

**Columbia Spotted Frog**  
*(Rana luteiventris)*  
**2003 Monitoring Report**

**Dry Creek, Oregon**



**Prepared for the Vale District  
Bureau of Land Management**

by  
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## Introduction

This report summarizes the results of the third year of the Dry Creek Monitoring project for Columbia spotted frogs, with incidental observations of other herpetofauna. The protocol followed for this survey is described in the 2000 monitoring proposal.

The summer of 2003 was considered another drought year, with aquatic habitat already intermittent by June. Several stretches along the survey transect were dry earlier in the summer and for greater distances than that observed in previous years (Figure 1).

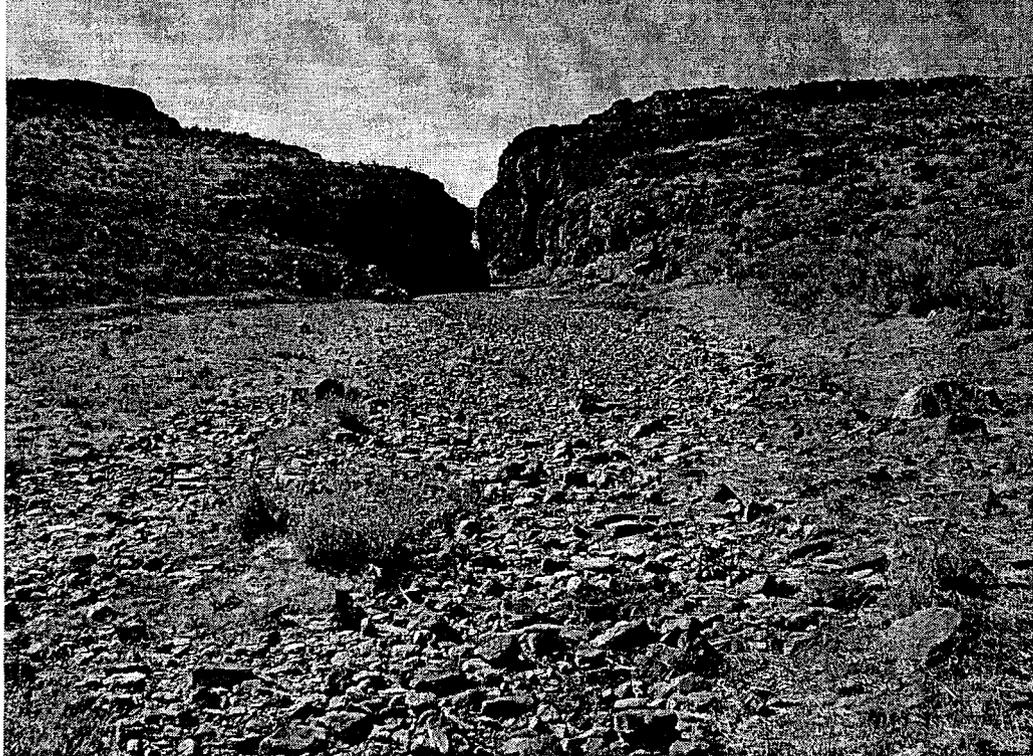


Figure 1. Dry Creek in August just west of the confluence with Butte Creek.

Dry Creek was visited twice during 2003, from June 6 to June 8 to conduct the mark-recapture survey and measure habitat parameters; and then on August 9 to determine annual recruitment success and to measure habitat parameters again.

## Monitoring Results

*(for description of habitat measures, see Appendix I.)*

Date	Time	Water temp	DO	Con	pH	SSAR	SVSR	VUBA	L-P Pop. Estimate	Recruitment
6 Jun 01	1310	17.3C	14.65	191.5	9.2	1-25%	4	0-25%	74	-
4 Aug 01	1335	22.3	16.46	246.4	9.3	26-50%	2	76-100%	NA	yes
6 Jun 02	1315	22.5	*	*	*	26-50%	3	51-75%	**	-
11 Aug 02	1300	21.8	***	340	8.9	51-75%	2	76-100%	NA	yes
6 Jun 03	1200	20.9	12.6	270	9.1	51-75%	4	0-25%	62	-
9 Aug 03	1355	24.9	16.3	310	8.9	51-75%	3	26-50	NA	yes

\*equipment failure

\*\*unable to calculate L-P due to PIT-tag reader failure

\*\*\*not recorded

We began our survey of the Dry Creek transect on 6 June 2003 at 0915 at the west end of the State section. Proceeding east from the start point, we surveyed to the area below the campsite in three hours. As last year, the “natural enclosure” did not appear to have any livestock grazing, but there was evidence of deer (scat, trails, and beds). The willows and shrubs had become much thicker, (willows approximately 5’ high) and we did encounter



Figure 2. Muskrat run leading under a rocky bank.

ticks in the enclosure this year. One subadult was observed in this section, but the vegetation was so thick that detection was extremely difficult for a visual encounter survey. Immediately below the natural enclosure, we observed evidence of muskrat channels into the banks (Figure 2). These muskrat holes could serve as refugia for frogs, offering

underground protection similar to that provided by natural spring seeps.

