CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES _____ LOCALITY Pine Creek - Conversion, ~~UTAH~~ Nevada

COLLECTED BY _____ DATE _____

Cat. # _____ Measurements by _____ DATE _____

Specimen # 007

	001	002	003	004	005	006	007	008
Total L.								
Standard L.	219	170	206	143	143	116	138	148
Body D								
Head L	288	306	301	301	308	284	297	290
Oroit L								
Upper Jaw L	128	153	160	147	161	129	167	155
Dors. Orig. to Snt. tip	525	529	519	517	524	509	507	514
Dorsal fin basal L								
Dorsal fin depressed L	224	194	218	245	238	241	225	223
Adip. fin depressed L	082	094	073	084	091	103	072	074
Caudal peduncle D	109	118	107	126	126	121	116	108
Caudal peduncle L	146	153	155	154	161	147	159	147
Vertebrae								
1st Arch gillrakers (up)	8	9	9	8	7	8	8	7
(lower)	013	015	014	014	013	013	013	012
(total)	021	024	023	022	020	021	021	019
Branchiostegal rays right	010	011	011	011	010	010	011	011
(left)	011	011	012	011	010	010	011	010
Dorsal rays	~~12 P(11)~~							
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	043	039	034	038	035	037	038	033
Scales 2 rows above lat.	175	152	151	140	142	149	149	140
Pelvic fin rays								
Pyloric caeca	040	035	034	041	035	036	029	030
Dentition	031	045	032	050	027	017	036	021

① Lateral line branched posterior caudal peduncle

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

*Mt. wheeler cutthroat

SPECIES Salmo Clarki

LOCALITY Pine Crk, ~~Ely Ca~~ White Pine Co, Nevada

COLLECTED BY Frank Dodge

DATE 12 July 1972

Cat. # 3

Measurements by

DATE

Specimen #

*Teeth on Arches Teeth on gill arch

(1)

20 Specimens

	1	2	3	4	5	6	7	8
Total L.	256	203	240	172	175	140	163	178
Standard L.	225	170	204	144	143	115	139	147
Body D								
Head L	62	51	60	43	45	33	40	49
Oroit L	31							
Upper Jaw L	31	30	32	22	25	20	22	20
Dors. Orig. to Snt. tip	113	87	104	72	75	59	69	73
Dorsal fin basal L								
Dorsal fin depressed L	50	38	48	36	36	30	32	34
Adip. fin depressed L	16	17	16	12	15	13	13	13
Caudal peduncle D	22	20	22	18	18	14	15	16
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15	20	20

Scales & Rows above: $N = 22$, $\bar{y} = 146.95$

VERTEBRAE

$N = 15$ $\bar{X} = 62.2$

60	62	63	64
1	10	3	1

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES _____ LOCALITY Pine creek - Conversions

COLLECTED BY _____ DATE _____

Cat. # _____ Measurements by _____ DATE _____

Specimen # 007

	009	010	011	012	013	014	015	016
Total L.								
Standard L.	145	148	149	121	125	124	135	138
Body D								
Head L	284	297	309	289	280	298	311	292
Oroit L								
Upper Jaw L	142	142	154	140	136	145	148	150
Dors. Orig. to Snt. tip	514	534	544	496	504	508	526	513
Dorsal fin basal L								
Dorsal fin depressed L	230	223	221	240	232	242	230	239
Adip. fin depressed L	088	095	107	099	088	089	096	115
Caudal peduncle D	122	122	126	116	120	121	111	124
Caudal peduncle L	155	169	154	165	144	153	148	159
Vertebrae								
1st Arch gillrakers (up)	8	8	7	9	9	8	8	9
(lower)	013	014	013	015	16	014	014	014
(total)	021	022	020	024	25	023	022	023
Branchiostegal rays right	009	010	010	011	010	011	011	010
(left)	011	011	011	012	011	011	010	011
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	044	038	040	040	037	038	040	039
Scales 2 rows above lat.	156	136	141	142	144	142	136	143
Pelvic fin rays								
Pyloric caeca	038	031	034	034	025	039	028	032
Dentition	013	010	032	029	039	028	009	034

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt. Wheeler cutthroat Salmo Clarki LOCALITY Pine crk. White Pine Co, Nevada

COLLECTED BY Frank Dodge DATE 12 July 1972

Cat. # 3 Measurements by _____ DATE _____

Specimen # 20 Specimens	teeth on arch 9	Teeth on arch 10	11	12	Teeth on arch 13	14	15	16
Total L.	178	175	180	144	145	145	161	126
Standard L.	147	144	147	123	124	121	138	114
Body D								
Head L	42	44	40	25	35	36	41	33
Oroit L	22	23	26					
Upper Jaw L	22	23	26	18	19	16	22	18
Dors. Orig. to Snt. tip	77	76	79	60	61	62	61	56
Dorsal fin basal L								
Dorsal fin depressed L	34	35	35	30	31	32	32	28
Adip. fin depressed L	15	14	15	14	11	12	13	12
Caudal peduncle D	18	19	19	14	15	14	16	15
Caudal peduncle L	23	25	24	18	18	17	22	19
Vertebrae								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES _____ LOCALITY Pine Creek - Conversions

