trend could be developing toward smaller (possibly younger) adults, but several more years' data will need to be obtained before significance can be determined. A number of additional questions can only be answered by collecting additional data, such as size at maturity, mortality between age classes, and the extent to which outmigration occurs across different age class (if at all).



Figures 18a and 18b. Adult males and females, by annual cycle and SVL.

Because of individual variability in growth, size ranges cannot always predict age with certainty. However, it is safe to say that an 80 SVL female is older than a 50 SVL female in June of any given year. Therefore, using the following criteria based upon capture data, survivability trends can be inferred (Table 4). Breaks in age class were based upon recapture data for known subadults (when 2nd year could be assigned with certainty to a PIT-tagged individual – refer to Table 3) and upon the SVL breaks in Figure 16b.

<u>Criteria:</u>

- Uncaptured subadults and adults were not included in these totals because there was a possibility that they were captured and counted another time in any given year.
- Uncaptured metamorphs were included because they were only viewed once, in the last survey of the year.
- Only the first capture of the year for recaptured frogs was counted, as it is easiest to determine subadult age class then.
- All 42mm and under SVL in August were considered metamorphs.
- For new captures in August, allowances were made for annual growth for females. No males captured in August needed to be adjusted for annual growth.

Table 7. Cohort survival across survey years. Yellow blocks identify peaks in numbers for each age class.

	COHORT-> "birth" year	1998 cohort	1999 cohort	2000 cohort	2001 cohort	2002 cohort	2003 cohort	2004 cohort	2005 cohort
In the first year of life	**Egg masses**	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	12 masses, at least 6000 individuals	Unknown
	Metamorphs (Gosner stage 47 to 45 SVL in August)	Unknown	Unknown	Unknown	(2001 survey) 37	(2002 survey) 71	(2003 survey) 98	(2004 survey) 223	(2005 survey) 100
In the second year of life	**Subadults** (SVL 39-60 in June, no identifiable males over 53; females to 69 in August)	Unknown	Unknown	(2001 survey) 41	(2002 survey) 34	(2003 survey) 53	(2004 survey) 84	(2005 survey) 151	
In the third year of life	**Adults** (SVL F 61-75, M 54-57 in June; SVL F 70-75 in August)	Unknown	(2001 survey) 3 females 0 males 3 TOTAL	(2002 survey) 7 females 0 males 7 TOTAL	(2003 survey) 10 females 3 males 13 TOTAL	(2004 survey) 18 females 3 males 21 TOTAL	(2005 survey) 14 females 0 males 14 TOTAL		
In the fourth year of life or older	**Adults** (SVL F 76+, M 58+)	(2001 survey) 4 males 3 females 7 TOTAL	(2002 survey) 1 female 1 male 2 TOTAL	(2003 survey) 0 females 3 males 3 TOTAL	(2004 survey) 1 female 0 males 1 TOTAL	2005 survey) 0 females 0 males 0 TOTAL			

Using the data in Table 7, a scatter graph can show the survivability of cohort members across years and the stages where mortality is greatest, as well as if there is a greater influence in any given year (for example, from habitat conditions) for all age classes (Figure 19). Perhaps the greatest value of this chart is to show the importance of continuing the surveys to fill in the data gaps.

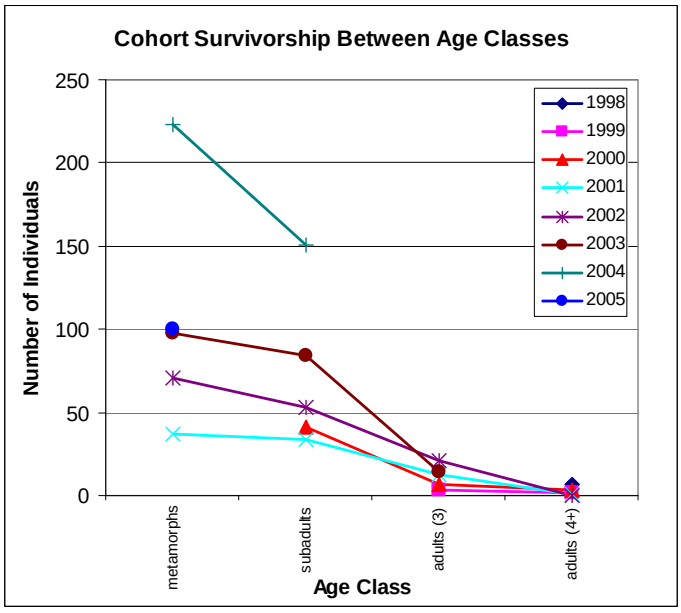


Figure 19. Cohort survivorship since 2001.

Because the survey has only 5 years of data, only two cohorts (2001 and 2002) can be tracked from metamorph through the 4+ adult stage. Figure 20 is similar to Figure 17a, but shows how age classes fluctuate across years. As displayed, numbers still trend in the same relative directions. A key to determining ways that management activities could increase population viability would be to strengthen analysis of habitat conditions in relation to numbers of frogs.

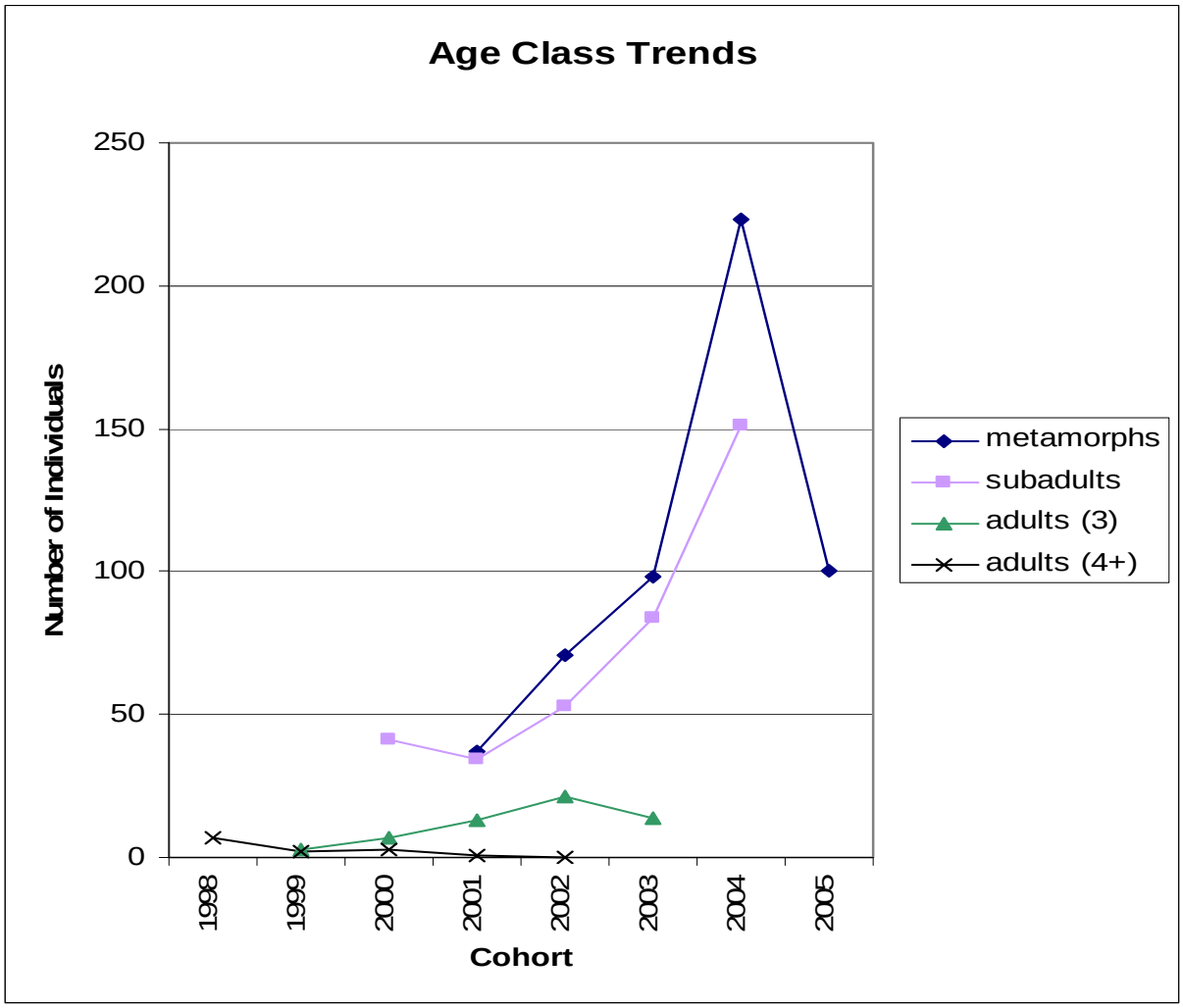


Figure 20. Age class trends.

The data in this chart can be analyzed along with the habitat measures to see if a correlative relationship is present (Figure 21). Additional years of data are needed to determine whether or not we can see a response by frogs to varying habitat conditions, determine how closely that response follows in time, and determine if a particular age class is most vulnerable to changing conditions (Figure 22). Although only two cohorts can be tracked from metamorphosis through adulthood at this time, each additional monitoring year from this point forward will complete the data set for another cohort.

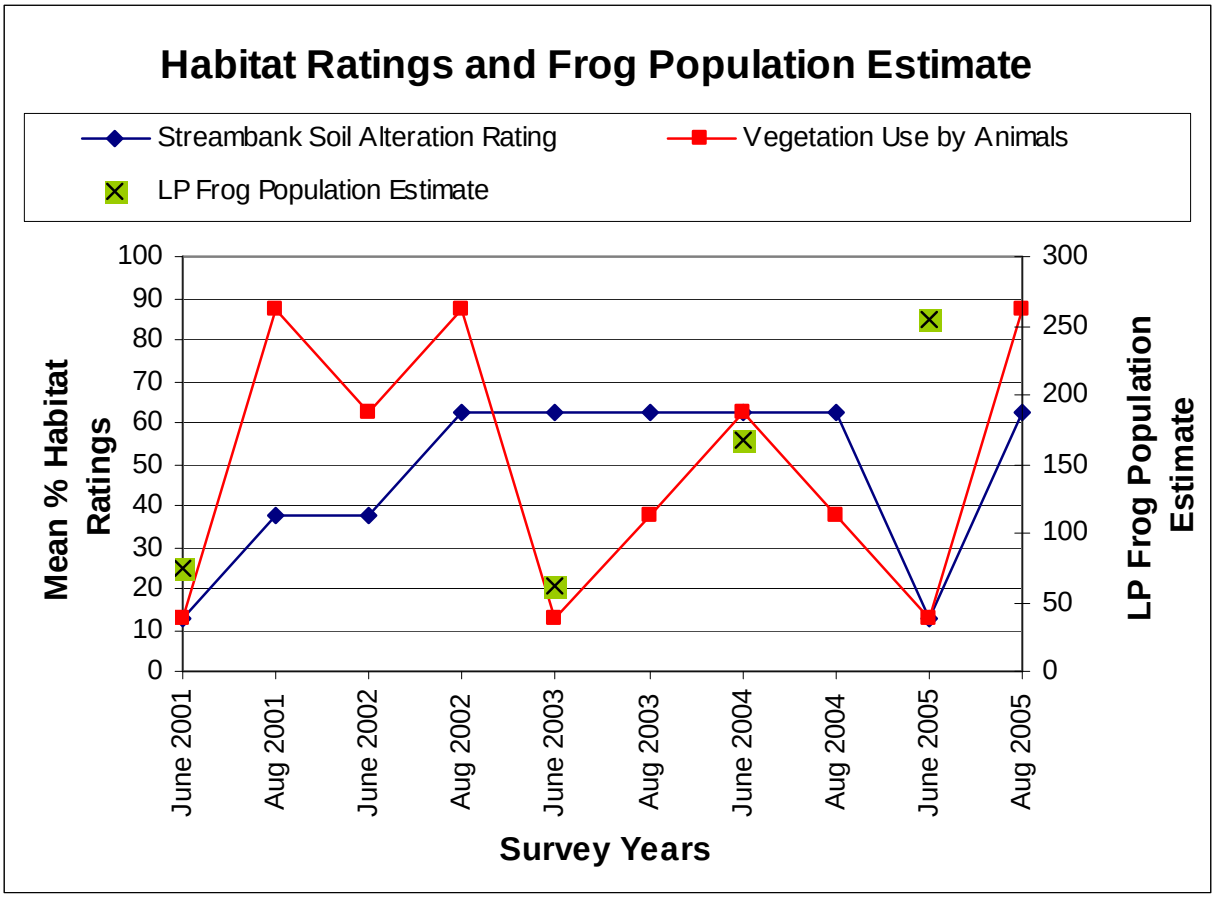


Figure 21. Habitat measures and frog population estimate. Habitat measures are plotted as means of their percentages (0-25% is plotted as 12.%; 26-50% is plotted as 37.5%; 51-75% is plotted as 62.5%; and 76-100% is plotted as 87.5%) (see Appendix II for rating criteria). For both habitat ratings depicted here, higher percentages represent poorer habitat conditions.

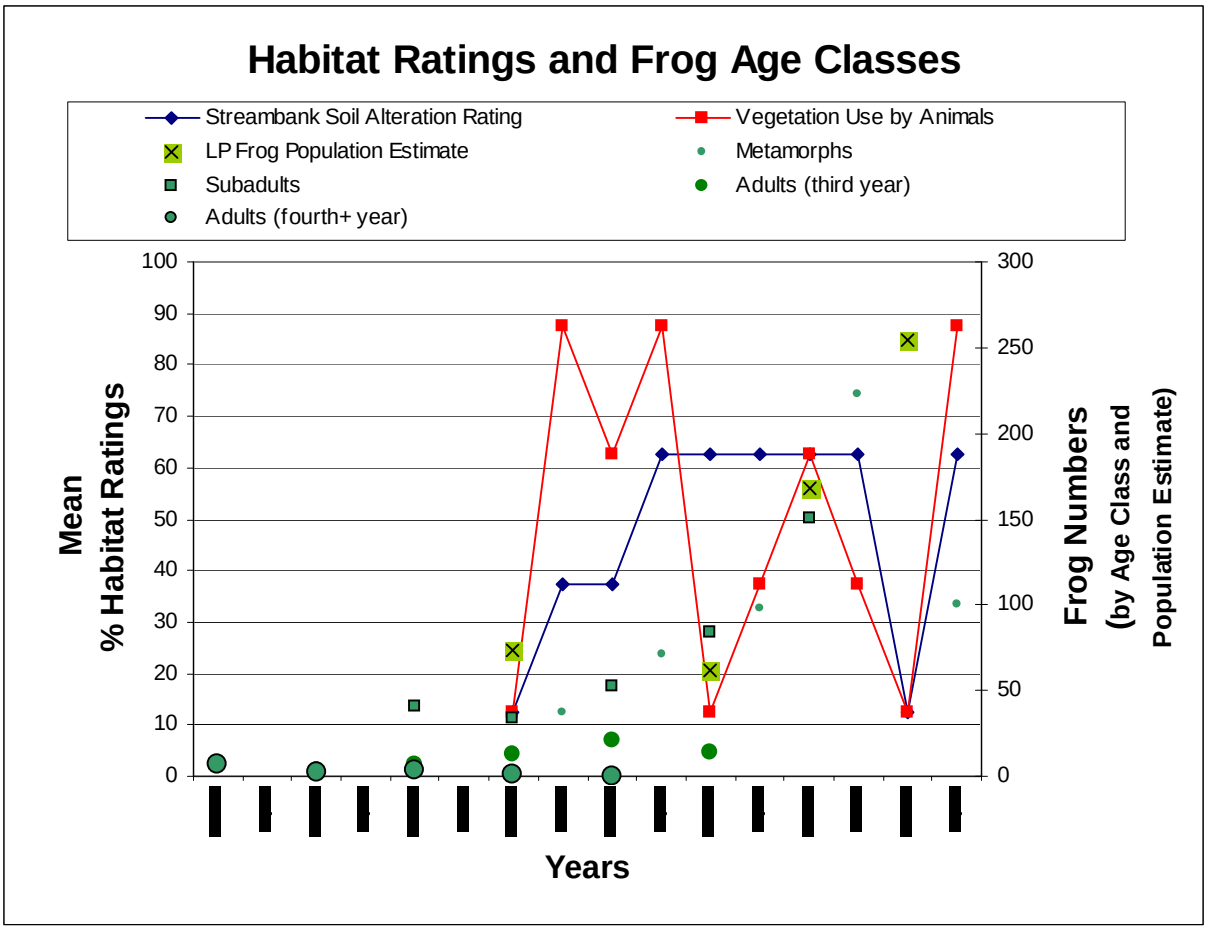


Figure 22. Habitat measures with frog age classes by year. Similar to the previous figure, this adds in age classes.