As in previous years, small stream fish were noted with a fungus. Large crayfish were not as common in 2003, and large snails (over 1” shell size) and scuds were greatly reduced in numbers. The standard photo was taken at 1200 from the creek below the campsite (Figure 3) We completed the entire first pass of the State transect in one day, at 1600 hrs. The weather was warm and clear, perfect for frog surveys.

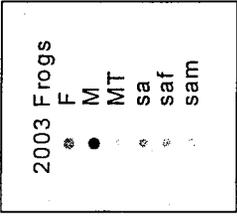
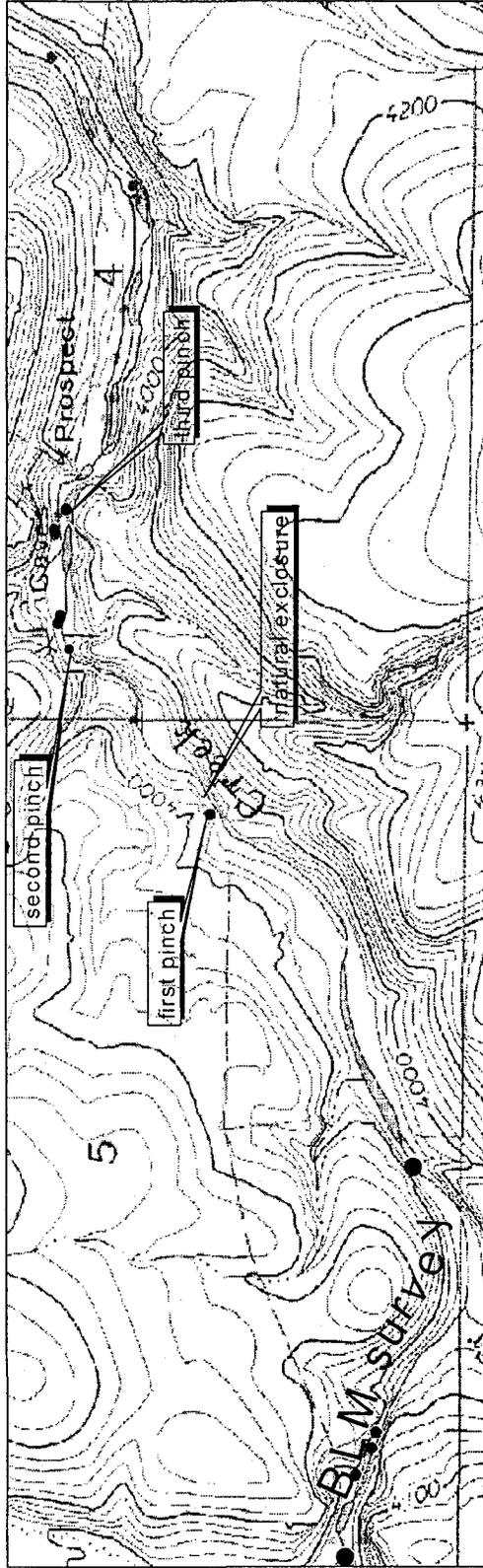


Figure 3. Standard photo point on June 6, 2003.

The second day, June 7, was also warm and clear. We began the second pass of the State transect at 0902 and worked upstream from the eastern endpoint, opposite from the previous afternoon's direction. Instead of continuing to survey upstream, we stopped at the mid-point of the State transect and hiked to the west end of the BLM transect. We then completed the first pass of the BLM transect in the afternoon. The second pass of both the BLM transect and the western half of the State transect were completed on the third day, June 8, by surveying upstream from below the campsite to the western end of the BLM transect. By varying the times at which we arrived at different locations, we may have increased the number of different frogs observed.