COLLECTED BY _____ DATE _____

Cat. # _____ Measurements by _____ DATE _____

Specimen # 007

	017	018	019	020			Ave:	
Total L.								
Standard L.	165	173	177	172				
Body D								
Head L	295	292	278	284			294	
Oroit L								
Upper Jaw L	133	133	134	137			145	
Dors. Orig. to Snt. tip	514	504	474	490			513	
Dorsal fin basal L								
Dorsal fin depressed L	238	230	237	225			230	
Adip. fin depressed L	114	080	103	088			091	
Caudal peduncle D	124	115	124	118			117	
Caudal peduncle L	162	150	175	167			156	
Vertebrae								
1st Arch gillrakers (up)	8	10	7	8				
(lower)	15	14	13	14				
(total)	023	024	020	022	22.00			
Branchiostegal rays right	011	011	010	011				
(left)	010	012	011	011	21.40			
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	034	046	043	041	38.85			
Scales 2 rows above lat.	154	149	142	176	146.95			
Pelvic fin rays								
Pyloric caeca	039	027	032	032	33.55			
Dentition	025	035	008	025	27.30			

55

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. Wheeler Cutthroat

SPECIES Salmo clarki LOCALITY Pine Creek White Pine Co, Nevada

COLLECTED BY Frank Dodge DATE 12 July 1972

Cat. # 3 Measurements by _____ DATE _____

Specimen #

20 Specimens	17	18	19	20				
Total L.	125	135	115	121				
Standard L.	114	114	96	99				
Body D								
Head L	30	32	26	29				
Oroit L								
Upper Jaw L	13	18	14	13				
Dors. Orig. to Snt. tip	52	58	45	49				
Dorsal fin basal L								
Dorsal fin depressed L	28	28	23	25				
Adip. fin depressed L	6	11	9	11				
Caudal peduncle D	12	12	12	12				
Caudal peduncle L	16	17	15	15				
Vertebrae								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt wheeler cutthroat LOCALITY Hendry creek Headwater Conversion

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen #	004 001	002	003	004	005	006	007	008
Total L.								
Standard L.								
Body D								
Head L	283	275	261	284	306	278	253	286
Oroit L								
Upper Jaw L	161	153	154	150	185	163	134	161
Dors. Orig. to Snt. tip	459	479	456	462	507	503	470	484
Dorsal fin basal L								
Dorsal fin depressed L	262	250	248	252	280	265	261	265
Adip. fin depressed L	084	086	093	102	116	095	074	083
Caudal peduncle D	127	127	120	129	126	122	119	114
Caudal peduncle L	161	153	161	161	164	156	156	156
Vertebrae								
1st Arch gillrakers (up)	7	8	8	7	8	8	8	8
(lower)	011	012	015	012	012	013	013	013
(total)	018	020	023	019	020	021	021	021
Branchiostegal rays right	012	011	012	011	011	011	011	012
(left)	012	011	011	010	010	010	011	012
Dorsal rays	~~11P(10B)~~	~~11(10B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~
Anal rays	~~13P(12B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~
Pectoral fin rays	~~14P(13B)~~	~~14P(13B)~~	~~14P(13B)~~	~~14P(13B)~~	~~13P(12B)~~	~~14P(13B)~~	~~14P(13B)~~	~~14P(13B)~~
Scales in lateral line								
Scales above lateral line	045	041	044	043	038	035	041	035
Scales 2 rows above lat.	154	146	146	159	142	135	144	163
Pelvic fin rays	~~10P(9B)~~	~~9P(8B)~~	~~9P(8B)~~	~~9P(8B)~~	~~10P(9B)~~	~~10P(9B)~~	~~9P(8B)~~	~~10P(9B)~~
Pyloric caeca	046	039	035	040	044	033	037	031
Dentition (basibranchial)	025	020	018	018	032	023	030	049

Perfusion of teeth around 1st few gill arch nodes.