Capture locations for all age classes for both the June and August 2004 surveys will be mapped in a subsequent document to be submitted in early 2006.

Five years of this monitoring effort have been completed and the following conditions are noted at this time:

- There was an increase in numbers of observations of all life stages (except the largest adults) through June 2005, but numbers declined in August 2005.
- Habitat connectivity (wet corridor) increased in 2003, 2004, and early 2005.
- Ambient temperatures were milder in 2004 and 2005.
- Predator (garter snake) numbers cycled high (2001)-low (2002)-high (2003)-low (2004).
- Vegetative cover along the riparian corridor improved from 2002-early 2005.
- Woody vegetation is increasing in density and height in the natural exclosure.
- Symptoms of disease have been observed.
- Suitable breeding sites are widespread, but not being used (not a limiting factor).
- Suitable overwintering sites seem limited and may vary from year to year.

This was the final year of this monitoring effort, however funding has been approved for at least one more season. If BLM/State/FWS coordination can result in a few small habitat manipulations for frog enhancement, the following are recommended as priority actions to improve overwintering habitat near breeding sites:

Fence:

1. the oxbow below the campsite and plant a clump of willows along the southern edge.
2. the recharge pool and outflow channel downstream from the campsite. Plant a few willows along the outflow channel.
3. the oxbow and streamside breeding sites in the lower section of the State transect. Plant one clump of willows at each.
4. the two isolated oxbows in the State section between the natural exclosure and the second pinch.
5. any additional riparian habitat where muskrat tunnels have not been trampled or where willows could be established.

Future Considerations

- Additional survey years are needed to track cohort trends, ambient conditions (weather, grazing regime, etc.), and to determine the likelihood of long-term persistence.
- In 2006, exclosure data will be segregated from that of grazed pastures to better analyze potential correlations and habitat ratings.
- Additional surveys are needed both upstream and downstream of the survey site to determine if frogs are being lost from the transect through dispersal.
- In 2006, standardize habitat “names” for point locations, GPS, and map.
- In 2006, obtain DO and water temperature data at both random and non-random points throughout the stream reach within the survey transect.

APPENDIX I.

MONITORING METHODS

Two population estimate methods will be used in this Monitoring Plan: mark-recapture and visual encounter surveys. Mark-recapture methods can provide accurate estimates of population size within the constraints of the following assumptions: boundaries must be accurately assessed, and ideally, immigration and emigration must not exist, and births and deaths must not occur. Visual encounter surveys provide an estimate of relative abundance as long as every individual is equally likely to be observed regardless of weather, season, or other variables; each frog is recorded only once; and there are no observer-related effects. These two methods will be used to provide comparative numbers across 10 years for the Dry Creek monitoring site. The goal is to accurately detect trends in numbers at the site over the long-term. Mark-recapture numbers will be used to calculate the Lincoln Index (Peterson Estimate) to estimate *occurrence size* in the spring and visual encounter numbers to assess *breeding success* in the late summer. The Lincoln-Peterson Index is calculated as follows:

$$N=rn/m$$

N=occurrence size
r=number of frogs caught, marked, and released on day #1
n=number of frogs caught on day #2
m=total number of marked frogs caught on day #2

For example, if on the first day 30 frogs are captured, marked, and released and on the second day, 28 frogs are caught, of which 20 had been previously marked, then using the equation, N=(30)(28)/20, N=42.

Two people will visit the site three times each year - twice in the spring for a mark-recapture population estimate and habitat analysis and once in the late summer for an assessment of breeding success and habitat analysis. Beginning and ending points (determined by ownership, accessibility, and occurrence boundaries from previous surveys) will be staked and flagged, and GPS locations will be recorded at the first survey in the spring of 2001. Attempts will be made to capture every frog within the delimited area within a specified time frame. Frogs will be tagged with Passive Integrated Transponder tags. (Toe-clipping was discontinued in 2003)

Parameters to be measured at each monitoring site, once in the spring and once in the late summer include:

- Water chemistry: dissolved oxygen, temperature, pH, and conductivity
- Habitat/land use: streambank alteration and vegetation use by animals (Platts 1987). (Vegetative stability ratings are discontinued as of 2005.)

Data will be recorded in a standard log book. The site will be photographed in the spring and late summer from a standard point (to be staked and flagged in the spring of 2001).

A report will be compiled annually and submitted to the BLM. The report will consist of tables summarizing population numbers and maps of the area surveyed. Water chemistry and habitat/land use measures will be discussed along with their relevance to population trends. Raw data and field notes will be included as appendices.

APPENDIX II

Habitat/Land Use Ratings

FROM:

Platts W. S. 1987. Methods for evaluating riparian habitat with applications to management. USFS Intermountain Forest and Range Experiment Station. Ogden, Utah. GTR INT-221.

Streambank soil alteration rating (SSAR)

Rating (%)	Description
0	Streambanks are stable and are not being altered by water flows or animals.
1-25	Streambanks are stable, but are being lightly altered along the transect line. Less than 25% of the streambank is receiving any kind of stress and if stress is being received, it is very light. Less than 25% of the streambank is false, broken down, or eroding.
26-50	Streambanks are receiving only moderate alteration along the transect line. At least 50% of the streambank is in a natural stable condition. Less than 50% of the streambank is false, broken down, or eroding. False banks are rated as altered. Alteration is rated as natural, artificial, or a combination of the two.
51-75	Streambanks have received major alteration along the transect line. Less than 50% of the streambank is in a stable condition. Over 50% of the streambank is false, broken down, or eroding. A false bank that may have gained some stability and cover is still rated as altered. Alteration is rated as natural, artificial, or a combination of the two.
76-100	Streambanks along the transect line are severely altered. Less than 25% of the streambank is in a stable condition. Over 75% of the streambank is false, broken down, or eroding. A past damaged bank, now classified as a false bank, that has gained some stability and cover is still rated as altered. Alteration is rated as natural, artificial, or a combination of the two.

Vegetation use by animals (VUBA)

Rating (%)	Description
0-25 (light)	Vegetation use is very light or none at all. Almost all of the potential plant biomass at present stage of development remains. The vegetative cover is very close to that which would occur naturally without use. If bare areas exist (i.e., bedrock), they are not because of loss of vegetation from past grazing use.
26-50 (moderate)	Vegetation use is moderate and at least one-half of the potential plant biomass remains. Average plant stubble height is greater than half of its potential height at its present stage of development. Plant biomass no longer on site because of past grazing is considered as vegetation that has been used.
51-75 (high)	Vegetative use is high and less than half of the potential plant biomass remains. Plant stubble height averages over two inches. Plant biomass no longer on site because of past grazing is considered as vegetation that has been used.
76-100 (very high)	Use of the streamside vegetation is very high. Vegetation has been removed to two inches or less in average stubble height. Almost all of the potential vegetative biomass has been used. Only the root system and part of the stem remains. That potential biomass that is now non-existent because of past elimination but grazing is considered vegetation that has been used.

APPENDIX III

2001-2005 Capture Data									
date	**hour**	**gen**	**mass**	**SVL**	**recap**	**PIT**	**UTME**	**UTMN**	**comments**
06/06/01	1248					*Coluber constrictor*	442427	4817548	
06/06/01	1259					*Pituophis catenifer*	442201	4817175	
06/06/01	1310					**west end of state transect**	442073	4816978	large boulder in creek, near private boundary
06/06/01	1350	m	21.0	62	no	4239200D12	442241	4817159	oxbow
06/06/01	1417	sa	9.5	47	no	42393C281F	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1419	sa	11.6	52	no	422D3F633E	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1422	sa	13.7	53	no	4238663773	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1424	sa	10.1	49	no	42392F2C1A	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1426	sa	12.6	52	no	422D47213E	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1428	f	45.7	82	no	4238327125	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1500	sa	14.0	53	no	42384B6336	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
06/06/01	1517	f	40.0	80	no	422D285922	442407	4817317	eddy
06/06/01	1536	f	16.6	58	no	42391D6023	442437	4817405	had swollen toe on right rear
06/06/01	1546	sa	9.7	49	no	41620A620B	442454	4817407	stream
06/06/01	1551	sa	13.1	51	no	423827112B	442457	4817427	stream
06/06/01	1601	sa	12.1	53	no	423831600B	442503	4817431	stream
06/06/01	1605	sa	10.7	50	no	4238737469	442502	4817435	stream
06/06/01	1852				no	*Sceloporus occidentalis*	442671	4817752	at campsite
06/06/01						**photo point**	442164	4817129	at the edge of rock outcrop, facing east (downstream)
06/07/01	1012	sa	10.0	49	no	4238262558	442487	4817555	oxbow; just north of the first pinched canyon
06/07/01	1028	sa	10.0	48	no	422D22746E	442681	4817607	sidebow
06/07/01	1035	f	25.4	66	no	42381F0D25	442681	4817600	oxbow
06/07/01	1036	m	19.5	60	no	4238596109	442681	4817600	oxbow
06/07/01	1037	sa	6.6	44	no	4238167710	442681	4817600	oxbow
06/07/01	1041	sa	9.0	47	no	41617D627D	442681	4817600	oxbow
06/07/01	1103	sa	14.7	56	no	42384B4216	442745	4817588	stream

06/07/01	1115	sa	13.7	53	no	42393F033E	442821	4817592	stream
06/07/01	1144	sa	11.3	49	no	4238517003	442843	4817601	sidebow
06/07/01	1145	sam	11.1	48	no	422D3B1E49	442843	4817601	sidebow
06/07/01	1159					uncaptured	442891	4817575	sidebow; PDOP 18
06/07/01	1210	saf	13.5	55	no	423832241B	442918	4817603	stream; PDOP 10
06/07/01	1347	saf	14.0	53	no	4239154360	443233	4817452	oxbow
06/07/01	1353	saf	10.1	49	no	42392B780B	443254	4817447	sidebow
06/07/01	1405					uncaptured	443259	4817439	sidebow
06/07/01	1410					breeding site; large tads	443259	4817439	sidebow; photo
06/07/01	1411	saf	15.0	54	no	416201747F	443270	4817429	sidebow
06/07/01	1435	sa				uncaptured	443486	4817432	sidebow
06/07/01	1439					*Pituophis catenifer*	443499	4817448	
06/07/01	1443	sa	9.0	47	no	4238436C2A	443516	4817474	stream
06/07/01	1520					*Coluber constrictor*	443909	4818119	75m north of endpoint
06/07/01	1531					breeding site?; tadpoles	443807	4817944	sidebow
06/07/01	1536	sa	9.6	50	no	423917671E	443806	4817960	sidebow
06/07/01	1546	sa	10.2	49	no	432B183D72	443805	4817970	sidebow
06/07/01	1550	sam	18.2	50	no	4238796209	443809	4817959	sidebow
06/07/01	1608	sa	9.1	46	no	42384A5F03	443903	4818064	stream
06/07/01	1612					**endpoint**	443909	4818069	large boulder in creek; photo
06/08/01	1045	m	22.0	63	R	4239200D12	442252	4817148	sidebow
06/08/01	1122	sa	10.0	48	R	42393C281F	442371	4817295	natural exclosure
06/08/01	1156	saf	10.5	50	no	422D340B26	442407	4817347	pool in stream
06/08/01	1205	saf	15.3	53	no	42386B5F00	442405	4817354	stream
06/08/01	1212	saf	17.0	58	R	42391D6023	442421	4817395	stream
06/08/01	1220	saf	17.5	58	no	42390D7E59	442429	4817411	stream
06/08/01	1237	sa	9.3	49	R	41620A620B	442447	4817424	stream
06/08/01	1300	sam	9.5	48	R	4238262558	442587	4817555	oxbow
06/08/01	1313	sa	9.4	47	R	422D22746E	442669	4817601	oxbow
06/08/01	1319	sa	9.0	47	R	41617D627D	442676	4817608	oxbow
06/08/01	1320	f	37.0	78	no	4238333D14	442676	4817608	oxbow
06/08/01	1322	sa	6.5	43	R	4238167710	442676	4817608	oxbow
06/08/01	1330	f	24.5	65	R	42381F0D25	442676	4817608	oxbow
06/08/01	1545	sa	12.3	53	R	42393F033E	442814	4817611	stream
06/08/01	1555	sa	11.6	52	no	4238291117	442842	4817610	sidebow
06/08/01	1605	sam	11.1	48	R	422D3B1E49	442881	4817602	sidebow
06/08/01	1614	sa	13.0	53	R	423832241B	442921	4817612	stream

06/09/01	925			~24"		*Crotalus viridis*	442793	4817850	on west-facing slope
06/09/01	950			~42"		*Crotalus viridis*	443011	4817493	along stream, drinking water
06/09/01	955	sa				uncaptured	443099	4817475	sidebow
06/09/01	956					R. lut tadpoles	443099	4817475	sidebow
06/09/01	1006	f	29.5	71	no	423925196E	443175	4817473	stream; scour pool
06/09/01	1015	sa	10.3	49	no	423922023E	443258	4817453	stream
06/09/01	1018	saf	13.6	52	no	42384A5A3A	443240	4817457	sidebow
06/09/01	1026	sam	10.8	48	no	42383E6217	443250	4817447	sidebow
06/09/01	1032	sa	10.1	49	R	42392B780B	443256	4817455	stream
06/09/01	1041	sa	11.1	50	no	4238330E7E	443262	4817451	stream
06/09/01	1045	sam	12.6	52	no	42387B2D5C	443265	4817443	sidebow
06/09/01	1100	sam	11.0	53	no	4238426A10	443300	4817425	stream; scour pool
06/09/01	1115	sa	10.0	49	no	432D723A12	443528	4817493	in stream at fence
06/09/01	1140			68		R. lut tadpoles	443804	4817858	stream; scour pool
06/09/01	1145	f				uncaptured	443800	4817855	sidebow
06/09/01	1151	f	36.0	77	no	4328535D4D	443803	4817873	sidebow
06/09/01	1152	f	26.0	68	no	432D334857	443803	4817873	sidebow
06/09/01	1214	sa	10.2	48	no	42391A493A	443810	4817948	sidebow
08/04/01	1135	sa				uncaptured	442198	4817052	sidebow
08/04/01	1200	f				uncaptured	442371	4817309	natural exclosure
08/04/01	1217	f	23.6	65	R	41620A620B	442407	4817306	in rainpool in rock next to sidebow, covered in duckweed
08/04/01	1255	mt	4.5	36	no; toeclip #1	too little	442582	4817555	oxbow
08/04/01	1307	mt				uncaptured	442631	4817585	stream
08/04/01	1311	mt	4.0	31	no; toeclip #1	too little	442650	4817596	stream
08/04/01	1318	mt				uncaptured	442679	4817597	stream
08/04/01	1324	m	11.9	50	no	432C2C0452	442677	4817613	oxbow with big boulder below campsite
08/04/01	1330	mt	4.5	33	no; toeclip #1	too little	442699	4817617	stream
08/04/01	1334	mt				uncaptured	442699	4817617	stream
08/04/01	1342	mt	5.5	38	no; toeclip #1	too little	442757	4817589	stream