During the June 2003 survey, three adult females were recaptured from the 2002 survey. The largest female was 75 mm SVL, and estimated at three, possibly four, years old. A total of fourteen adults were captured: eleven females and three males. Fifty-two subadults were captured, none of which had observable toe-clips from 2002. Figure 4 shows the capture locations for the June and August surveys.

The Lincoln-Peterson population estimate (for the State section only) was 62 frogs. Thirty-one frogs were captured on the first pass, thirty-eight were captured on the second



# Dry Creek Spotted Frog Survey 2003

Figure 4. 2003 capture locations.

pass, and nineteen were captured both times (31x38/19=62). The gender and age distribution for the State section is listed in Table 1.

Table 1. Gender and age distribution of captured frogs in June 2001, 2002, and 2003 (State section only).

Year	Females	Males	Subadults	uncaptured
2001	9	2	39	5
2002	9	2	20	8
2003	9	2	41	9

Although Dry Creek appeared lower than previous years, the water was clearer and habitat ratings were somewhat improved. All suitable sites along the transect were surveyed for tadpoles, but few were observed in 2003.

Forty-two garter snakes were observed during the June 2003 survey (15 were observed in 2002, and 59 in 2001). Herpetofauna observed in the June 2003 survey included:

40	<i>Thamnophis elegans</i>	western terrestrial garter snake
2	<i>Thamnophis sirtalis</i>	common garter snake
4	<i>Pituophis catenifer</i>	gopher snake
2	<i>Coluber constrictor</i>	racer
1	<i>Crotalus viridis</i>	western rattlesnake
0	<i>Gambelia wislizenii</i>	longnose leopard lizard
1	<i>Sceloporus occidentalis</i>	western fence lizard
2	<i>Hyla regilla</i>	Pacific treefrog

The golden eagles nest did not appear active in June, but one bird was observed soaring in the vicinity in August. Chukar and California quail had very successful nesting seasons, and many broods were observed in both June and August. Two successful great horned owl nests with three young were observed in canyon crevasses. Additionally, the following were observed: killdeer, pigeon, merganser (hen and 10 young), cliff swallows, kingfisher, muskrat (runs), voles, trout, suckers, dace.

On August 9 (Figure 5), we collected water chemistry data and habitat ratings, and surveyed for recruitment based on breeding success. Two individuals were recaptured from the June survey:

- 435236220E female; mass increase from 8g to 14.5g, and SVL from 43mm to 56mm. Distance between captures approximately 12 meters.
- 433D197477 male; mass increase from 11g to 14.5g, and SVL from 49mm to 56mm. Distance between captures approximately 200 meters.

Although relatively few tadpoles were observed in the June Monitoring survey, many metamorphs were observed in August (98 individuals - GPS points recorded, but



Figure 5. Standard photo point on August 9, 2003.

metamorphs were not toe-clipped), confirming that there was successful reproductive recruitment. Metamorphs were captured along the entire survey transect in August. Hibernation sites are still unknown, but are assumed to be associated with the deeper scour pools. It was also noted that several scour pools and side channels had considerably cooler water than the main stream channel. The temperatures were typically 5 degrees (C), the water was clear, and frogs were usually present. Whether or not these recharge areas serve as hibernacula is unknown, but it did appear that spotted frogs were using them for thermal refugia.

All 2001, 2002, and 2003 capture data are recorded in Appendix II.

**APPENDIX I**  
**Habitat/Land Use Ratings**

**Streambank soil alteration rating (SSAR)**

<b>Rating (%)</b>	<b>Description</b>
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.

**Streambank vegetative stability rating (SVSR)**

<b>Rating</b>	<b>Description</b>
4 (excellent)	Over 80% of the streambank surfaces are covered by vegetation in vigorous condition or by boulders and rubble. If the streambank is not covered by vegetation, it is protected by materials that do not allow bank erosion.
3 (good)	50-79% of the streambank surfaces are covered by vegetation or by gravel or larger material. Those areas not covered by vegetation are protected by materials that allow only minor erosion.
2 (fair)	25-49% of the streambank surfaces are covered by vegetation or by gravel or larger material. Those areas not covered by vegetation are covered by materials that give limited protection.
1 (poor)	Less than 25% of the streambank surfaces are covered by vegetation or by gravel or larger material. That area not covered by vegetation provides little or no control over erosion and the banks are usually eroded each year by high water flows.