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt. wheeler Cutthroat (hybrids?) Salmo Clarki LOCALITY Hendry's crk - headwaters at upstream limit of trout distribution Nevada / White Pine Co. / Mt. Moriah

COLLECTED BY Frank Dodge DATE 20 Jun 72

Cat. # 5 Measurements by _____ DATE 8 Aug 72

Specimen # 20 specimins	1 (ripe ♀)	2	3	4	5	6 (*)	7	8
Total L.	271	234	176	219	224	173	158	229
Standard L.	236	196	149	186	189	147	134	192
Body D								
Head L	67	54	39	53	58	41	34	55
Orbit L								
Upper Jaw L	38	30	23	28	35	24	18	31
Dors. Orig. to Snt. tip	117	94	68	86	96	74	63	93
Dorsal fin basal L								
Dorsal fin depressed L	62	49	37	47	53	39	35	51
Adip. fin depressed L	20	17	14	19	22	14	10	16
Caudal peduncle D	30	25	18	24	24	18	16	22
Caudal peduncle L	38	30	24	30	31	23	21	30

VERTEBRAE

N = 17 $\bar{X} = 62.4$

61	62	63	64
4	5	6	2

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES mt wheeler cutthroat LOCALITY Hendry's creek - Headwater Conversions

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen #	004	009	010	011	012	013	014	015	016
Total L.									
Standard L.									
Body D									
Head L		331	278	267	251	280	282	280	291
Oroit L									
Upper Jaw L		174	147	144	145	146	138	171	145
Dors. Orig. to Snt. tip		528	511	502	483	503	450	513	503
Dorsal fin basal L									
Dorsal fin depressed L		269	232	235	251	248	252	280	251
Adip. fin depressed L		117	079	096	086	089	103	095	105
Caudal peduncle D		129	125	133	139	133	128	130	125
Caudal peduncle L		151	159	171	158	165	143	164	145
Vertebrae									
1st Arch gillrakers (up)		8	8	7	8	8	8	8	7
(lower)		013	013	013	014	013	013	013	014
(total)		021	021	020	022	021	021	021	021
Branchiostegal rays right		011	010	011	011	010	010	011	010
(left)		012	011	010	011	011	011	010	011
Dorsal rays		~~11P(10B)~~	~~12P(11B)~~	~~11P(11B)~~					
Anal rays		~~12P(11B)~~	~~12P(11B)~~	~~12P(11B)~~					
Pectoral fin rays		~~14P(13B)~~	~~14P(13B)~~	~~13P(11B)~~					
Scales in lateral line		~~158~~							
Scales above lateral line		039	039	036	037	039	036	036	039
Scales 2 rows above lat.		158	138	158	146	129	154	151	151
Pelvic fin rays		~~9P(8B)~~	~~9P(8B)~~	~~9P(8B)~~	~~9P~~	~~10P(8B)~~	~~9P(8B)~~	~~9P(8B)~~	~~9P(8B)~~
Pyloric caeca		041	038	036	029	038	040	032	043
Dentition		031	023	025	023	022	020	023	000

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. Wheeler cutthroat (hybrid?)

SPECIES Salmo clarki LOCALITY Hendry's Creek: headwaters at upstream limit of trout distribution Nevada / White Pine Co. / Mt. Moriah

COLLECTED BY Frank Dodge DATE 20 June 72

Cat. # 5 Measurements by _____ DATE _____

Specimen # 20 specimens	9	10	11	12	13	14 (♀ Almost fully dev eggs)	15	16
Total L.	213	206	222	178	185	239	175	183
Standard L.	178	176	187	151	157	208	146	151
Body D		4						
Head L	59	49	50	38	44	57	41	44
Oroit L								
Upper Jaw L	31	26	27	22	23	28	25	22
Dors. Orig. to Snt. tip	94	90	94	73	79	91	75	76
Dorsal fin basal L								
Dorsal fin depressed L	48	41	44	38	39	58	41	38
Adip. fin depressed L	21	14	18	13	14	21	14	16
Caudal peduncle D	23	22	25	21	21	26	19	19
Caudal peduncle L	27	28	22	24	26	29	24	[illegible]

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt Wheeler Cutthroat LOCALITY Hendry's Creek Headwater Conversion

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen # 004

	017	018	019	020				
Total L.								
Standard L.								
Body D								
Head L	272	256	294	288		279.8		
Oroit L								
Upper Jaw L	160	138	170	152		154.55		
Dors. Orig. to Snt. tip	481	493	511	489		489.35		
Dorsal fin basal L								
Dorsal fin depressed L	245	256	239	260		255.05		
Adip. fin depressed L	096	090	087	119		94.75		
Caudal peduncle D	128	131	129	130		127.2		
Caudal peduncle L	155	159	152	135		156.25		
Vertebrae								
1st Arch gillrakers (up)	8	8	8	8				
(lower)	014	013	013	014				
(total)	022	021	021	022	~~19.80~~	20.85		
Branchiostegal rays right	011	011	010	010				
(left)	011	011	011	011	20.70			
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	042	038	042	038	37.35	39.2		
Scales 2 rows above lat.	158	159	161	146	147.20	149.9		
Pelvic fin rays	~~9(10)~~	~~9(10)~~	~~9(10)~~	~~10(9)~~				
Pyloric caeca	038	037	038	044	36.10			
Dentition	028	029 7 teeth on gill Arch	014	031	23.50			