08/04/01	1347	mt				uncaptured	442843	4817605	sidebow
08/04/01	1348	mt	5.0	37	no; toeclip #1	too little	442843	4817605	sidebow
08/04/01	1353	mt	4.5	35	no; toeclip #1	too little	442878	4817595	oxbow
08/04/01	1354	mt				uncaptured	442878	4817595	oxbow
08/04/01	1355	mt				uncaptured	442878	4817595	oxbow
08/04/01	1356	mt				uncaptured	442878	4817595	oxbow
08/04/01	1357	mt				uncaptured			before third pinch along bank; pdop too high because of rock cliff.
08/04/01	1408	mt	4.2	35	no; toeclip #1	too little	442979	4817508	stream
08/04/01	1415	mt				uncaptured	443050	4817488	stream; scour pool
08/04/01	1416	mt				uncaptured	443048	4817471	stream; scour pool
08/04/01	1418	f				uncaptured	443054	4817485	floating on algal matt in scour pool; very skittish, did not resurface
08/04/01	1419	mt	3.0	29	no; toeclip #1	too little	443057	4817482	stream; scour pool
08/04/01	1420	mt				uncaptured	443048	4817471	stream; scour pool
08/04/01	1421	mt				uncaptured	443048	4817471	stream; scour pool
08/04/01	1422	mt				uncaptured	443091	4817484	stream
08/04/01	1432	mt	3.8	34	no; toeclip #1	too little	443131	4817464	stream
08/04/01	1438	mt	3.4	31	no; toeclip #1	too little	443172	4817470	stream
08/04/01	1439	mt	3.0	30	no; toeclip #1	too little	443172	4817470	stream
08/04/01	1445	mt	3.1	30	no; toeclip #1	too little	443173	4817463	stream
08/04/01	1447	mt				uncaptured	443182	4817465	stream
08/04/01	1455	mt				uncaptured	443194	4817464	stream
08/04/01	1456	f	23.8	65	no	4239154360	443191	4817458	stream

08/04/01	1457	mt				uncaptured	443202	4817464	stream
08/04/01	1507	mt	4.7	35	no; toeclip #1	too little	443362	4817400	stream
08/04/01	1510	m	22.0	63	no	4238206F38	443369	4817405	stream
08/04/01	1516	mt	3.1	33	no; toeclip #1	too little	443392	4817401	stream
08/04/01	1532	mt	4.1	35	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1533	mt	3.3	28	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1534	mt	2.7	29	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1535	mt	3.1	30	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1536	mt	3.1	32	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1537	mt	2.5	30	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1538	mt	2.1	28	no; toeclip #1	too little	443488	4817428	oxbow
08/04/01	1545					finished			clouds threatening
06/06/02	908	SAF	14.5	54	no	43573E2B04	442156	4817005	possibly 2001 cohort
06/06/02	930	SA				uncaptured	442240	4817155	possibly 2001 cohort
06/06/02	936	M?				uncaptured	442242	4817155	possibly 2001 cohort
06/06/02	957	SAM	10.8	48	no	4358466D5B	442284	4817230	possibly 2001 cohort
06/06/02	1004	F	33.8	73	no	435B5B1B41	442284	4817240	older female
06/06/02	1007	F	16.4	54	no	433C76775A	442284	4817240	possibly 2001 cohort
06/06/02	1044	SA	8.4	41	no	43595D277C	442325	4817283	possibly 2001 cohort
06/06/02	1105	F	30.1	70	recap from 2001	41620A620B	442442	4817419	SA last year, so probably 2 yr old (2000 cohort). Captured as SA last year in same section of stream (within 15m), between the first pinch

									(barrier?) natural exclosure and the second pinch (barrier?).
06/06/02	1122	SA				uncaptured	442545	4817440	possibly 2001 cohort
06/06/02	1150	SAM	23.5	51	no	43581B2B4E	442671	4817605	possibly 2001 cohort
06/06/02	1156	M	14.2	53	no	434D7C023F	442682	4817603	possibly 2001 cohort; appeared sick/lethargic. Blood vessels apparent on ventral surface - gave reddish appearance to skin.
06/06/02	1157	F	36.5	73	recap from 2001	42384B4216	442682	4817602	SA last year, so probably 2 yr old (2000 cohort). Captured as SA last year in same section of stream between second and third pinch. Scars on back, possibly from snake.
06/06/02	1158	F				uncaptured	442683	4817608	
06/06/02	1335	SA				uncaptured	442737	4817588	
06/06/02	1352	SAM	12.3	52	no	435100720A	442802	4817600	possibly 2001 cohort
06/06/02	1411	F	19.5	52	no	4350522037	442839	4817603	possibly 2001 cohort
06/06/02	1415	SAF	14.0	48	no	433C7B7D67	442839	4817603	possibly 2001 cohort
06/06/02	1417					uncaptured	442839	4817603	
06/06/02	1434	SA	11.5	48	no	43583D0143	442846	4817614	possibly 2001 cohort
06/06/02	1435	SAM	13.3	51	no	435B363109	442846	4817614	possibly 2001 cohort
06/06/02	1440	F	19.0	56	no	4350310C6D	442852	4817615	possibly 2001 cohort
06/06/02	1517	SAF	13.9	49	no	43592B4460	443213	4817459	possibly 2001 cohort
06/06/02	1540	SAF	12.0	50	no	433D537612	443301	4817430	possibly 2001 cohort
06/06/02	1600	SAF	15.0	51	no	43523F2657	443483	4817430	possibly 2001 cohort
06/06/02	1603	SAM	10.5	49	no	4358415C7A	443483	4817430	possibly 2001 cohort
06/06/02	1613	SAF	16.9	57	no	43574A2354	443498	4817476	possibly 2001 cohort
06/06/02	1632	SAF	15.0	54	no	43583B5969	443732	4817618	possibly 2001 cohort
06/06/02	1638	SA	12.0	51	no	433F535452	443773	4817708	possibly 2001 cohort
06/06/02	1650	SAM	12.0	50	no	434E16172D	443824	4817870	possibly 2001 cohort
06/06/02	1652	F	39.7	75	recap from 2001	423D334857	443824	4817870	this is most likely frog #432D334857 from last year - PIT# probably recorded incorrectly (should be 423, not 432). Possibly cohort of 1999 or 2000. Found along same stretch of stream, within 20 m.
06/06/02	1654	SA	10.5	47	no	433C69682B	443824	4817870	possibly 2001 cohort
06/06/02	1656	SAF	11.5	50	no	434D404937	443824	4817870	possibly 2001 cohort
06/06/02	1712	SAM	10.5	43	no	43525C3E6A	443816	4817939	possibly 2001 cohort
06/06/02	1715	SAM	9.0	47	no	4358000343	443826	4817948	possibly 2001 cohort
06/07/02	935	F	33.2	72	yes	435B5B1B41	442284	4817240	same place as yesterday

06/07/02	957	F				uncaptured	442407	4817306	this could be 41620A620B from 2001, but we did not capture her yesterday, and today she was extremely skittish.
06/07/02	1020	SA				uncaptured	442545	4817440	probably the same uncaptured as yesterday: 1122
06/07/02	1050	F	35.0	74	yes	42384B4216	442682	4817603	same place as yesterday (oxbow below campsite).
06/07/02	1230	F	14.5	54	Wendy	4358056A44	440900	4816950	UTMs hand calculated on map, app. 100m east of road crossing (BLM); tagged by Wendy on 15 May 2002 at Brown Cabin (440852, 4816996).
06/07/02	1240	F	32.5	70	no	4358077338	441000	4816995	UTMs hand calculated on map. stream under first cliff (BLM)
06/07/02	1245	SA				uncaptured	441000	4816995	UTMs hand calculated on map. stream under first cliff (BLM)
06/07/02	1255	SA	11.0	48	no	43584B4765	441650	4816830	UTMs hand calculated on map. in canyon by BLM fence
06/07/02	1305	SA				uncaptured	441150	4816935	UTMs hand calculated on map. second oxbow pool under first cliff on north side of stream
06/07/02	1309	F	34.5	75	no	4350506E41	441100	4816940	UTMs hand calculated on map. oxbow pool under first cliff on north side of stream
06/07/02	1310	SA				uncaptured	441100	4816940	UTMs hand calculated on map. oxbow pool under first cliff on north side of stream
06/07/02	1311	M	18.0	52	no	435B2A2063	441100	4816940	UTMs hand calculated on map. oxbow pool under first cliff on north side of stream
06/07/02	1315	SA	9.5	49	no	435844657A	441100	4816940	UTMs hand calculated on map. oxbow pool under first cliff on north side of stream
08/11/02	925	M	15.0	54	no	434F6A0E13	441095	4816924	(BLM section) stream pool
08/11/02	926	MT	5.0	35	#2	too little	441098	4816922	(BLM section) stream
08/11/02	935	M	15.7	57	recapture	435B441931	441158	4816896	(BLM section) stream; PIT-tagged by Wendy's crew on 15 May 2002 at 440610, 4817071 (SVL was 48)
08/11/02	936	MT	3.2	32	#2	too little	441176	4816884	(BLM section)
08/11/02	949	MT	4.5	37	#2	too little	441176	4816884	(BLM section)
08/11/02	955	M	16.8	59	no	4357453E7D	441176	4816884	(BLM section)
08/11/02	956	M	14.0	54	no	435B4F6D0B	441176	4816884	(BLM section)
08/11/02	1002	MT	3.2	32	#2	too little	441176	4816884	(BLM section)
08/11/02	1012	MT	3.0	32	#2	too little	441176	4816884	(BLM section)
08/11/02	1019	MT	4.7	38	#2	too little	441095	4816924	(BLM section) stream pool
08/11/02	1020	MT	4.0	35	#2	too little	441095	4816924	(BLM section) stream pool
08/11/02	1021	MT	3.9	36	#2	too little	441095	4816924	(BLM section) stream pool

08/11/02	1022	MT	4.0	34	#2	too little	441095	4816924	(BLM section) stream pool
08/11/02	1023	MT				uncaptured	441095	4816924	(BLM section) stream pool
08/11/02	1033	F	28.7	66	no	433F524022	441106	4816943	(BLM section) big oxbow pool
08/11/02	1044	MT				uncaptured	441032	4816969	(BLM section) big slough upper reach
08/11/02	1045	MT	4.0	34	#2	too little	441032	4816969	(BLM section) big slough upper reach
08/11/02	1047	F				uncaptured	441032	4816969	(BLM section) big slough upper reach
08/11/02	1048	F	44.0	80	no	4357454011	441032	4816969	(BLM section) big slough upper reach; appears gravid; bone sticking out of #1 (previous toe clip?) trimmed.
08/11/02	1049	F	22.5	63	no	43574E6F7D	441032	4816969	(BLM section) big slough upper reach
08/11/02	1100	MT				uncaptured	441032	4816969	(BLM section) big slough upper reach
08/11/02	1125					START STATE SECTION			YOY *Thamnophis elegans* & 11 chukar at water's edge
08/11/02	1127	MT	4.0	34	#2	too little	442104	4816973	stream
08/11/02	1230	MT	6.5	40	no	43596E6C5C	442590	4817550	in second pinch; UTMs hand-calculated.
08/11/02	1240	MT				uncaptured	442610	4817580	just below second pinch; UTMs hand-calculated.
08/11/02	1250	MT	4.0	36	#2	too little	442699	4817617	below campsite; UTMs hand-calculated.
08/11/02	1310	MT				escaped	442754	4817594	
08/11/02	1317	MT	4.0	36	#2	too little	442803	4817598	5 chukar
08/11/02	1321	MT	4.0	36	#2	too little	442803	4817598	
08/11/02	1325	MT	5.0	38	#2	too little	442843	4817602	stream
08/11/02	1326	MT	4.5	36	#2	too little	442842	4817613	side pool of stream
08/11/02	1327	MT	3.0	32	#2	too little	442842	4817613	side pool of stream
08/11/02	1328	MT	4.5	35	#2	too little	442842	4817613	side pool of stream
08/11/02	1335	MT	3.0	29	#2	too little	442842	4817613	side pool of stream
08/11/02	1336	MT	2.7	32	#2	too little	442842	4817613	side pool of stream
08/11/02	1337	MT	5.0	36	#2	too little	442842	4817613	side pool of stream
08/11/02	1341	MT	3.5	33	#2	too little	442853	4817607	side channel
08/11/02	1344	MT	7.5	40	no	43523D785F	442853	4817607	side channel
08/11/02	1349	MT	4.5	34	#2	too little	442853	4817607	side channel
08/11/02	1353	MT	4.0	35	#2	too little	442875	4817606	stream
08/11/02	1359	MT				uncaptured	442875	4817606	
08/11/02	1402	MT	3.5	34	#2	too little	442920	4817600	third pinch; UTMs hand-calculated.
08/11/02	1412	MT	4.1	35	#2	too little	442920	4817600	third pinch; UTMs hand-calculated.
08/11/02	1413	MT				uncaptured	442920	4817600	third pinch; UTMs hand-calculated.
08/11/02	1414	MT				uncaptured	442920	4817600	third pinch; UTMs hand-calculated.