## APPENDIX I (continued)

### Vegetation use by animals (VUBA)

<b>Rating (%)</b>	<b>Description</b>
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 II**  
2001-2003 survey data

date	hour	gender	mass	SVL	recapture?	PIT	UTME	UTMN	comments
6-Jun-01	1248					<i>Coluber constrictor</i>	442427	4817548	
6-Jun-01	1259					<i>Pituophis catenifer</i>	442201	4817175	
6-Jun-01						<b>photo point</b>	442164	4817129	at the edge of rock outcrop, facing east (downstream)
6-Jun-01	1310					<b>start &amp; water chemistry</b>	442073	4816978	large boulder in creek, near private boundary
6-Jun-01	1350	m	21.0	62	no	4239200D12	442241	4817159	oxbow
6-Jun-01	1417	sa	9.5	47	no	42393C281F	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1419	sa	11.6	52	no	422D3F633E	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1422	sa	13.7	53	no	42386663773	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1424	sa	10.1	49	no	42392F2C1A	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1426	sa	12.6	52	no	422D47213E	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1428	f	45.7	82	no	4238327125	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1500	sa	14.0	53	no	42384B6336	442373	4817305	in inaccessible (for livestock) cattail pool; sa's are probably females
6-Jun-01	1517	f	40.0	80	no	422D285922	442407	4817317	eddy
6-Jun-01	1536	f	16.6	58	no	42391D6023	442437	4817405	had swollen toe on right rear
6-Jun-01	1546	sa	9.7	49	no	41620A620B	442454	4817407	stream
6-Jun-01	1551	sa	13.1	51	no	423827112B	442457	4817427	stream
6-Jun-01	1601	sa	12.1	53	no	423831600B	442503	4817431	stream
6-Jun-01	1605	sa	10.7	50	no	4238737469	442502	4817435	stream
6-Jun-01	1852				no	<i>Sceloporus occidentalis</i>	442671	4817752	at campsite
7-Jun-01	1012	sa	10.0	49	no	4238262558	442487	4817555	oxbow; just north of the first pinched canyon
7-Jun-01	1028	sa	10.0	48	no	422D22746E	442681	4817607	sidebow
7-Jun-01	1035	f	25.4	66	no	42381F0D25	442681	4817600	oxbow
7-Jun-01	1036	m	19.5	60	no	4238596109	442681	4817600	oxbow
7-Jun-01	1037	sa	6.6	44	no	4238167710	442681	4817600	oxbow
7-Jun-01	1041	sa	9.0	47	no	41617D627D	442681	4817600	oxbow
7-Jun-01	1103	sa	14.7	56	no	42384B4216	442745	4817588	stream
7-Jun-01	1115	sa	13.7	53	no	42393F033E	442821	4817592	stream
7-Jun-01	1144	sa	11.3	49	no	4238517003	442843	4817601	sidebow
7-Jun-01	1145	sam	11.1	48	no	422D3B1E49	442843	4817601	sidebow
7-Jun-01	1159					uncaptured	442891	4817575	sidebow; PDOP 18