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt. wheeler cutthroat Salmo clarki

LOCALITY Hendry's Crk. headwaters at upstrm limit of trout distribution Nevada, Wh. Pine Co. / Mt Moriah

COLLECTED BY Frank Dodge

DATE 20 June 72

Cat. # 5

Measurements by

DATE

Specimen # 20 specimens

	#17	18 Teeth on arch	19	20 Teeth on gill arch / Stomach Area Perfuse w/spots				
Total L.	213	172	253	215				
Standard L.	187	144	217	184				
Body D								
Head L	51	37	64	53				
Oroit L								
Upper Jaw L	30	20	37	28				
Dors. Orig. to Snt. tip	90	71	111	90				
Dorsal fin basal L								
Dorsal fin depressed L	46	37	52	48				
Adip. fin depressed L	18	13	19	22				
Caudal peduncle D	24	19	28	24				
Caudal peduncle L	29	23	33	25				

	18	19	20	21	22	23	
	1	1	3	11	3	1	20.85

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES mt wheeler cutthroat LOCALITY Goshute creek - conversion

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen # 001

	001	002	003	004	005	006	007	008
Total L.								
Standard L.								
Body D								
Head L	285	304	280	280	258	282	289	288
Oroit L								
Upper Jaw L	155	145	151	151	139	153	151	169
Dors. Orig. to Snt. tip	487	503	482	517	461	461	506	497
Dorsal fin basal L	~~266~~							
Dorsal fin depressed L	266	245	230	251	272	269	243	237
Adip. fin depressed L	123	105	064	100	097	115	105	107
Caudal peduncle D	123	132	107	129	118	121	125	124
Caudal peduncle L	162	158	151	158	160	147	164	141
Vertebrae								
1st Arch gillrakers (up)	006	007	007	006	007	007	006	007
(lower)	013	014	013	013	012	014	013	013
(total)	019	021	020	019	019	021	019	020
Branchiostegal rays right	011	011	010	010	010	010	011	011
(left)	010	013	010	011	010	011	010	011
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	043	045	038	041	040	042	035	040
Scales 2 rows above lat.	162	150	143	151	152	145	138	140
Pelvic fin rays								
Pyloric caeca	035	045	038	035	036	035	034	035
Dentition	017	026	018	025	022	025	046	024

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. wheeler cutthroat (introduced from Pine Creek)

SPECIES Salmo clarki LOCALITY Goshute Crk. / Nevada / White Pine Co. Steptoe Valley near Currie, Nev.

COLLECTED BY Frank Dodge DATE 13 July 1972

Cat. # 10 Measurements by _____ DATE _____

Specimen # / 21 specimens total	1	2	3	4	5	6	7	8
Total L.	185	176	161	166	170	190	180	213
Standard L.	154	151	139	139	143	156	152	177
Body D								
Head L	44	46	39	39	37	44	44	51
Oroit L								
Upper Jaw L	24	22	21	21	20	24	23	30
Dors. Orig. to Snt. tip	75	76	67	72	66	72	77	88
Dorsal fin basal L								
Dorsal fin depressed L	41	37	32	35	39	42	37	42
Adip. fin depressed L	19	16	9	14	14	18	16	19
Caudal peduncle D	19	20	15	18	17	19	19	22
Caudal peduncle L	25	24	21	22	23	23	25	25

VERTEBRAE

N = 18 $\bar{X}$ = 62.3

61	62	63	64
2	9	6	1

Gill Rakers N = 21

17	18	19	20	21	22
1		6	7	5	2

$\bar{X}$ =

BRANCHIOSTEGAL RAYS R 21 Range = 10 - 11 $\bar{X}$ =

L 21 Range 10 - 13 $\bar{X}$ =

SCALES Above L.L. N = 21 Range = 36-45 $\bar{X}$ = 39.04

SCALES LAT SERIES N = 21 Range = 135-162 $\bar{X}$ = 143.95

PYLORIC CAECA N = 21 Range = 32 - 45 $\bar{X}$ = 36.42

DENTITION N = 21 Range = 8-90 $\bar{X}$ = 28.57

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES mt wheeler cutthroat LOCALITY Goshute creek - Conversion