08/11/02	1425	MT	5.0	42	no	435A311B63	443079	4817466	wide slough (scour pool)
08/11/02	1430	MT	5.0	37	#2	too little	443079	4817466	wide slough (scour pool)
08/11/02	1431	MT				uncaptured	443079	4817466	wide slough (scour pool)
08/11/02	1432	MT				uncaptured	443116	4817456	head of scour pool
08/11/02	1444	MT				uncaptured	443116	4817456	head of scour pool
08/11/02	1447	MT	2.5	28	#2	too little	443130	4817465	small stream connecting scour pools
08/11/02	1449	MT	2.5	30	#2	too little	443130	4817465	small stream connecting scour pools
08/11/02	1452	MT	4.0	34	#2	too little	443130	4817465	small stream connecting scour pools
08/11/02	1453	MT	2.5	29	#2	too little	443130	4817465	small stream connecting scour pools
08/11/02	1457	MT	3.1	34	#2	too little	443138	4817462	small stream connecting scour pools
08/11/02	1500	MT	4.0	34	#2	too little	443157	4817471	
08/11/02	1507	F	38.8	73	no	434E2B7F25	443169	4817464	probably gravid
08/11/02	1512	MT				uncaptured	443169	4817464	
08/11/02	1513	MT				uncaptured	443169	4817464	
08/11/02	1525	MT				uncaptured	443363	4817405	approximately 25 chukar
08/11/02	1526	MT				uncaptured	443363	4817405	
08/11/02	1530	MT	2.5	28	#2	too little	443398	4817410	
08/11/02	1535	MT	4.0	35	#2	too little	443398	4817410	
08/11/02	1537	MT	2.8	30	#2	too little	443398	4817410	
08/11/02	1544	MT	2.7	32	#2	too little	443491	4817460	
08/11/02	1545	MT	3.0	33	#2	too little	443491	4817460	
08/11/02	1550	MT	3.0	36	#2	too little	443491	4817460	
08/11/02	1552	MT	3.5	33	#2	too little	443491	4817460	
08/11/02	1555	MT	3.0	32	#2	too little	443491	4817460	
08/11/02	1556	MT	3.5	33	#2	too little	443491	4817460	
08/11/02	1600	MT	5.0	39	#2	too little	443504	4817465	
08/11/02	1603	MT	5.0	37	#2	too little	443504	4817465	
08/11/02	1604	MT	4.0	34	#2	too little	443504	4817465	
08/11/02	1607	MT	4.5	39	#2	too little	443552	4817531	
08/11/02	1608	MT	5.0	38	#2	too little	443552	4817531	
08/11/02	1609	MT	3.4	33	#2	too little	443552	4817531	
08/11/02	1610	MT	3.5	33	#2	too little	443552	4817531	
08/11/02	1611	MT				too little	443570	4817530	did not capture; UTMs hand-calculated
08/11/02	1612	MT				too little	443570	4817530	did not capture; UTMs hand-calculated
08/11/02	1613	MT				too little	443570	4817530	did not capture; UTMs hand-calculated
08/11/02	1614	MT				too little	443570	4817530	did not capture; UTMs hand-calculated
08/11/02	1618	F	25.1	68	no	434D623F6D	443599	4817530	over 50 chukar

08/11/02	1625					uncaptured	443669	4817557	
08/11/02	1645					end survey			
06/06/03	915					start			
06/06/03	950					*Pituophis catenifer*	442360	4817286	no frogs between start point and 1st pinch
06/06/03	1002	sa	11.0	49	no	433D0C3905	442363	4817276	along bank in natural exclosure
06/06/03	1020					*Pituophis catenifer*	442391	4817334	just below natural exclosure
06/06/03	1032	F	34.5	75	no	4334374261	442503	4817423	oxbow pool
06/06/03	1033	F	16.0	57	no	435A112676	442503	4817423	oxbow pool
06/06/03	1110	sa	7.0	43	no	434E080F45	442675	4817596	stream below campsite
06/06/03	1115					*Pituophis catenifer*	442680	4817602	between the stream & the oxbow
06/06/03	1116	M	14.5	55	no	4357461251	442681	4817602	oxbow pool
06/06/03	1118	sa	9.5	42	no	4352582D0F	442681	4817602	oxbow pool
06/06/03	1126	sa	7.0	43	no	435B585523	442685	4817605	oxbow pool
06/06/03	1205	sa	9.5	48	no	43583B5B5D	442821	4817594	stream down from fenceline
06/06/03	1211	sa	8.5	44	no	43577D7F0B	442839	4817608	oxbow pool
06/06/03	1212	sa	10.5	42	no	43577A5D43	442839	4817608	oxbow pool
06/06/03	1213	F	32.0	72	no	434E367F06	442839	4817608	oxbow pool
06/06/03	1214	sa	6.5	42	no	435A00426E	442839	4817608	oxbow pool
06/06/03	1215	sa	11.0	44	no	435A336346	442839	4817608	oxbow pool
06/06/03	1216	sa	9.0	43	no	43506C2D0F	442839	4817608	oxbow pool
06/06/03	1217	sa	12.0	49	no	434E100116	442839	4817608	oxbow pool
06/06/03	1240	sa	9.5	42	no	4357442D00	442846	4817611	oxbow pool before 3rd pinch
06/06/03	1241	sa	8.5	45	no	43523B046C	442846	4817611	oxbow pool before 3rd pinch
06/06/03	1251	sa	11.5	51	no	434F5C3850	442846	4817611	oxbow pool before 3rd pinch
06/06/03	1252	sa	9.5	47	no	435926650F	442846	4817611	oxbow pool before 3rd pinch
06/06/03	1256	sa	9.5	49	no	4357474242	442846	4817611	oxbow pool before 3rd pinch
06/06/03	1301	sa	8.0	42	no	435035032A	442857	4817608	stream backwater towards oxbow
06/06/03	1302	sa	10.0	49	no	433C5E0E7B	442857	4817608	stream backwater towards oxbow
06/06/03	1303	sa	12.0	50	no	434F5D5462	442857	4817608	stream backwater towards oxbow
06/06/03	1311					uncaptured	442857	4817608	stream backwater towards oxbow
06/06/03	1313	sa	12.0	49	no	4358044215	442857	4817608	stream backwater towards oxbow
06/06/03	1359	sa	11.0	50	no	433D197477	443180	4817455	stream just above 3rd pinch
06/06/03	1408	sa	9.0	44	no	435236220E	442881	4817598	isolated oxbow
06/06/03	1409	sa	8.0	45	no	435975480D	442881	4817598	isolated oxbow
06/06/03	1410					uncaptured	442881	4817598	isolated oxbow
06/06/03	1436	sam	12.5	50	no	435A3B583D	443730	4817622	end point; worked back from here
06/06/03	1506	sa	10.5	51	no	433D0D0E61	443366	4817400	creeks subs out after 2nd scour pool

06/06/03	1517					tadpoles	443266	4817445	scour pool
06/06/03	1521	sa	10.0	46	no	435809763D	443255	4817455	
06/06/03	1525	sa				uncaptured	443256	4817455	
06/06/03	1532	sa	12.0	51	no	433C5D7064	443181	4817455	
06/06/03	1600					end			ended back at 3rd pinch
06/07/03	902					*Crotalus viridis*	443693	4817588	warming at the toe of the slope; photo; went to drink
06/07/03	907	sa	12.5	51	R	435A3B583D	443721	4817609	oxbow pool at endpoint
06/07/03	935	sa	14.0	51	no	4350710E38	443583	4817529	stream
06/07/03	936					uncaptured	443583	4817529	stream
06/07/03	937					tadpoles	443583	4817529	stream
06/07/03	1000	sa	9.5	45	no	434E372C02	443489	4817431	isolated oxbow
06/07/03	1001	F	34.0	72	no	435B372040	443489	4817431	isolated oxbow
06/07/03	1002	sa	14.0	52	no	43573B5E21	443489	4817431	isolated oxbow
06/07/03	1003	sa	9.5	48	no	43504D4627	443489	4817431	isolated oxbow
06/07/03	1005					PTF tadpoles	443489	4817431	isolated oxbow
06/07/03	1046	sa	10.5	46	no	435B340B61	443471	4817433	stream below scour pool
06/07/03	1052	sa	10.0	47	no	433F46666F	443482	4817435	
06/07/03	1056	F	27.5	67	no	4357742A76	443462	4817424	temperature: 20.7C
06/07/03	1102	F	29.5	68	no	435A093D62	443459	4817432	
06/07/03	1112	sa				uncaptured	443369	4817404	recharge pool temp: 58.4C
06/07/03	1118	sa	11.5	50	R	433D0D0E61	443365	4817401	
06/07/03	1128	saf	10.0	48	no	4350101C5F	443259	4817451	
06/07/03	1129					uncaptured	443253	4817461	
06/07/03	1142	sa	11.5	52	R	433C5D7064	443174	4817464	
06/07/03	1147	F	36.0	74	R	434E2B7F25	443165	4817469	
06/07/03	1153	F	25.0	67	no	4357473D0D	443096	4817474	
06/07/03	1159	sa	12.0	50	no	435A4A1B5D	443089	4817485	
06/07/03	1203	F	26.0	71	no	435B5C5301	443056	4817491	
06/07/03	1216	sa	11.5	49	R	433D197477	442899	4817604	
06/07/03	1221	sa	8.0	43	R	435236220E	442890	4817596	
06/07/03	1224	sa	8.5	45	R	435975480D	442890	4817596	
06/07/03	1229	sa	9.5	44	R	435035032A	442856	4817615	
06/07/03	1230	sa	14.0	50	R	434F5D5462	442856	4817615	
06/07/03	1231	sa	11.0	48	R	433C5E0E7B	442856	4817615	
06/07/03	1235	sa	11.5	50	R	434F5C3850	442850	4817611	oxbow pool
06/07/03	1236	sa	11.0	50	R	4357474242	442850	4817611	oxbow pool

06/07/03	1240	sa	9.0	41	R	435926650F	442839	4817608	oxbow pool
06/07/03	1241	sa			R	4357442D00	442839	4817608	oxbow pool
06/07/03	1242	sa			R	43506C2D0F	442839	4817608	oxbow pool
06/07/03	1249	sa			R	435A336346	442839	4817608	oxbow pool
06/07/03	1250	sa			R	434E100116	442839	4817608	oxbow pool
06/07/03	1251	sa			R	43577D7F0B	442839	4817608	oxbow pool
06/07/03	1252	sa			R	435A00426E	442839	4817608	oxbow pool
06/07/03	1300					*Coluber constrictor*			big rock next to fenceline below camp; no GPS
06/07/03	1458	sa	9.5	48	no	2003 toe clip	440976	4816988	isolated oxbow
06/07/03	1513					PTF tadpoles	440976	4816988	isolated oxbow
06/07/03	1514	F	27.5	69	R	4358056A44	440804	4817010	temperature: 25.8C
06/07/03	1518	sa	9.5	46	no	2003 toe clip	440803	4817004	
06/07/03	1523	sa	12.0	52	no	2003 toe clip	440843	4816999	
06/07/03	1524	M	15.0	56	no	2003 toe clip	440843	4816999	small, but could be breeding size; prominent thumb pads
06/07/03	1530	sa	8.5	44	no	2003 toe clip	440847	4817002	
06/07/03	1537					*Coluber constrictor*	440970	4816964	
06/07/03	1538	sa	12.0	50	no	2003 toe clip	440975	4816969	
06/07/03	1539	sa	11.5	50	no	2003 toe clip	440975	4816969	
06/07/03	1546	sa	7.0	44	no	2003 toe clip	441031	4816966	
06/07/03	1554	F	30.5	75	R	4350506E41	441097	4816938	oxbow pool
06/07/03	1559	M	18.5	58	R	435B2A2063	441097	4816938	oxbow pool
06/07/03	1623					*Pituophis catenifer*	441319	4816774	dry creek bed
06/07/03	1630					end			confluence of Dry Creek and Butte Creek
06/07/03	1640					start point			
06/07/03	1659					Natural Exclosure			no frogs in this section; stopped for the day
06/08/03	1030					start			worked upstream from fenceline below campsite to N.E.
06/08/03	1034	sa	10.5	49	no	435B2B0157	442695	4817595	oxbow pool
06/08/03	1035	M	15.5	56	R	4357461251	442695	4817595	oxbow pool
06/08/03	1036	sa	12.0	51	no	435777396C	442695	4817595	oxbow pool
06/08/03	1045	sa	10.0	47	R	4352582D0F	442695	4817595	oxbow pool
06/08/03	1050	sa	10.0	47	no	433D0A5071	442660	4817609	
06/08/03	1205	sa	19.5	58	R	435A112676	442501	4817428	
06/08/03	1206					uncaptured	442497	4817418	
06/08/03	1530	sa	11.5	51	no	4350163107	440824	4817009	windy
06/08/03	1544	sa	10.0	48	no	435A447A38	441030	4816966	

06/08/03	1550	sa	12.0	53	no	435A3B5B2A			no GPS; across canyon from oxbow pool
06/08/03	1553	sa	11.5	50	no	43512B2A78			no GPS; across canyon from oxbow pool
06/08/03	1618	sa	7.5	43	R	435B4C0467	441029	4816976	toe clip yesterday; PIT tag today
06/08/03	1630	sa				uncaptured	440804	4817010	oxbow pool; became extrememely windy; no frogs up
06/08/03	1700					end			fenceline in canyon
08/09/03	945	M	21	60	no	43501D783F	441101	4816936	oxbow pool
08/09/03	946					uncaptured	441101	4816936	oxbow pool
08/09/03	947					uncaptured	441101	4816936	oxbow pool
08/09/03	948					uncaptured	441101	4816936	oxbow pool
08/09/03	1001	MT	4	36	no		441111	4816920	stream
08/09/03	1002	MT					441111	4816920	stream
08/09/03	1003	MT					441115	4816918	stream
08/09/03	1004	MT					441111	4816920	stream
08/09/03	1007	F	29	67	no	435852595C	441143	4816909	scour pool
08/09/03	1012	MT					441148	4816905	scour pool
08/09/03	1013	MT					441151	4816907	scour pool
08/09/03	1014					uncaptured	441151	4816907	scour pool
08/09/03	1015					uncaptured	441151	4816907	scour pool
08/09/03	1019	M	16.5	58	no	433D004E57	441149	4816901	scour pool
08/09/03	1027	M	16	56	toe-clipped (2002)	433F522442	441177	4816891	scour pool
08/09/03	1028	MT					441177	4816891	scour pool
08/09/03	1037	MT					441239	4816847	scour pool
08/09/03	1040	MT					441243	4816841	scour pool
08/09/03	1047	MT					441371	4816729	scour pool
08/09/03	1048	MT					441388	4816716	scour pool
08/09/03	1058	MT					441423	4816683	scour pool
08/09/03	1101	MT					441445	4816682	scour pool
08/09/03	1103	MT					441487	4816704	oxbow pool
08/09/03	1104					uncaptured	441487	4816704	oxbow pool
08/09/03	1106	MT					441487	4816704	oxbow pool
08/09/03	1135	MT					442079	4816967	stream - start point
08/09/03	1137	MT		34			442093	4816972	stream
08/09/03	1140	MT					442101	4816973	stream
08/09/03	1141	MT					442105	4816970	oxbow pool

08/09/03	1142	MT					442105	4816970	oxbow pool
08/09/03	1143	MT					442105	4816970	oxbow pool
08/09/03	1144	MT					442107	4816976	stream
08/09/03	1146	MT					442111	4816969	stream
08/09/03	1147	MT					442111	4816969	stream
08/09/03	1149	MT					442123	4816977	stream
08/09/03	1150	MT					442123	4816977	stream
08/09/03	1151	MT					442127	4816978	stream
08/09/03	1152	MT					442127	4816978	stream
08/09/03	1153	MT					442127	4816978	stream
08/09/03	1154	MT					442127	4816978	stream
08/09/03	1155	MT					442159	4817006	stream
08/09/03	1156	MT					442177	4817020	stream
08/09/03	1200	MT					442208	4817052	scour pool
08/09/03	1205	MT					442233	4817102	stream
08/09/03	1207	MT					442252	4817143	oxbow pool
08/09/03	1210	MT					442255	4817158	oxbow pool
08/09/03	1212	MT					442258	4817174	stream
08/09/03	1214	MT					442279	4817211	stream
08/09/03	1215	MT					442279	4817211	stream
08/09/03	1257	MT							natural exclosure
08/09/03	1303	MT					442387	4817304	just downstream of NE
08/09/03	1304	MT					442387	4817304	just downstream of NE
08/09/03	1305	MT					442387	4817304	just downstream of NE
08/09/03	1312	MT					442407	4817312	hole in rock
08/09/03	1313				Hyla tadpoles		442407	4817312	hole in rock
08/09/03	1330	MT							just above 2nd pinch
08/09/03	1351	MT					442682	4817589	oxbow pool
08/09/03	1410	MT					442853	4817793	stream
08/09/03	1414	MT					442843	4817590	stream
08/09/03	1415	MT					442839	4817597	oxbow pool
08/09/03	1416	MT					442840	4817604	oxbow pool
08/09/03	1417	MT					442840	4817604	oxbow pool
08/09/03	1417	MT					442841	4817606	oxbow pool
08/09/03	1419	MT					442843	4817604	oxbow pool
08/09/03	1420	MT					442843	4817604	oxbow pool