7-Jun-01	1210	saf	13.5	55	no	423832241B	442918	4817603	stream; PDOP 10
7-Jun-01	1347	saf	14.0	53	no	4239154360	443233	4817452	oxbow
7-Jun-01	1353	saf	10.1	49	no	42392B780B	443254	4817447	sidebow
7-Jun-01	1405					uncaptured	443259	4817439	sidebow
7-Jun-01	1410					breeding site; large tads	443259	4817439	sidebow; photo
7-Jun-01	1411	saf	15.0	54	no	416201747F	443270	4817429	sidebow
7-Jun-01	1435	sa				uncaptured	443486	4817432	sidebow
7-Jun-01	1439					<i>Pituophis catenifer</i>	443499	4817448	
7-Jun-01	1443	sa	9.0	47	no	4238436C2A	443516	4817474	stream
7-Jun-01	1531					breeding site?; tadpoles	443807	4817944	sidebow
7-Jun-01	1536	sa	9.6	50	no	423917671E	443806	4817960	sidebow
7-Jun-01	1546	sa	10.2	49	no	432B163D72	443805	4817970	sidebow
7-Jun-01	1550	sam	18.2	50	no	4238796209	443809	4817959	sidebow
7-Jun-01	1608	sa	9.1	46	no	42384A5F03	443903	4818064	stream
7-Jun-01	1612					endpoint	443909	4818069	large boulder in creek; photo
7-Jun-01	1520					<i>Coluber constrictor</i>	443909	4818119	75m north of endpoint
8-Jun-01	1045	m	22.0	63	R	4239200D12	442252	4817148	sidebow
8-Jun-01	1122	sa	10.0	48	R	42393C281F	442371	4817295	natural enclosure
8-Jun-01	1156	saf	10.5	50	no	422D340B26	442407	4817347	pool in stream
8-Jun-01	1205	saf	15.3	53	no	42386B5F00	442405	4817354	stream
8-Jun-01	1212	saf	17.0	58	R	42391D6023	442421	4817395	stream
8-Jun-01	1220	saf	17.5	58	no	42390D7E59	442429	4817411	stream
8-Jun-01	1237	sa	9.3	49	R	41620A620B	442447	4817424	stream
8-Jun-01	1300	sam	9.5	48	R	4238262558	442587	4817555	oxbow
8-Jun-01	1313	sa	9.4	47	R	422D22746E	442669	4817601	oxbow
8-Jun-01	1319	sa	9.0	47	R	41617D627D	442676	4817608	oxbow
8-Jun-01	1320	f	37.0	78	no	4238333D14	442676	4817608	oxbow
8-Jun-01	1322	sa	6.5	43	R	4238167710	442676	4817608	oxbow
8-Jun-01	1330	f	24.5	65	R	42381F0D25	442676	4817608	oxbow
8-Jun-01	1545	sa	12.3	53	R	42393F033E	442814	4817611	stream
8-Jun-01	1555	sa	11.6	52	no	4238291117	442842	4817610	sidebow
8-Jun-01	1605	sam	11.1	48	R	422D3B1E49	442881	4817602	sidebow
8-Jun-01	1614	sa	13.0	53	R	423832241B	442921	4817612	stream
9-Jun-01	925			~24"		<i>Crotalus viridis</i>	442793	4817850	on west-facing slope
9-Jun-01	950			~42"		<i>Crotalus viridis</i>	443011	4817493	along stream, drinking water





6-Jun-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 enclosure and the second pinch (barrier?).
6-Jun-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.
6-Jun-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.
6-Jun-02	1158	F				uncaptured	442683	4817608	
6-Jun-02	1335	SA				uncaptured	442737	4817588	
6-Jun-02	1352	SAM	12.3	52	no	435100720A	442802	4817600	possibly 2001 cohort
6-Jun-02	1411	F	19.5	52	no	4350522037	442839	4817603	possibly 2001 cohort
6-Jun-02	1415	SAF	14.0	48	no	433C7B7D67	442839	4817603	possibly 2001 cohort
6-Jun-02	1417					uncaptured	442839	4817603	
6-Jun-02	1434	SA	11.5	48	no	43583D0143	442846	4817614	possibly 2001 cohort
6-Jun-02	1435	SAM	13.3	51	no	435B363109	442846	4817614	possibly 2001 cohort
6-Jun-02	1440	F	19.0	56	no	4350310C6D	442852	4817615	possibly 2001 cohort
6-Jun-02	1517	SAF	13.9	49	no	43592B4460	443213	4817459	possibly 2001 cohort
6-Jun-02	1540	SAF	12.0	50	no	433D537612	443301	4817430	possibly 2001 cohort
6-Jun-02	1600	SAF	15.0	51	no	43523F2657	443483	4817430	possibly 2001 cohort
6-Jun-02	1603	SAM	10.5	49	no	4358415C7A	443483	4817430	possibly 2001 cohort
6-Jun-02	1613	SAF	16.9	57	no	43574A2354	443498	4817476	possibly 2001 cohort
6-Jun-02	1632	SAF	15.0	54	no	43583B5969	443732	4817618	possibly 2001 cohort
6-Jun-02	1638	SA	12.0	51	no	433F535452	443773	4817708	possibly 2001 cohort
6-Jun-02	1650	SAM	12.0	50	no	434E16172D	443824	4817870	possibly 2001 cohort
6-Jun-02	1652	F	39.7	75	recap from 2001	423D3334857	443824	4817870	this is most likely frog #432D3334857 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.
6-Jun-02	1654	SA	10.5	47	no	433C69682B	443824	4817870	possibly 2001 cohort
6-Jun-02	1656	SAF	11.5	50	no	434D404937	443824	4817870	possibly 2001 cohort
6-Jun-02	1712	SAM	10.5	43	no	43525C3E6A	443816	4817939	possibly 2001 cohort
6-Jun-02	1715	SAM	9.0	47	no	4358000343	443826	4817948	possibly 2001 cohort
7-Jun-02	935	F	33.2	72	yes	435B5B1B41	442284	4817240	same place as yesterday



