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen # 001

	009	010	011	012	013	014	015	016
Total L.								
Standard L.								
Body D								
Head L	301	292	251	267	244	280	295	275
Oroit L								
Upper Jaw L	162	178	137	~~142~~ 136	129	168	154	158
Dors. Orig. to Snt. tip	536	528	473	~~136~~ 465	450	533	521	510
Dorsal fin basal L								
Dorsal fin depressed L	253	254	251	~~465~~ 242	236	235	260	250
Adip. fin depressed L	102	114	095	111	106	112	112	102
Caudal peduncle D	126	121	107	111	122	123	126	117
Caudal peduncle L	162	146	137	149	167	134	154	142
Vertebrae								
1st Arch gillrakers (up)	007	008	007	007	007	008	007	008
(lower)	013	013	014	013	013	014	012	014
(total)	020	021	021	020	020	022	019	022
Branchiostegal rays right	010	011	010	011	011	011	010	011
(left)	011	012	010	011	011	011	010	012
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	038	039	036	037	039	042	036	036
Scales 2 rows above lat.	147	149	154	135	145	143	137	137
Pelvic fin rays								
Pyloric caeca	039	035	032	036	036	032	035	036
Dentition	027	028	037	031	008	022	022	046

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. Wheeler cutthroat (introduced from Pine creek)

SPECIES Salmo clarki

LOCALITY Goshute crk/Nev./White Pine Co. Steptoe Valley near Currie, Nev.

COLLECTED BY Frank Dodge

DATE 13 July 1972

Cat. # 10

Measurements by

DATE

Specimen # 21 specimens total	9	10	11	12	13	14	15	16 ripe ♀
Total L.	199	191	197	191	152	213	168	228
Standard L.	166	157	167	161	131	178	142	196
Body D								
Head L	50	46	42	43	32	50	42	54
Oroit L								
Upper Jaw L	27	28	23	22	17	30	22	31
Dors. Orig. to Snt. tip	89	83	79	75	59	95	74	100
Dorsal fin basal L								
Dorsal fin depressed L	42	40	42	39	31	42	37	49
Adip. fin depressed L	17	18	16	18	14	20	16	20
Caudal peduncle D	21	19	18	18	16	22	18	23
Caudal peduncle L	27	23	23	24	22	24	22	28

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt. Wheeler cutthroat LOCALITY Goshute creek - Conversion

COLLECTED BY _____ DATE 1972

Cat. # _____ Measurements by _____ DATE _____

Specimen # 001

	017	018	019	020	021			
Total L.								
Standard L.								
Body D								
Head L	293	310	301	275	282		282.476	
Oroit L								
Upper Jaw L	167	179	174	154	163		155.857	
Dors. Orig. to Snt. tip	503	531	506	478	505		497.761	
Dorsal fin basal L								
Dorsal fin depressed L	251	262	246	231	228		248.190	
Adip. fin depressed L	104	124	096	101	097		104.380	
Caudal peduncle D	132	137	120	115	119		121.666	
Caudal peduncle L	153	144	150	149	152		151.428	
Vertebrae								
1st Arch gillrakers (up)	006	006	007	006	007			
(lower)	013	014	013	011	014			
(total)	019	020	020	017	021	20.00		
Branchiostegal rays right	011	011	010	010	011			
(left)	011	011	011	009	011	21.38		
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	042	036	038	039	038	39.04		
Scales 2 rows above lat.	141	128	134	148	144	143.95		
Pelvic fin rays								
Pyloric caeca	040	037	036	035	043	36.42		
Dentition	034	012	019	026	010	28.57		

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. Wheeler cutthroat (introduced from Pine Crk.)

SPECIES Salmo clarki

LOCALITY Goshute Crk./Nev./White Pine Co. Steptoe Valley near Currie, Nev.

COLLECTED BY Frank Dodge

DATE 13 July 1972

Cat. # 10

Measurements by _____

DATE _____

Specimen # 21 specimens total	17	18	19	20 ♂ ripe	21 ♀ ripe			
Total L.	170	175	199	245	222			
Standard L.	143	145	166	207	184			
Body D								
Head L	42	45	50	57	52			
Oroit L								
Upper Jaw L	24	26	29	32	30			
Dors. Orig. to Snt. tip	72	77	84	99	93			
Dorsal fin basal L								
Dorsal fin depressed L	36	38	41	48	42			
Adip. fin depressed L	15	18	16	21	18			
Caudal peduncle D	19	20	20	24	22			
Caudal peduncle L	27	31	25	31	28			

Northern forms,
Salt Lk. Basin
grouped.
19 specimens

Provo Basin — Logan R. Utah

CHARACTER ANALYSIS SHEET

1429-64129-41277

Includes #37971, 37980 (SU)-37971 (Cal Acad)-64130 (Mich)-125054 (USNM)-41637, 1600, 36881, 63167