08/09/03	1421	MT					442846	4817608	oxbow pool
08/09/03	1422	MT					442853	4817607	oxbow pool
08/09/03	1423	M	14.5	56	yes	433D197477	442853	4817609	oxbow pool
08/09/03	1424	MT					442853	4817609	oxbow pool
08/09/03	1427	MT					442861	4817604	oxbow pool
08/09/03	1431	MT					442863	4817607	oxbow pool
08/09/03	1435	F				uncaptured	442846	4817607	oxbow pool (near source pool)
08/09/03	1440	F	14.5	56	no	435236220E	442878	4817597	oxbow pool
08/09/03	1441					uncaptured	442878	4817597	oxbow pool
08/09/03	1442	MT							Pool at side rock before 3rd pinch
08/09/03	1443	MT							Pool at side rock before 3rd pinch
08/09/03	1444	MT							Pool at side rock before 3rd pinch
08/09/03	1447	MT					442907	4817617	stream
08/09/03	1450	MT					442909	4817612	stream
08/09/03	1457	MT					442959	4817525	just after 3rd pinch - stream
08/09/03	1505	MT					443111	4817462	oxbow pool
08/09/03	1506	MT					443111	4817462	oxbow pool
08/09/03	1507	MT					443113	4817457	oxbow pool
08/09/03	1508	MT					443128	4817466	stream
08/09/03	1513	MT					443133	4817465	stream
08/09/03	1514	MT					443133	4817465	stream
08/09/03	1515	MT					443245	4817464	stream
08/09/03	1516	MT					443257	4817458	stream
08/09/03	1517	MT					443259	4817453	stream
08/09/03	1518	MT					443262	4817453	stream
08/09/03	1519	MT					443262	4817453	stream
08/09/03	1520	MT					443262	4817453	stream
08/09/03	1521	MT					443262	4817453	stream
08/09/03	1522	MT					443262	4817453	stream
08/09/03	1523	MT					443262	4817453	stream
08/09/03	1524	MT					443262	4817453	stream
08/09/03	1525	MT					443267	4817450	stream
08/09/03	1527	MT					443445	4817430	scour pool
08/09/03	1528	MT					443451	4817418	scour pool
08/09/03	1529	MT					443451	4817418	scour pool
08/09/03	1530	MT					443483	4817437	stream
08/09/03	1531	MT					443504	4817461	stream

08/09/03	1532	MT					443504	4817461	stream
08/09/03	1533	MT					443508	4817471	stream
08/09/03	1537	MT					443559	4817517	stream
08/09/03	1539	MT					443566	4817519	stream
08/09/03	1540	MT					443571	4817523	stream
08/09/03	1541	MT					443578	4817531	stream
08/09/03	1542	MT					443587	4817534	stream
08/09/03	1543	MT					443589	4817535	stream
08/09/03	1544	MT					443605	4817544	stream
08/09/03	1545	MT					443668	4817570	scour pool
08/09/03	1546	MT					443696	4817582	stream
08/09/03	1550	F	20	60	no	435A2E0F43	443726	4817616	oxbow pool
06/05/04	1410					START BLM TRANSECT			
06/05/04	1415	SA	9.5	48	no	435A4C176A	440842	4817004	stream
06/05/04	1427	SAF	13	53	no	4358487820	440975	4816984	previously toe clipped? oxbow pool
06/05/04	1428	SA				uncaptured	440975	4816984	oxbow pool
06/05/04	1447	SAF	13.5	53	no	4350605B7E	441162	4816901	stream - canyon, very windy
06/05/04	1453	F	24	68	YES	435852595C	441163	4816902	stream, canyon
06/05/04	1512					FINISH BLM TRANSECT			
06/06/04	950		45-55mm			tadpoles - breeding site	443806	4817950	1 scoop, 6 tadpoles
06/06/04	1000					START STATE TRANSECT-East			
06/06/04	1005	SA	7	42	no	43584B4A1A	443855	4817837	stream - check point on map - last number missing on UTME.
06/06/04	1020	Adult				uncaptured	443719	4817615	sidebow channel
06/06/04	1036	SA	11.5	50	no	433F506668	443535	4817493	stream, skin tear at PIT incision
06/06/04	1042	SA				uncaptured	443517	4817466	small oxbow, very skittish
06/06/04	1048	SAF	10.5	50	no	435B2A4C45	443499	4817468	oxbow pool
06/06/04	1049	SA	6.5	41	no	435805161C	443499	4817468	oxbow pool
06/06/04	1102	F	27.5	67	YES	43504D4627	443486	4817438	oxbow pool, breeding site - but no tads this time, water 62 degrees F
06/06/04	1103	F	10.5	48	no	434D7E1408	443486	4817438	oxbow pool
06/06/04	1104	F	28	66	YES	43573B5E21	443486	4817438	oxbow pool
06/06/04	1106	F	15	56	no	435A2F2A6D	443486	4817438	oxbow pool
06/06/04	1132	F	36	74	no	4350004104	443486	4817438	oxbow pool; toe clipped RR 03

06/06/04	1135	SA	6.5	42	no	43583F562E	443487	4817438	oxbow pool
06/06/04	1138	SAM	12	50	no	43594F5E16	443489	4817429	oxbow pool
06/06/04	1142	F				uncaptured	443491	4817429	oxbow pool
06/06/04	1145	M	15.5	56	no	4350583657	443491	4817429	oxbow pool
06/06/04	1146	SAM	9	45	no	43525C583E	443489	4817429	oxbow pool
06/06/04	1151	M	26.5	57	no	433F443021	443489	4817429	oxbow pool
06/06/04	1152	SA				uncaptured	443489	4817429	oxbow pool
06/06/04	1205	SAM	13	51	no	43524B7551	443467	4817459	stream
06/06/04	1212	SA	11	49	no	43594B5151	443467	4817456	stream
06/06/04	1213	SA				uncaptured	443467	4817459	stream
06/06/04	1220	SAF	9	47	no	435035787F	443454	4817415	stream - injury on right eye
06/06/04	1232	SA	7	43	no	43583B0706	443362	4817403	braid channel
06/06/04	1235	SAF	13	52	no	435243287E	443356	4817414	braid channel
06/06/04	1240	SA	8.5	45	no	43595D7C2A	443345	4817422	sidebow channel - PIT could be 43595D7C2A
06/06/04	1243	SAF	23	53	no	43574C7516	443345	4817422	sidebow channel
06/06/04	1300			60mm		tadpole	443295	4817421	breeding site - scour pool - algal mat, emergent veg
06/06/04	1301	F	16	57	no	433F39023D	443295	4817422	breeding site - scour pool
06/06/04	1302	F	12.5	53	no	435A3A290E	443296	4817422	breeding site - scour pool
06/06/04	1303	F	35	73	no	435A3B015F	443295	4817423	breeding site - scour pool
06/06/04	1304	F	48	78	YES	434E2B7F25	443293	4817422	breeding site - scour pool
06/06/04	1316	SA	7.5	45	no	433F1F312B	443276	4817451	stream - no right eye (photos)
06/06/04	1322	SA	9	47	no	434D480652	443273	4817454	stream
06/06/04	1331	SAF	10.5	52	no	434E2A2A0F	443253	4817439	sidebow channel
06/06/04	1405	M	15.5	55	no	433C734E5A	442837	4817612	oxbow pool
06/06/04	1410	F	30.5	69	YES	435A336346	442843	4817613	oxbow pool, toe clip left front -2002?
06/06/04	1416	SA	10	48	no	435A4C6906	442733	4817601	stream
06/06/04	1422	SAF	10	48	no	435A330B7A	442680	4817605	oxbow pool below camp
06/06/04	1423	F	17	55	no	43580F6E6E	442681	4817606	stream
06/06/04	1427	SA	8.5	46	no	435056787A	442681	4817605	oxbow pool below camp
06/06/04	1432	SA	9	47	no	435B363A58	442678	4817614	oxbow pool below camp
06/06/04	1433	F	15.5	55	no	43511A7F29	442678	4817613	oxbow pool below camp
06/06/04	1443	F	28.5	69	no	435A011F02	442681	4817607	stream
06/06/04	1526	M	11.5	51	no	4358410944	442681	4817615	oxbow pool below camp
06/06/04	1531	F	29.5	68	no	4358482376	442681	4817613	oxbow pool below camp
06/06/04	1537	SA				uncaptured	442681	4817613	oxbow pool below camp
06/06/04	1542	SA	9	46	no	43597F5C59	442623	4817599	stream - shedding skin

06/06/04	1620	SAM	10.5	49	no	43597C431F	442378	4817297	in cattails (N) in natural exclosure
06/06/04	1621	SA				uncaptured	442377	4817296	in cattails (N) in natural exclosure
06/06/04	1634	SAF	14.5	53	no	435246634E	442371	4817274	in cattails (S), natural exclosure
06/06/04	1700					FINISHED STATE TRANSECT			
06/07/04	900					START STATE TRANSECT - below camp			
06/07/04	910	F	29	66	YES	435777396C	442681	4817613	oxbow below camp - recapture from previous year, not first pass
06/07/04	912	M	23	62	no	43505D364F	442681	4817615	oxbow pool below camp
06/07/04	915	SAM	10	49	no	433C6F5C27	442681	4817613	oxbow pool below camp
06/07/04	920	F	29	69	YES	4358482376	442681	4817613	oxbow pool below camp
06/07/04	922	SAM	12	49	no	4334476D33	442681	4817613	oxbow pool below camp
06/07/04	926	M	18	51	no	43593D5237			oxbow below camp - frog emptied stomach contents - photo
06/07/04	930	SA	11	48	no	435803326E	442681	4817615	oxbow pool below camp
06/07/04	935	SA	9	46	YES	435056787A	442681	4817613	oxbow pool below camp
06/07/04	937	SA	11	48	YES	435A330B7A	442681	4817613	oxbow pool below camp
06/07/04	940	SA				uncaptured	442681	4817615	oxbow pool below camp
06/07/04	1030					START STATE TRANSECT -East	443805	4817879	moved upstream from 2001 point
06/07/04	1037					uncaptured	443805	4817879	sidebow pool - skittish
06/07/04	1041	SA	8	43	no	4352346333	443803	4817874	sidebow pool
06/07/04	1042					tadpole	443803	4817874	sidebow pool
06/07/04	1045	Adult				uncaptured	443803	4817872	sidebow pool
06/07/04	1050	SA	10	48	no	***	443807	4817872	***ran out of PIT tags - no marks
06/07/04	1110	M	19	57	YES	435A3B583D	443662	4817552	dark color, cold - stream (photo); recapture from previous year
06/07/04	1118	SAF	10.5	49	no	***	443539	4817537	stream
06/07/04	1119	F	14.5	53	no	***	443539	4817537	stream
06/07/04	1123	SAF	9	49	YES	433F506668	443538	4817493	stream
06/07/04	1130	F	28	67	YES	43504D4627	443484	4817409	oxbow breeding site (east end)
06/07/04	1131	SAM	13	50	no	***	443484	4817409	oxbow pool
06/07/04	1132	M	17	57	no	***	443484	4817409	oxbow pool
06/07/04	1135	M	16	58	YES	4350583657	443484	4817409	oxbow pool
06/07/04	1144	SAF	15	51	no	***	443484	4817409	oxbow pool; regurgitated damselfly larvae
06/07/04	1147	M	16	54	YES	433F443021	443484	4817409	oxbow pool

06/07/04	1150	M	13.5	51	no	***	443484	4817426	oxbow pool (west end)
06/07/04	1200	SA	11.5	48	YES	434D7E1408	443484	4817426	oxbow pool (west end)
06/07/04	1204	SAM	11	48	no	***	443484	4817426	oxbow pool (west end)
06/07/04	1207	F	17	55	no	***	443484	4817426	oxbow pool (west end)
06/07/04	1208					uncaptured	443484	4817426	oxbow pool (west end)
06/07/04	1223	SAM	13	50	no	***	443469	4817435	stream
06/07/04	1226	SAF	12	48	no	***	443469	4817435	stream
06/07/04	1228	SA	10	49	YES	43594B5151	443467	4817438	stream
06/07/04	1229	SAM	10.5	48	no	***	443465	4817430	stream
06/07/04	1235	SAF	15	53	no	***	443459	4817431	stream
06/07/04	1236	SA				uncaptured	443450	4817416	stream
06/07/04	1242	SAF	14	52	no	***	443365	4817402	stream
06/07/04	1252	SAF	11	49	no	***	443365	4817402	stream
06/07/04	1256	SAF	13.5	52	YES	43574C7516	443348	4817419	stream
06/07/04	1300	SA	8.5	45	YES	43595D7C2A	443331	4817420	PIT could be 43595D7C2E
06/07/04	1301			79		tadpole	443331	4817420	stream
06/07/04	1305	SAF	14	52	no	***	443316	4817422	stream
06/07/04	1306	SAF	13	52	no	***	443316	4817422	stream
06/07/04	1312	F	34	74	YES	435A3B015F	443306	4817425	stream - scour pool
06/07/04	1313	SA	8.5	45	no	***	443306	4817425	stream - scour pool
06/07/04	1316	F	48	78	YES	434E2B7F25	443306	4817425	stream - scour pool
06/07/04	1320	SA	12	50	YES	435A3A290E	443306	4817425	stream - scour pool
06/07/04	1326	SAF	7.5	45	no	***	443267	4817439	stream
06/07/04	1328	F	36	75	no	***	443263	4817438	stream
06/07/04	1329	SA				uncaptured	443265	4817436	stream
06/07/04	1330	Adult				uncaptured	443265	4817436	stream
06/07/04	1335	SAF	12	49	no	***	443247	4817442	stream
06/07/04	1337	SAF	10	45	no	***	443252	4817435	side channel
06/07/04	1338					uncaptured	443252	4817435	side channel
06/07/04	1345	SAF	12	48	no	***	443265	4817454	stream
06/07/04	1348	SA				uncaptured	443240	4817459	stream
06/07/04	1353	F	32.5	68	YES	433C5D7064	443201	4817460	recapture from 2003 - stream
06/07/04	1356	SA	10	46	no	***	443177	4817471	stream
06/07/04	1402	F	14	52	no	***	443103	4817479	stream
06/07/04	1403	SAF	12.5	51	no	***	443104	4817470	stream
06/07/04	1413	SAM	12.5	50	no	***	443093	4817478	side channel
06/07/04	1414	SAF	11.5	50	no	***	443079	4817489	stream

06/07/04	1416	SAM	9	48	no	***	443071	4817482	stream
06/07/04	1417	SA				uncaptured	443071	4817482	stream
06/07/04	1423	F	32.5	70	no	***	443071	4817483	stream
06/07/04	1428	SAF	12	51	no	***	443067	4817484	stream
06/07/04	1429			58		tadpole	443066	4817485	probable breeding area - scour pool side
06/07/04	1430	F	32.5	68	no	***	443056	4817487	stream
06/07/04	1433	F	33	68	no	***	443054	4817490	stream
06/07/04	1446					uncaptured	442899	4817613	stream - new cattails in this area
06/07/04	1450	SA	6.5	41	no	***	442879	4817597	oxbow pool
06/07/04	1451	SAM	10	46	no	***	442879	4817597	oxbow pool
06/07/04	1452	SAM	10	47	no	***	442879	4817597	oxbow pool
06/07/04	1508	SAM	11	50	no	***	442682	4817594	stream, rugose skin
06/07/04	1510	F	29	70	YES	435A011F02	442682	4817594	stream
06/07/04	1547	SA	10	47	no	***	442667	4817602	stream
06/07/04	1551	SA	10	46	no	***	442662	4817606	side pool - thumb & index on rt hand okay, all other fingers gone (photo)
06/07/04	1554	SA	11.5	46	no	***	442662	4817606	side pool
06/07/04	1620	F	18	57	no	***	442497	4817433	oxbow pool
06/07/04	1621	M	12.5	54	no	***	442503	4817430	oxbow pool - no spots
06/07/04	1634	SAM	11	49	YES	43597C431F	442378	4817297	natural exclosure - cattails
06/07/04	1639	F	15.5	55	YES	435246634E	442373	4817286	natural exclosure - cattails
06/07/04	1640					uncaptured	442373	4817286	natural exclosure - cattails
06/07/04	1700					SPECIES?	442250	4817155	backwater channel SPECIES QUESTION - young bullfrog?
06/07/04	1715					END STATE TRANSECT			
06/07/04	1730					START BLM TRANSECT			
06/07/04	1750	F	24	68	YES	435852595C	441163	4816902	stream, canyon
06/07/04	1800					uncaptured	441097	4816938	oxbow pool - very windy, frog skittish
06/07/04	1815					FINISH BLM TRANSECT			
08/20/04	827	M	13	54	no	4357430966	441095	4816942	oxbow pool; dead fish present
08/20/04	835	F	25	65	YES	43512B2A78	441103	4816942	oxbow pool
08/20/04	840	M	15.5	51	no	4357371A19	441103	4816942	oxbow pool
08/20/04	841	F	40	75	no	4358513A42	441099	4816942	GRAVID female; oxbow pool
08/20/04	846	M	14	54	no	43505C5415	441103	4816939	oxbow pool
08/20/04	856					uncaptured	441103	4816939	oxbow pool

08/20/04	859	MT	7	41	no	43573B5B18	441096	4816937	stream
08/20/04	900	MT	4	34	no	too little	441099	4816921	stream
08/20/04	903	MT				uncaptured	441103	4816921	stream
08/20/04	904	MT				uncaptured	441103	4816932	stream
08/20/04	908	MT	5.5	36	no	too little	441111	4816921	stream
08/20/04	909	MT	5	38	no	too little	441111	4816921	stream
08/20/04	914	MT	4	38	no	too little	441159	4816910	stream
08/20/04	916	MT				uncaptured	441159	4816910	stream
08/20/04	925	MT				uncaptured	441250	4816842	recharge pool
08/20/04	927	MT	2.5	30	no	too little	441247	4816838	recharge pool
08/20/04	932	MT	6	39	no	too little	441340	4816761	stream
08/20/04	933	MT				uncaptured	441340	4816762	stream
08/20/04	935	MT	6.5	39	no	too little	441344	4816761	stream
08/20/04	938	MT	6.5	38	no	too little	441366	4816742	stream
08/20/04	939	MT				uncaptured	441366	4816744	stream
08/20/04	940	MT				uncaptured	441366	4816744	stream
08/20/04	943	MT	6	38	no	too little	441372	4816733	stream
08/20/04	944	MT	5.5	38	no	too little	441372	4816733	stream
08/20/04	945	MT	4.5	37	no	too little	441377	4816728	stream
08/20/04	946	MT	4.5	38	no	too little	441377	4816728	stream
08/20/04	950	MT				DEAD MT - collected	441381	4816725	stream
08/20/04	955	MT	6	39	no	too little	441393	4816715	stream
08/20/04	956	MT	5.5	38	no	too little	441392	4816711	stream
08/20/04	958	MT	5	37	no	too little	441393	4816715	stream
08/20/04	1001	MT	4.5	36	no	too little	441397	4816708	stream
08/20/04	1002	MT	8	42	no	43526A4A64	441397	4816708	stream
08/20/04	1006	MT	6.5	39	no	too little	441401	4816704	stream
08/20/04	1007	MT				uncaptured	441401	4816704	stream
08/20/04	1008	MT	5.5	38	no	too little	441401	4816704	stream
08/20/04	1009	MT	4	37	no	too little	441396	4816696	stream
08/20/04	1012	MT	4.5	36	no	too little	441404	4816696	stream
08/20/04	1026	MT	3.5	34	no	too little	442088	4816976	stream
08/20/04	1029	MT				uncaptured	442103	4816981	stream
08/20/04	1030	MT	4	35	no	too little	442105	4816970	sidebow channel
08/20/04	1031	MT	4.5	36	no	too little	442105	4816970	sidebow channel
08/20/04	1032	MT				uncaptured	442105	4816970	sidebow channel
08/20/04	1033	MT	5	38	no	too little	442105	4816970	sidebow channel

08/20/04	1036	MT				uncaptured	442121	4816972	stream
08/20/04	1038	MT	4	31	no	too little	442124	4816979	stream
08/20/04	1040	MT				uncaptured	442125	4816982	stream
08/20/04	1041	MT				uncaptured	442135	4816992	stream
08/20/04	1044	MT				uncaptured	442155	4817000	stream
08/20/04	1045	MT				uncaptured	442155	4817000	stream
08/20/04	1046	MT				uncaptured	442167	4817013	stream
08/20/04	1047	MT	5	36	no	too little	442167	4817013	stream
08/20/04	1048	MT	3.5	35	no	too little	442172	4817014	stream
08/20/04	1049	MT				uncaptured	442174	4817017	stream
08/20/04	1050	MT	4	35	no	too little	442174	4817017	stream
08/20/04	1055	MT	3.5	33	no	too little	442191	4817030	stream
08/20/04	1057	MT	3.5	34	no	too little	442198	4817047	stream
08/20/04	1100	MT	3.5	33	no	too little	442202	4817053	stream
08/20/04	1103	MT	4	34	no	too little	442202	4817062	stream
08/20/04	1104	MT				uncaptured	442202	4817064	stream
08/20/04	1105	MT				uncaptured	442202	4817064	stream
08/20/04	1107	MT	4	37	no	too little	442203	4817069	scour pool
08/20/04	1108	MT	2	24	no	too little	442210	4817076	scour pool
08/20/04	1111	MT	4	34	no	too little	442212	4817077	scour pool
08/20/04	1113	MT	3	34	no	too little	442221	4817086	scour pool
08/20/04	1115	MT				uncaptured	442227	4817094	scour pool
08/20/04	1120	MT	3.5	33	no	too little	442236	4817091	scour pool
08/20/04	1121	MT	3.5	34	no	too little	442237	4817101	stream
08/20/04	1126	MT	3.5	35	no	too little	442237	4817113	stream
08/20/04	1127	MT	4.5	35	no	too little	442239	4817110	stream
08/20/04	1130	MT	2	27	no	too little	442239	4817111	stream
08/20/04	1131	MT				uncaptured	442241	4817113	stream
08/20/04	1133	MT	4	35	no	too little	442248	4817127	stream
08/20/04	1136	MT				uncaptured	442247	4817137	stream
08/20/04	1137	MT	5	38	no	too little	442242	4817141	stream
08/20/04	1140	MT				uncaptured	442262	4817143	sidebow pool
08/20/04	1141	MT	4	36	no	too little	442250	4817150	stream
08/20/04	1143	MT				uncaptured	442270	4817156	sidebow pool
08/20/04	1146	MT	3.5	33	no	too little	442271	4917177	stream
08/20/04	1147	MT				uncaptured	442260	4817174	stream
08/20/04	1150	MT	4.5	36	no	too little	442267	4817200	stream

08/20/04	1151	MT	4.5	38	no	too little	442275	4817195	stream
08/20/04	1154	MT	4	36	no	too little	442276	4817202	stream
08/20/04	1155	MT	5	39	no	too little	442276	4817203	stream
08/20/04	1156	MT	5.5	38	no	too little	442285	4817208	stream
08/20/04	1244	MT	4	35	no	too little	442377	4817291	natural exclosure - cattails
08/20/04	1247	F	28	68	no	435B55694D	442394	4817301	natural exclosure - cattails
08/20/04	1252	MT				uncaptured	442369	4817289	natural exclosure - cattails
08/20/04	1253	MT				uncaptured	442369	4817289	natural exclosure - cattails
08/20/04	1256	MT	4.5	37	no	too little	442335	4817257	natural exclosure
08/20/04	1259	MT				uncaptured	442335	4817262	natural exclosure
08/20/04	1300	MT	3	34	no	too little	442338	4817262	natural exclosure
08/20/04	1301	MT	3	33	no	too little	442338	4817262	natural exclosure
08/20/04	1305	MT	5.5	37	no	too little	442337	4817277	natural exclosure
08/20/04	1308	F	28.5	67	no	433D052673	442344	4817270	natural exclosure
08/20/04	1320	MT				uncaptured	442386	4817306	natural exclosure
08/20/04	1321	MT				uncaptured	442386	4817308	natural exclosure
08/20/04	1322	MT	4.5	38	no	too little	442390	4817304	natural exclosure
08/20/04	1323	MT				too little	442390	4817304	natural exclosure
08/20/04	1324	MT				too little	442390	4817308	natural exclosure
08/20/04	1325	MT				too little	442395	4817308	natural exclosure
08/20/04	1326	MT				too little	442395	4817308	natural exclosure
08/20/04	1333	MT				too little	442399	4817305	natural exclosure
08/20/04	1334	MT				too little	442402	4817315	natural exclosure
08/20/04	1335	MT				too little	442402	4817315	natural exclosure
08/20/04	1336	MT				too little	442402	4817315	natural exclosure
08/20/04	1337	MT				too little	442405	4817315	rock pool below exclosure
08/20/04	1338	MT				too little	442405	4817315	rock pool below exclosure
08/20/04	1339	MT				too little	442405	4817315	rock pool below exclosure
08/20/04	1340	MT				too little	442402	4817331	scour pool below exclosure
08/20/04	1342	MT				too little	442442	4817358	isoloated oxbow
08/20/04	1349					uncaptured	442496	4817425	oxbow pool
08/20/04	1352	MT				too little	442517	4817414	stream
08/20/04	1356	MT				too little	442569	4817476	stream
08/20/04	1357	MT				too little	442571	4817475	stream
08/20/04	1358	MT				too little	442567	4817483	stream
08/20/04	1359	MT				too little	442579	4817500	stream
08/20/04	1400	MT				too little	442579	4817500	stream

08/20/04	1401	MT				too little	442576	4817508	stream
08/20/04	1402	MT		40		too little	442576	4817506	stream
08/20/04	1405	MT				too little	442602	4817532	2nd pinch - couldn't get reading - extrapolated in ArcGIS
08/20/04	1411	MT				too little	442591	4817572	stream
08/20/04	1415	MT				too little	442596	4817583	stream
08/20/04	1416	MT				too little	442613	4817587	stream
08/20/04	1417	MT				too little	442608	4817587	stream
08/20/04	1418	MT				too little	442623	4817593	stream
08/20/04	1419	MT				too little	442623	4817593	stream
08/20/04	1420	MT				too little	442625	4917594	stream
08/20/04	1421	MT				too little	442625	4917594	stream
08/20/04	1422	MT				too little	442632	4817598	stream
08/20/04	1423	MT				too little	442638	4817604	stream
08/20/04	1424	MT				too little	442637	4817606	oxbow pool
08/20/04	1425	MT				too little	442637	4817606	oxbow pool
08/20/04	1426	MT				too little	442656	4817604	stream
08/20/04	1427	MT				too little	442675	4817612	oxbow pool
08/20/04	1428	MT				too little	442675	4817612	oxbow pool
08/20/04	1437	MT				too little	442675	4817612	oxbow pool
08/20/04	1438	MT				too little	442675	4817612	oxbow pool
08/20/04	1439	MT				too little	442699	4817596	stream
08/20/04	1441	MT				too little	442703	4817596	stream
08/20/04	1450	MT				too little	442711	4817599	stream
08/20/04	1459	MT				too little	442739	4817591	stream
08/20/04	1500	MT				too little	442750	4817596	stream
08/20/04	1501	MT				too little	442751	4817595	stream
08/20/04	1503	MT				too little	442759	4817597	stream
08/20/04	1505	MT				too little	442790	4817602	stream
08/20/04	1506	MT				too little	442805	4817600	stream
08/20/04	1507	MT				too little	442805	4817599	stream
08/20/04	1508	MT				too little	442809	4817597	stream
08/20/04	1509	MT				too little	442815	4817599	stream
08/20/04	1510	MT				too little	442823	4817598	stream
08/20/04	1511	MT				too little	442824	4817590	stream
08/20/04	1512	MT				too little	442823	4817598	stream
08/20/04	1513	MT				too little	442830	4817596	stream

08/20/04	1514	MT				too little	442844	4817607	recharge pool
08/20/04	1515	MT				too little	442844	4817607	recharge pool
08/20/04	1516	MT				too little	442842	4817611	recharge stream
08/20/04	1517	MT				too little	442844	4817614	recharge stream
08/20/04	1518	MT				too little	442845	4817610	recharge stream
08/20/04	1519	MT				too little	442859	4817605	stream
08/20/04	1520	MT				too little	442853	4817598	stream
08/20/04	1521	MT				too little	442851	4817603	stream
08/20/04	1522	MT				too little	442848	4817600	stream
08/20/04	1523	MT				too little	442845	4817599	stream
08/20/04	1524	MT				too little	442880	4817600	sidebow pool
08/20/04	1525	MT				too little	442892	4817601	stream
08/20/04	1526	MT				too little	442905	4817615	stream
08/20/04	1527	MT				too little	442907	4817614	stream
08/20/04	1528	MT				too little	442920	4817607	stream
08/20/04	1529	MT				too little	442917	4817609	stream
08/20/04	1534	MT				too little	443033	4817473	stream
08/20/04	1536	MT				too little	443053	4817473	stream
08/20/04	1539	MT				too little	443098	4817461	scour pool
08/20/04	1540	MT				too little	443098	4817461	scour pool
08/20/04	1541	MT				too little	443102	4817459	stream
08/20/04	1542	MT				too little	443110	4817455	stream
08/20/04	1544	MT				too little	443113	4817475	stream
08/20/04	1545	MT				too little	443113	4817475	stream
08/20/04	1546	MT				too little	443121	4817469	stream
08/20/04	1547	MT				too little	443133	4817463	stream
08/20/04	1548	MT				too little	443138	4817462	stream
08/20/04	1549	MT				too little	443153	4817465	scour pool
08/20/04	1550	MT				too little	443167	4817460	scour pool
08/20/04	1551	MT				too little	443191	4817457	scour pool
08/20/04	1552	MT				too little	443193	4817456	scour pool
08/20/04	1553	MT				too little	443207	4817455	scour pool
08/20/04	1554	MT				too little	443211	4817455	scour pool
08/20/04	1555	MT				too little	443232	4817456	scour pool
08/20/04	1556	MT				too little	443201	4817467	scour pool
08/20/04	1557	MT				too little	443201	4817467	scour pool
08/20/04	1558	MT				too little	443216	4817459	scour pool