Page ____ of ____ pages

Species S.c. utah

Locality

Field No. ____ Coll. by

Date of Coll. ____ Measurements by ____ Date ____

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No. ____

	N	Range	Mean	S.D.^{2}	S.D.	C.D.	SEM
Standard L	17	140-340	201.3				
Body D	10	204-274	230.0				
Head L	17	235-269	257.2				
Head D	12	146-176	164.5				
Head W	11	103-141	125.0				
Least interorbital bony W	12	47-70	59.6				
Occiput to snout tip	12	150-190	168.1				
Snout L	13	45-63	54.8				
Orbit L	13	53-71	62.7				
Upper Jaw L	17	121-152	140.7	-53.3	7.30		1.77
Dorsal origin to snout tip	16	461-524	500.8				
Depressed dorsal to insertion of adipose	16	140-200	168.3				
Dorsal origin to anal o	16	286-373	323.6				
Dorsal fin basal L	16	94-141	115.5				
Dorsal fin depressed L	16	160-211	187.3	-191.3	13.8		3.45
Adipose fin depressed L	16	65-92	74.4				
Caudal peduncle D	12	89-116	101.8	81.6	9.03		2.61
Caudal peduncle L	16	146-181	165.7	90.9	9.53		2.38
Vertebrae	19	61-65	63.0	~~1.89~~	1.00		.229
First arch gill rakers (upper)	19	7-8	7.4 ✓				
(lower)	19	10-14	12.4 ✓				
(total)	19	17-22	19.7 ✓	1.32 ✓	1.15 ✓		.264 ✓
Basibranchial teeth	14	3-13	7.9				
Branchiostegal rays (right)	16	10-13	10.8	.749	.865		.216
(left)	16	10-13	11.5	.666	.816		.204
Pectoral fin rays	17	13-16	14.6				
Pelvic fin rays	17	9-10	9.2				
Scales in lateral line	16	116-130	122.0	18.1	4.25		1.06
Scales above lateral line	16	32-43	37.6	8.50	2.92		.730

+ 5 Bear L.
+ Utah L.
Ogden R.

1 - 37971 - Provo basin - 7/8/15 - Snyder & Hubbs
2,3 - 37980 - Logan R., Utah - 8/27/1894
(#12)

Stanford

CHARACTER ANALYSIS SHEET

Page ___ of ___ pages.

Species *Salmo virginalis* (utah) utah & pelvic rays

Locality

Field No. _____ Coll. by

Date of Coll. _____ Measurements by _____ Date

Jar No. _____ No. of Jars (not in possession) no ✗ - 2 AT No. of Specs. B A Specimen No. B

	1	2	3	4	5		
Standard L	156	180	146	194	155		
Body D	33	—	40				
Head L	39	44	38	52	40		
Head D	25	30	25	31			
Head W	20	23	20				
Least interorbital bony W	9	11	10	12			
Occiput to snout tip	25	28	25	32			
Snout L	8	10	8	10	9		
[illegible] L	10	11	10	12	10		
[illegible] Jaw L	21	25	20	28	22		
Dorsal origin to snout tip	72	85	74	100	80		
Depressed dorsal to insertion of adipose	25	30	23	33	27		
Dorsal origin to anal o.	50	64	51	63	48		
Dorsal fin basal L	18	21	19	22	17		
Dorsal fin depressed L	29	36	29	36	28		
Adipose fin depressed L	13	13	10	13	11		
Caudal peduncle D	15	19	17	18			
Caudal peduncle L	27	31	24	33	25		
Vertebrae		62	62	63	63		
First arch gill rakers (upper)	7	7	7	8	8		
(lower)	13	13	14	12	14		
(total)	20	20	21	20	22		
Basibranchial teeth	yes	13	11	13	3		
Branchiostegal rays (right)	11	10	10	10	10		
(left)	12	11	11	11	11		
[illegible]ral fin rays	15	15	16	15	14		
Pelvic fin rays	9+1	9+1	9	10	9		
Scales in lateral line	116	117	121	124	121		
Scales above lateral line	—	43	40	36	36		

#4 Stanford #1294 - 2764 no date # 11

25 Silvery poor condition, small spots above & below on head, dorsal - larger spots toward and onto tail.

Silvery - small spots

— Provo Utah

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species *Salmo purpuralis (utah)*

Locality _____

Field No. _____ Coll. by _____

Date of Coll. _____ Measurements by _____ Date _____

Jar No. ____ No. of Jars ____ No. of Spec. A ____ Specimen No. B

Measurements in thousands of standard length

Standard L	156	171	146	194	155		
Body D	212		274				
Head L	250	257	260	268	258		
Head D	160	175	171	160			
Head W	128	134	137				
Least interorbital bony W	58	64	68	62			
Occiput to snout tip	160	164	171	165			
Snout L	51	58	55	52	58		
Orbit L	64	64	68	62	65		
Upper Jaw L	135	146	137	144	142		
Dorsal origin to snout tip	461	496	506	515	516		
Depressed dorsal to insertion of adipose	160	175	157	170	174		
Dorsal origin to anal o	321	373	349	319	310		
Dorsal fin basal L	115	123	130	113	110		
Dorsal fin depressed L	186	210	198	185	194		
Adipose fin depressed L	83	76	68	67	71		
Caudal peduncle D	96	111	116	93			
Caudal peduncle L	173	181	164	170	161		