08/20/04	1559	MT				too little	443241	4817462	scour pool
08/20/04	1602	MT				too little	443266	4817453	stream
08/20/04	1605	MT				too little	443302	4817423	scour pool
08/20/04	1608	MT				too little	443368	4817409	recharge pool
08/20/04	1609	MT				too little	443368	4817409	recharge pool
08/20/04	1610	MT				too little	443368	4817409	recharge pool
08/20/04	1611					uncaptured	443370	4817401	recharge pool
08/20/04	1613	MT				too little	443378	4817409	recharge pool
08/20/04	1614	MT				too little	443378	4817409	recharge pool
08/20/04	1615	MT				too little	443381	4817402	recharge pool
08/20/04	1616	MT				too little	443390	4817407	recharge pool
08/20/04	1617	MT				too little	443398	4817410	recharge pool
08/20/04	1619	MT				too little	443414	4817414	recharge pool
08/20/04	1620	MT				too little	443461	4817432	scour pool
08/20/04	1621	MT				too little	443462	4817429	scour pool
08/20/04	1622	MT				too little	443463	4817426	scour pool
08/20/04	1623	MT				too little	443462	4817432	scour pool
08/20/04	1624	MT				too little	443466	4817427	scour pool
08/20/04	1625	MT				too little	443469	4817428	scour pool
08/20/04	1626	MT				too little	443470	4817432	scour pool
08/20/04	1627	MT				too little	443470	4817432	scour pool
08/20/04	1628	MT				too little	443461	4817428	scour pool
08/20/04	1629	MT				too little	443487	4817438	scour pool
08/20/04	1630	MT				too little	443462	4817437	scour pool
08/20/04	1631	MT				too little	443500	4817439	breeding oxbow
08/20/04	1632	MT				too little	443500	4817439	breeding oxbow
08/20/04	1633	MT				too little	443500	4817439	breeding oxbow
08/20/04	1634	MT				too little	443500	4817439	breeding oxbow
08/20/04	1635	MT				too little	443490	4817440	breeding oxbow
08/20/04	1636	MT				too little	443487	4817432	breeding oxbow
08/20/04	1637	MT				too little	443487	4817432	breeding oxbow
08/20/04	1638	MT				too little	443496	4817434	stream
08/20/04	1639	MT				too little	443497	4817443	stream
08/20/04	1640	MT				too little	443500	4817439	breeding oxbow
08/20/04	1641	MT				too little	443510	4817467	stream
08/20/04	1642	MT				too little	443514	4817474	stream
08/20/04	1643	MT				too little	443516	4817475	stream

08/20/04	1644	MT				too little	443526	4817486	stream
08/20/04	1645	MT				too little	443533	4817493	stream
08/20/04	1646	MT				too little	443529	4817487	stream
08/20/04	1647	MT				too little	443529	4817487	stream
08/20/04	1648					END TRANSECT	443537	4817494	END POINT (TIME LIMITED) fence line
08/20/04	1649	MT				too little	443503	4817481	oxbow
08/20/04	1650	MT				too little	443503	4817481	oxbow
08/20/04	1709	F	34.5	71	yes	435777396C	442676	4817611	oxbow below campsite; gravid
						2005 SURVEY			
06/04/05	1336								began survey
06/04/05	1339	F	27.0	70	no	435B582858	443725	4817632	sidebow pool at endpoint
06/04/05	1340	SA	12.0	53	no	43583A3141	443725	4817632	sidebow pool at endpoint
06/04/05	1408	SA	6.5	42	no	4358474B62	443506	4817473	oxbow pool
06/04/05	1409	SA	7.0	44	no	43504F125D	443506	4817473	
06/04/05	1410	SA	8.0	46	no	435A074332	443506	4817473	
06/04/05	1412	SA	8.5	47	no	435A316B67	443506	4817473	
06/04/05	1415	SA				uncaptured	443506	4817473	
06/04/05	1427	SA	7.0	46	no	4357447775	443487	4817431	breeding site side channel
06/04/05	1428	SA	9.5	48	no	4359431B0D	443493	4817435	breeding site side channel
06/04/05	1429	SA	6.0	41	no	435848755F	443493	4817435	breeding site side channel
06/04/05	1439	SA	10.0	49	no	433C7B3255	443497	4817422	breeding site side channel
06/04/05	1500	F	25.0	66	no	4358363A4B	443310	4817429	swollen digit
06/04/05	1515	SA				uncaptured	443310	4817429	
06/04/05	1516	F	22.0	67	no	4358091D16	443307	4817438	
06/04/05	1520	F	27.5	67	yes	435243287E	443318	4817419	main stem pool
06/04/05	1521	SA	8.5	48	no	433D072E52	443318	4817419	main stem pool
06/04/05	1529	F	16.5	54	no	434E296A05	443318	4817429	main stem pool
06/04/05	1543	F	27.5	69	yes	434F600B1A	443306	4817424	recapture? Check PIT tags from Wendy?
06/04/05	1555	SA	9.5	50	no	435A4B413C	443273	4817448	channel bank
06/04/05	1600	SA	7.5	44	no	43583D555E	443258	4817448	channel bank
06/04/05	1607	SA	7.5	44	no	434F5C7829	443224	4817467	channel bank
06/04/05	1608	F	33.0	74	no	4357526964	443224	4817467	channel bank
06/04/05	1621	SA	9.5	48	no	433D024C04	443115	4817448	side slough
06/04/05	1622	SA	6.5	43	no	4658516238	443115	4817448	side slough
06/04/05	1623	SA	9.0	46	no	4658470E19	443115	4817448	side slough
06/04/05	1630					uncaptured	443115	4817448	side slough
06/04/05	1640	M	19.5	57	no	4658216A64	443096	4817482	

06/04/05	1641	SAM	8.5	47	no	4658377641	443096	4817482	
06/04/05	1642	SA	8.0	45	no	463717682F	443096	4817482	
06/04/05	1645	SA	6.5	44	no	4658432C22	443096	4817482	
06/04/05	1646	SAM	10.5	49	no	4659484D3B	443096	4817482	
06/04/05	1700	SA	9.0	46	no	46365D1F13	443096	4817487	
06/04/05	1701	F	19.0	62	no	46594E4D50	443084	4817488	
06/04/05	1725	SA	6.5	42	no	4658495B1B	442878	4817602	off-stream pool
06/04/05	1726	SA	6.0	40	no	4658456C30	442878	4817602	off-stream pool
06/04/05	1730	SA	5.0	39	no	4620611F3E	442878	4817602	off-stream pool
06/04/05	1733	SA	7.5	45	no	46584E1B1D	442878	4817602	off-stream pool
06/04/05	1740	SA	6.0	39	no	46583B7323	442854	4817600	side channel
06/04/05	1741	SA	7.0	42	no	4658404360	442854	4817600	side channel
06/04/05	1746	SA	7.0	41	no	462E4F5B57	442848	4817608	side channel
06/04/05	1747	F	29.0	72	yes	43577A5D43	442842	4817607	side channel
06/04/05	1755	SA	6.0	40	no	465850322B	442842	4817607	side channel
06/04/05	1756	SA	7.0	43	no	4658494A46	442843	4817604	side channel
06/04/05	1757	SA				uncaptured	442843	4817604	side channel
06/04/05	1758	SA				uncaptured	442843	4817604	side channel
06/04/05	1805	SAM	10.5	47	no	4658640853	442840	4817600	side channel
06/04/05	1807	SA	6.5	41	no	4658367776	442840	4817600	side channel
06/04/05	1812	SA				uncaptured	442838	4817612	side channel
06/04/05	1815	SA	8.0	43	no	46592F104A	442818	4817598	main channel
06/04/05	1820	SA	10.5	48	no	46583C0661	442751	4817602	main channel
06/04/05	1825	SA	10.5	46	no	462E621213	442736	4817593	main channel
06/04/05	1827	SA	8.5	44	no	465852270B	442731	4817596	main channel
06/04/05	1832	SA	9.0	45	no	46585B3D44	442724	4817600	in channel normally dry
06/04/05	1834	SA	7.5	44	no	46582A0F03	442711	4817593	in channel normally dry
06/04/05	1837	SAF	11.0	50	no	4658451A1A	442708	4817585	main channel
06/04/05	1838					uncaptured	442708	4817585	main channel
06/04/05	1850	SA	9.5	46	no	4658417A6C	442686	4817607	oxbow pool below camp
06/04/05	1851	M	16.0	56	yes	435A4C6906	442686	4817607	oxbow pool below camp
06/04/05	1852	F	31.0	70	yes	435B2B0157	442686	4817607	oxbow pool below camp
06/04/05	1854	SA	7.0	44	no	465941515A	442686	4817607	oxbow pool below camp
06/04/05	1855	SA	8.5	46	no	4658376D6E	442678	4817611	oxbow pool below camp
06/04/05	1856	SAF	12.0	50	no	465830125E	442678	4817611	oxbow pool below camp
06/04/05	1857	SA	6.0	40	no	4659360B4A	442678	4817611	oxbow pool below camp
06/04/05	1858	SA	6.5	41	no	4658236914	442678	4817611	oxbow pool below camp

06/04/05	1859	SA	7.5	46	no	4658463F53	442678	4817611	oxbow pool below camp
06/04/05	1900	SA	9.0	47	no	465927247A	442686	4817607	oxbow pool below camp
06/04/05	1901	SA	10.0	48	no	4658571A11	442686	4817607	oxbow pool below camp
06/04/05	1902	SA	7.5	43	no	463770097F	442686	4817607	oxbow pool below camp
06/04/05	1903	SA	6.0	41	no	4658526D00	442686	4817607	oxbow pool below camp
06/04/05	1904	F	34.5	71	yes	435777396C	442686	4817607	oxbow pool below camp
06/04/05						large tadpoles	443310	4817429	
06/04/05						tadpoles	443096	4817482	
06/04/05						tiny tadpole	443487	4817431	breeding site side channel
06/05/05	1335	SAM	12.5	53	no	4658203D7A	443656	4817549	main channel bank
06/05/05	1338	SAF	9.5	46	no	46584A0F75	443620	4817532	grassy side channel;injured right thumb (photo)
06/05/05	1346	SA				uncaptured	443560	4817501	channel
06/05/05	1352	SA	9.5	45	no	46584C0261	443545	4817495	grassy side pool
06/05/05	1353	SA	10.0	49	no	46214C7110	443545	4817495	grassy side pool
06/05/05	1405	SA	8.5	47	yes	435A316B67	443502	4817470	side pool
06/05/05	1406	SA	8.0	46	yes	435A074332	443502	4817470	side pool
06/05/05	1407	SA	9.0	45	no	4658387164	443502	4817470	side pool
06/05/05	1408	SA	8.0	45	no	465853125B	443502	4817470	side pool
06/05/05	1409	SA	6.5	42	yes	4358474B62	443502	4817470	side pool
06/05/05	1434	SA	9.5	48	yes	4359431B0D	443486	4817430	oxbow breeding site; connected during this survey
06/05/05	1435	SA	5.5	42	no	4658532854	443486	4817430	oxbow breeding site; connected during this survey
06/05/05	1436	SA	7.0	46	yes	4357447775	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1437	SA	7.5	42	no	4658774D0C	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1438	SA	10.0	49	yes	433C7B3255	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1439	SA	5.5	41	no	46584F7101	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1440	SA	6.5	42	no	46594F6A4A	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1441	SA	11.0	49	no	4659443F50	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1442	SA	6.0	42	no	46581D361F	443487	4817428	oxbow breeding site; connected during this survey
06/05/05	1443	M	16.5	57	no	4637051371	443487	4817428	oxbow breeding site; connected during this survey

06/05/05	1515	M	15.0	57	no	462E7C5319	443449	4817428	main channel
06/05/05	1526	F	29.5	72	yes	43504D4627	443448	4817431	main channel
06/05/05	1536	SA	9.0	46	no	4658737B53	443364	4817408	braided channel
06/05/05	1541	SA	6.5	43	no	4621545332	443326	4817422	main channel; wide spot breeding site along edge
06/05/05	1547	F				uncaptured	443304	4817428	main channel; wide spot breeding site along edge
06/05/05	1559	SA	8.5	47	no	465939627D	443285	4817432	main channel; wide spot breeding site along edge
06/05/05	1600	SA	11.0	47	no	46590E0871	443285	4817432	main channel; wide spot breeding site along edge
06/05/05	1601	F	15.5	54	no	462E57466D	443285	4817432	main channel; wide spot breeding site along edge
06/05/05	1609					uncaptured	443285	4817432	main channel; wide spot breeding site along edge
06/05/05	1614	SA	11.0	49	no	462F0A2526	443275	4817432	back channel
06/05/05	1618	SA	7.5	44	no	4659441A6A	443271	4817431	back channel
06/05/05	1620	SA	5.0	41	no	46317E0D72	443275	4817438	back channel
06/05/05	1622	M	12.0	54	yes	43595D7C2A	443275	4817438	back channel
06/05/05	1629	SA	6.5	42	no	4658464228	443207	4817439	back channel
06/05/05	1632	SA	6.5	40	no	464D221C23	443264	4817444	back channel missing pinky finger right hand
06/05/05	1633	SA	9.0	46	no	465835365F	443264	4817444	back channel
06/05/05	1634	SA	9.0	46	no	46581B381C	443264	4817444	back channel
06/05/05	1635	SA	7.5	45	no	4658573143	443264	4817444	back channel
06/05/05	1645	M	11.0	52	no	4658315629	443286	4817444	main channel
06/05/05	1646	SA	6.5	43	no	4658360F34	443254	4817455	side back channel
06/05/05	1655	SA	8.5	45	no	46593E6321	443255	4817457	main channel
06/05/05	1702	SA	8.0	45	no	4658366126	443257	4817459	main channel
06/05/05	1705	SA	7.5	43	no	462E30242A	443244	4817461	main channel
06/05/05	1714	SA				uncaptured	443212	4817463	main channel
06/05/05	1730	SAM	8.5	47	yes	4658377641	443091	4817482	small side channel
06/05/05	1731	SAM	10.5	49	yes	4659484D3B	443091	4817482	small side channel
06/05/05	1732	SA	7.0	45	no	4659433A16	443091	4817482	small side channel
06/05/05	1743	SA				uncaptured	443077	4817487	main/side pool
06/05/05	1745	SA				uncaptured	443077	4817487	main/side pool
06/05/05	1748	SA	8.0	45	no	4658264149	443026	4817471	main/side pool at merganser rock
06/05/05	1806	SAF	12.5	51	no	4658294276	442985	4817505	main channel
06/05/05	1813	SA	3.0	37	no	too little	442920	4817610	main channel; bones exposed left hand missing

									thumb and finger, right missing all (photo)
06/05/05	1822	SA	6.0	39	yes	46583B7323	442858	4817611	side,back channel/rock pool
06/05/05	1826	SA	6.0	40	yes	465850322B	442848	4817615	side,back channel/rock pool
06/05/05	1828	SA	8.5	47	no	4659001A07	442849	4817611	side,back channel/rock pool
06/05/05	1829	SA	7.0	43	yes	4658494A46	442849	4817611	side,back channel/rock pool
06/05/05	1836	SA	8.0	43	yes	46592F104A	442820	4817599	main channel
06/05/05	1837	SA	6.5	40	no	465827324E	442820	4817599	main channel
06/05/05	1845	SA	7.0	42	no	46583A617D	442773	4817595	main channel
06/05/05	1846	SA	10.5	46	yes	462E621213	442734	4817597	main channel
06/05/05	1900	F	31.0	70	yes	435B2B0157	442684	4817606	oxbow pool below camp
06/05/05	1901	SA	6.0	41	yes	4658526D00	442684	4817606	oxbow pool below camp
06/05/05	1902	SA	9.5	46	yes	4658417A6C	442682	4817609	oxbow pool below camp
06/05/05	1903	SA	7.5	46	yes	4658463F53	442682	4817609	oxbow pool below camp
06/05/05	1904					uncaptured	442682	4817609	oxbow pool below camp
06/05/05	1905	SAF	12.0	50	yes	465830125E	442680	4817613	oxbow pool below camp
06/05/05	1906	SA	9.0	47	yes	465927247A	442680	4817613	oxbow pool below camp
06/05/05	1907					uncaptured	442680	4817613	oxbow pool below camp
06/05/05	1908	M	16.0	56	yes	435A4C6906	442684	4817606	oxbow pool below camp
06/06/05	1020	SA	8.5	45	no	46593D1162	442672	4817601	main channel
06/06/05	1022	SAM	8.5	46	no	4659422620	442669	4817603	main channel
06/06/05	1030	F	13.0	51	no	4658535301	442654	4817603	main channel
06/06/05	1032	SA	9.0	46	no	465840723E	442630	4817614	side pool/oxbow breeding site (second oxbow below camp)
06/06/05	1033	SA	6.5	42	no	46581E7D44	442630	4817614	side pool/oxbow breeding site (second oxbow below camp)
06/06/05	1034	SA	9.5	47	no	4637101854	442630	4817614	side pool/oxbow breeding site (second oxbow below camp)
06/06/05	1100	F	23.5	65	no	465907312A	442602	4817587	main channel
06/06/05	1105	SA	10.5	48	no	4658224903			second pinch point bar pool; no GPS
06/06/05	1106	SA	5.5	39	no	46590B3B03			second pinch point bar pool; no GPS
06/06/05	1134	SA	11.0	49	no	4658373135	442575	4817479	main channel
06/06/05	1141	SA	9.0	45	no	46384C783D	442501	4817427	oxbow pool
06/06/05	1142	SA	8.5	47	no	4659302B22	442501	4817427	oxbow pool
06/06/05	1143	SA				uncaptured	442501	4817427	oxbow pool
06/06/05	1144	SA	11.0	50	no	4658221C3D	442498	4817430	oxbow pool
06/06/05	1158	SAF	13.0	50	no	4658346141	442419	4817388	main Channel
06/06/05	1203	SA	10.5	49	no	462E40094C	442454	4817367	isolated side channel pool (opposite valley from main channel. Appears to be connected at

									higher flow.
06/06/05	1204	SA	10.5	49	no	46591B1427	442454	4817367	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1205	SAF	11.5	52	no	465828456F	442454	4817367	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1206	SA	8.5	45	no	465912115D	442454	4817367	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1207	SA	10.0	49	no	46591F216F	442454	4817367	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1210	SA	11.5	50	no	46583C535F	442452	4817363	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1211	SA	10.5	48	no	4659265B21	442452	4817363	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1212	SAF	14.5	52	no	46370E7A4A	442452	4817363	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1215	SA	10.5	48	no	4658476F40	442443	4817362	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1216	SA	9.0	45	no	46584A5D46	442443	4817362	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1220	SA				uncaptured	442441	4817357	isolated side channel pool (opposite valley from main channel. Appears to be connected at higher flow.
06/06/05	1248	M	12.5	54	no	4658264B3B	442410	4817315	pool below natural exclosure; red swollen spot on throat (photo)
06/06/05	1305	SA				uncaptured	442376	4817299	natural exclosure cattails
06/06/05	1500	SA	10.5	47	no	4658321700	440993	4816991	spring pool outflow channel
06/06/05	1501				no	tadpoles	440977	4816993	spring pool
06/06/05	1505	SAF	12.0	52	no	4658525844	440977	4816993	spring pool
06/06/05	1506	SAM	10.0	48	no	46584F6F17	440977	4816993	spring pool
06/06/05	1507	SA	6.0	42	no	4632506455	440977	4816993	spring pool
06/06/05	1508	SA	10.0	48	no	46594C4B19	440977	4816993	spring pool

06/06/05	1509	SA	10.0	49	no	46375C6436	440977	4816993	spring pool
06/06/05	1530	SA	11.0	50	no	4659284A40	440922	4816974	main channel
06/06/05	1537	SA	8.0	44	no	4658272127	440879	4816985	main channel
06/06/05	1545	SAF	13.0	52	no	4659407C32	440827	4817005	main channel
06/06/05						END TRANSECT			
06/06/05						START BLM TRANSECT			
06/07/05	1237	SAM	10.0	48	yes	46584F6F17	440975	4816995	spring outflow oxbow
06/07/05	1238	SA	6.0	42	yes	4632506455	440975	4816995	spring outflow oxbow
06/07/05	1240	SA	10.0	49	yes	46375C6436	440975	4816995	spring outflow oxbow
06/07/05	1250	SAF	12.0	52	yes	4658525844	440975	4816995	spring outflow oxbow
06/07/05	1300	SA	8.0	46	no	4658306828	440919	4816973	main channel flooded willow clump
06/07/05	1301	SA	9.0	49	no	46582A3116	440919	4816973	main channel flooded willow clump
06/07/05	1302	SA	10.0	48	no	464A144861	440919	4816973	main channel flooded willow clump
06/07/05	1313	SA	12.0	51	no	465841376A	440847	4816998	main channel (photo) small sore on dorsal
06/07/05	1346	SA	9.0	47	no	4637126152	440975	4816995	spring outflow oxbow
06/07/05	1503	F	24.0	67	yes	433D052673	442254	4817154	back channel
06/07/05	1504	F	35.0	75	no	4659370702	442258	4817157	back channel
06/07/05	1516	SA	8.0	47	no	4621071416	442264	4817185	main channel; photo, legs appeared red
06/07/05	1526	SA	8.0	43	no	4659447B33	442270	4817226	side channel
06/07/05	1640	SAF	11.0	51	no	465826437D	442381	4817299	natural exclosure cattails
06/07/05	1641	SAF	15.0	54	no	465931555A	442381	4817299	natural exclosure cattails
06/07/05	1655	SA	12.0	49	no	4658361847	442375	4817288	natural exclosure cattails
06/07/05	1710	SA	9.5	47	no	4659355E07	442436	4817413	main channel
06/07/05	1715	SA	7.0	44	no	4659367A6D	442446	4817421	main channel
06/07/05	1725	SA	11.0	48	no	46593F4867	442499	4817431	oxbow
06/07/05	1726	SA	10.0	47	no	4658397A21	442499	4817431	oxbow
06/07/05	1727	SAM	10.0	47	no	46584A6270	442499	4817431	oxbow
06/07/05	1728	F				uncaptured	442499	4817431	oxbow
06/07/05	1730	SA	9.0	45	yes	46384C783D	442498	4817438	oxbow
06/07/05	1735	SA	11.0	50	yes	4658221C3D	442498	4817438	oxbow
06/07/05	1750	SA				uncaptured	442499	4817431	oxbow
06/07/05	1800	SA	10.5	49	yes	46591B1427	442454	4817369	oxbow on far side of floodplain
06/07/05	1801	SA	10.0	49	yes	46591F216F	442454	4817369	oxbow on far side of floodplain
06/07/05	1802	SA	8.5	45	yes	465912115D	442454	4817369	oxbow on far side of floodplain
06/07/05	1803	SA	10.5	49	yes	462E40094C	442454	4817369	oxbow on far side of floodplain
06/07/05	1804	SA	11.5	50	yes	46583C535F	442454	4817369	oxbow on far side of floodplain

06/07/05	1805	SA	10.5	48	yes	4659265B21	442454	4817369	oxbow on far side of floodplain
06/07/05	1807	SA	9.0	45	yes	46584A5D46	442441	4817358	oxbow on far side of floodplain
06/07/05	1808	SA	10.0	48	no	46584F051F	442441	4817358	oxbow on far side of floodplain
06/07/05	1809	SA	11.0	51	no	4658294D3D	442441	4817358	oxbow on far side of floodplain
06/07/05	1820	SA	8.5	47	yes	4659302B22	442499	4817431	oxbow
06/07/05	1838	SA	7.0	42	no	46581B3D25	442571	4817478	main channel
06/07/05	1852	SA	8.0	45	no	46587F4024	442627	4817593	main channel
08/11/05	900					START BLM TRANSECT			
08/11/05	922	M	13.0	53	no	4659021131	441093	4816925	spring pool off main channel
08/11/05	1000					Start State Transect			
08/11/05	1008	mt		31	no		442135	4816988	main stream
08/11/05	1009	mt		30	no		442137	4816990	main stream
08/11/05	1010	mt		32	no		442137	4816992	main stream
08/11/05	1011	mt		30	no		442139	4816992	main stream
08/11/05	1012	mt		35	no		442139	4816993	main stream
08/11/05	1015	mt			no		442159	4817006	main stream
08/11/05	1016	mt		29	no		442165	4817012	main stream
08/11/05	1018	mt		33	no		442186	4817027	main stream
08/11/05	1019	mt		29	no		442183	4817026	main stream
08/11/05	1020	mt			no		442183	4817026	main stream
08/11/05	1028	mt		34	no		442268	4817203	main stream
08/11/05	1052	mt			no		442376	4817299	natural exclosure cattails
08/11/05	1055						442334	4817274	adult in vegetation in deep water
08/11/05	1118	F		62	yes	4659355E07	442429	4817403	main stream
08/11/05	1119	F	23.5	64	yes	46583C535F	442451	4817364	isolated oxbow pool
08/11/05	1120	F	22.0	63	no	4658253407	442446	4817372	isolated oxbow pool
08/11/05	1121	F	16.0	56	no	4658464170	442458	4817362	isolated oxbow pool
08/11/05	1122	F	24.0	67	yes	4658294D3D	442462	4817356	isolated oxbow pool
08/11/05	1150	M	16.5	56	yes	4658221C3D	442500	4817426	oxbow near stream
08/11/05	1151	M	14.0	53	yes	4659302B22	442500	4817428	oxbow near stream
08/11/05	1152	mt			no		442500	4817428	oxbow near stream
08/11/05	1153	mt			no		442500	4817428	oxbow near stream
08/11/05	1154	mt			no		442500	4817428	oxbow near stream
08/11/05	1155	mt			no		442500	4817428	oxbow near stream
08/11/05	1205	mt		33	no		442568	4817467	main stream
08/11/05	1259	F	34.0	73	yes	435B2B0157	442681	4817603	oxbow below campsite; gravid

08/11/05	1303	M	14.0	52	no	46594C3E24	442682	4817607	oxbow below campsite
08/11/05	1305	M	14.5	54	yes	4658571A11	442680	4817607	oxbow below campsite
08/11/05	1309	F	22.5	62	no	4658300971	442680	4817610	oxbow below campsite; gravid
08/11/05	1311	M	12.5	50	yes	4659360B4A	442680	4817610	oxbow below campsite
08/11/05	1312	mt		33	no		442651	4817602	side pool off cahnnel
08/11/05	1314	mt		32	no		442651	4817602	side pool off cahnnel
08/11/05	1318	mt			no		442677	4817595	main stream
08/11/05	1319	mt			no		442674	4817594	main stream
08/11/05	1320	mt			no		442673	4817597	main stream
08/11/05	1321	mt			no		442684	4817594	main stream
08/11/05	1322	F	22.0	63	yes	465830125E	442692	4817593	main stream
08/11/05	1325	mt			no		442697	4817597	main stream
08/11/05	1326	mt			no		442706	4817588	main stream
08/11/05	1327	mt			no		442710	4817588	main stream
08/11/05	1328	mt			no		442713	4817587	main stream
08/11/05	1330	mt			no		442726	4817590	main stream
08/11/05	1332	mt			no		442765	4817594	main stream
08/11/05	1333	mt			no		442775	4817594	main stream
08/11/05	1335	mt			no		442813	4817595	main stream
08/11/05	1337	mt			no	uncaptured	442839	4817608	recharge pool
08/11/05	1338	mt			no	uncaptured	442839	4817608	recharge pool
08/11/05	1339	mt			no		442839	4817608	recharge pool
08/11/05	1340	mt			no		442843	4817609	recharge pool
08/11/05	1341	mt			no		442852	4817607	side channel
08/11/05	1342	mt			no		442872	4817601	main channel
08/11/05	1343	mt			no		442876	4817604	main channel
08/11/05	1344	mt			no		442876	4817606	main channel
08/11/05	1345	mt			no		442879	4817607	main channel
08/11/05	1346	mt			no		442886	4817608	main channel
08/11/05	1347	mt			no		442900	4817604	main channel
08/11/05	1348	mt			no		442901	4817609	main channel
08/11/05	1349	mt			no		442906	4817610	main channel
08/11/05	1350	mt			no		442906	4817610	main channel
08/11/05	1351	mt			no		442907	4817605	main channel
08/11/05	1352	mt			no		442915	4817614	main channel
08/11/05	1353	mt			no		442911	4817609	main channel
08/11/05	1354	mt			no		442916	4817609	main channel

08/11/05	1358	mt			no		442919	4817589	main channel
08/11/05	1359	mt			no		442963	4817519	main channel
08/11/05	1402	mt			no		443032	4817488	main channel
08/11/05	1403	mt			no		443076	4817485	main channel
08/11/05	1404	mt			no		443076	4817485	main channel
08/11/05	1405	mt			no		443076	4817484	main channel
08/11/05	1406	mt			no		443091	4817482	main channel
08/11/05	1407	mt			no		443091	4817477	main channel
08/11/05	1408	mt			no		443093	4817474	main channel
08/11/05	1409	mt			no		443093	4817474	main channel
08/11/05	1410	mt			no		443095	4817474	main channel
08/11/05	1411	mt			no		443105	4817458	side bow
08/11/05	1412	mt			no		443108	4817475	main channel
08/11/05	1413	mt			no		443116	4817471	main channel
08/11/05	1414	mt			no		443116	4817471	main channel
08/11/05	1415	mt			no		443121	4817469	main channel
08/11/05	1416	mt			no		443118	4817467	main channel
08/11/05	1417	mt			no		443125	4817465	main channel
08/11/05	1418	mt			no		443125	4817465	main channel
08/11/05	1419	mt			no		443130	4817464	main channel
08/11/05	1420	mt			no		443138	4817460	main channel
08/11/05	1421	mt			no		443146	4817466	main channel
08/11/05	1422	mt			no		443158	4817464	main channel
08/11/05	1423	mt			no		443226	4817457	main channel
08/11/05	1424	mt			no		443246	4817443	main channel
08/11/05	1425	mt			no		443259	4817435	side bow off channel
08/11/05	1426	mt			no		443259	4817435	side bow off channel
08/11/05	1427	mt			no		443265	4817439	side bow off channel
08/11/05	1428	mt			no		443262	4817441	side bow off channel
08/11/05	1429	mt			no		443270	4817439	side bow off channel
08/11/05	1430	mt			no		443273	4817434	side bow off channel
08/11/05	1431	F	18.0	60	yes	43583D555E	443287	4817445	main channel (PDOP high)
08/11/05	1432	mt			no		443283	4817429	main channel (PDOP high)
08/11/05	1433	mt			no		443283	4817429	main channel (PDOP high)
08/11/05	1434	mt			no		443280	4817445	main channel (PDOP high)
08/11/05	1435	mt			no		443287	4817443	main channel (PDOP high)
08/11/05	1444	mt			no		443290	4817443	main channel (PDOP high)

08/11/05	1445	mt			no		443340	4817419	main channel (PDOP high)
08/11/05	1446	mt			no		443340	4817419	main channel (PDOP high)
08/11/05	1447	mt			no		443340	4817419	main channel (PDOP high)
08/11/05	1450	mt			no		443402	4817412	main channel (PDOP high)
08/11/05	1454	mt			no		443500	4817449	~10 yds. upstream of oxbow breeding site, main channel
08/11/05	1455	mt			no		443448	4817428	across from oxbow breeding site, main channel
08/11/05	1458	mt			no		443484	4817438	oxbow breeding site
08/11/05	1459	mt			no		443486	4817428	oxbow breeding site
08/11/05	1502	mt			no		443500	4817449	main channel (10 yds upstream from next point)
08/11/05	1504	mt			no		443508	4817467	main channel (PDOP high)
08/11/05	1505	mt			no		443508	4817467	main channel (PDOP high)
08/11/05	1515	mt			no		443523	4817486	main channel (PDOP high)
08/11/05	1516	mt			no		443539	4817500	main channel (PDOP high)
08/11/05	1517	mt			no		443539	4817500	main channel (PDOP high)
08/11/05	1523	mt			no		443719	4817616	sidebow pool at endpoint