CHARACTER ANALYSIS SHEET

Species Salmo clarki utah

Locality Wilson Spring, Provo Basin, Midway, Utah

~~Field No.~~ S.U. 37971 Coll. by Snyder & Hubbs

Date of Coll. 7-8-15 Measurements by Behnke Date

Jar No. 1 No. of Jars 1 No. of Spec. 1 ~~Specimen No.~~

	1						
Standard L	149						
Body D	34						
Head L	38						
Head D	25						
Head W	21						
Least interorbital bony W	9						
Occiput to snout tip	26						
Snout L	8						
Orbit L	9						
Upper Jaw L	21						
Dorsal origin to snout tip	73						
Depressed dorsal to insertion of adipose	23						
Dorsal origin to anal o	49						
Dorsal fin basal L	18						
Dorsal fin depressed L	29						
Adipose fin depressed L	13						
Caudal peduncle D	15						
Caudal peduncle L	26						
Vertebrae	63						
First arch gill rakers (upper)	7						
(lower)	13						
(total)	20						
Basibranchial teeth	missing						
Branchiostegal rays (right)	11						
(left)	12						
Pectoral fin rays	15						
Pelvic fin rays	9						
Scales in lateral line	125						
Scales above lateral line	38						

CHARACTER ANALYSIS SHEET

Species Salmo clarki utah

Locality Wilson Springs, Provo Basin, Midway, Utah

~~Field No.~~ SU 37971 Coll. by Snyder & Hubbs

Date of Coll. 7-8-15 ~~Measurements~~ conversions by Middleton Date 2-25-59

Jar No. 1 No. of Jars 1 No. of Spec. 1 Specimen No.

Measurements in thousands of standard length

	1						
Standard L	149						
Body D	228						
Head L	255						
Head D	168						
Head W	141						
Least interorbital bony W	60						
Occiput to snout tip	174						
Snout L	54						
Orbit L	60						
Upper Jaw L	141						
Dorsal origin to snout tip	490						
Depressed dorsal to insertion of adipose	154						
Dorsal origin to anal o	329						
Dorsal fin basal L	121						
Dorsal fin depressed L	195						
Adipose fin depressed L	87						
Caudal peduncle D	101						
Caudal peduncle L	174						

#2 - Cal. Acad - 64130 & 616 Utah Lake X RAY #1

#3 #1429 & 100 - Utah Lake X RAY #3

#4 = Cal Acad - 64129 - Utah Lk. X-Ray #2

Cal Acad

CHARACTER ANALYSIS SHEET

Page ___ of ___ pages.

Species *Salmo utah*

Locality #1 - Provo R. 1889 - Jordan & Evermann Cal. Acad # ~~8194~~ 41277 - X ray #4 8194 Snd'.

Field No. Cal. Acad Coll. by

Date of Coll. Measurements by R. Behnke Date 4-23-58

Jar No. No. of Jars No. of Spec. 3 ~~Specimen No.~~

	1	2	3	4			
Standard L	140	290	275	340			
Body D				77			
Head L	36	81	74	85			
Head D				55			
Head W				35			
Least interorbital bony W				16			
Occiput to snout tip				51			
Snout L				18			
Orbit L				18			
Upper Jaw L	19	44	42	48			
Dorsal origin to snout tip	70	149	134	169			
Depressed dorsal to insertion of adipose	24	51	55	55			
Dorsal origin to anal o.	46	91	81	113			
Dorsal fin basal L	17	35	26	35			
Dorsal fin depressed L	27	54	44	58			
Adipose fin depressed L	10	19	19	23			
Caudal peduncle D				37			
Caudal peduncle L	34	52	45	59			
Vertebrae	63	62	65	63	(63-64-61)		
First arch gill rakers (upper)	8	8	7	7			
(lower)	11	12	10	12			
(total)	19	20	17	19			
Basibranchial teeth	4	11	10	6			
Branchiostegal rays (right)	11	12	13	10			
(left)	12	12	13	10			
Pectoral fin rays	14	15	14	15			
Pelvic fin rays	9	10	10	9			
Scales in lateral line	118	124	128	127			
Scales above lateral line	36 (40)	40	40	34			
2 rows	152	176	186	167			
adipose to l. l.	26						

Small ones (less than 100 mm)

CHARACTER ANALYSIS SHEET

Page ___ of ___ pages.

Species _____

Locality _____

Field No. _____ Coll. by _____

Date of Coll. _____ Remarks by _____ Date _____

Jar No. _____ No. of Jars _____ No. of Spec. _____ Specimen No. _____

Standard L						
Body D						
Head L						
Head D						
Head W						
Least interorbital conv W						
Snout to anous L						
Snout L						
Orbit L						
Upper jaw L						
Dorsal origin to anous L						
Depressed dorsal to insertion of adipose						
Dorsal origin to anal o.						
Dorsal fin basal L						
Dorsal fin depressed L						
Adipose fin depressed L						
Caudal peduncle D						
Caudal peduncle L						
Vertebrae						
First arch gill rakers (upper)						
(lower)						
(total)						
Supraneural spines						
Branchiostegal rays (right)						
(left)						
Pectoral fin rays						
Pelvic fin rays						
Scales in lateral line						
Scales above lateral line						

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species Salmo utah

Locality

Field No. Cal Creek Coll. by

Date of Coll. Measurements by RJB Date 4-23-58

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No.

Measurements in thousands of standard length

	1	2	3	4			
Standard L	140	290	275	340			
Body D				226			
Head L	257	255	269	250			
Head D				162			
Head W				103			
Least interorbital bony W				047			
Occiput to snout tip				150			
Snout L				053			
Orbit L				053			
Upper Jaw L	136	151	152	141			
Dorsal origin to snout tip	500	513	486	497			
Depressed dorsal to insertion of adipose	171	175	200	162			
Dorsal origin to anal o	328	313	294	332			
Dorsal fin basal L	121	120	94	103			
Dorsal fin depressed L	193	186	160	171			
Adipose fin depressed L	71	65	70	068			
Caudal peduncle D				109			
Caudal peduncle L	171	179	163	173			

CHARACTER ANALYSIS SHEET

UMMUZ

Page 1 of 1 pages.

Species S. c. utah

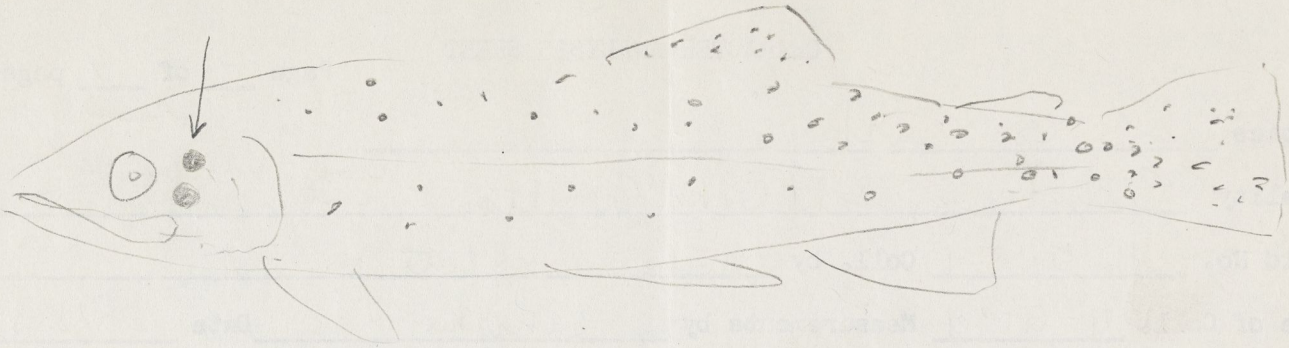
Locality City Creek, Salt Lake Co. Utah - Creek used for Salt Lake water supply, no planting

~~Field~~ Mich No. 125054 Coll. by James Moffett

Date of Coll. 11-6-34 Measurements by Behnke Date 12-18-58

Jar No. _____ No. of Jars _____ No. of Spec. 1 ~~Specimen No.~~ _____

	1						
Standard L	142						
Body D	35						
Head L	38						
Head D	25						
Head W	20						
Least interorbital bony W	10						
Occiput to snout tip	27						
Snout L	9						
Orbit L	9						
Upper Jaw L	21						
Dorsal origin to snout tip	74						
Depressed dorsal to insertion of adipose	24						
Dorsal origin to anal o	48						
Dorsal fin basal L	20						
Dorsal fin depressed L	30						
Adipose fin depressed L	13						
Caudal peduncle D	16						
Caudal peduncle L	23						
Vertebrae	63						
First arch gill rakers (upper)	8						
(lower)	12						
(total)	20						
Basibranchial teeth	8						
Branchiostegal rays (right)	10						
(left)	10						
Pectoral fin rays	15						
Pelvic fin rays	9						
Scales in lateral line	130						
Scales above lateral line	35						
above apx.	150						
	148-150						



Spotting somewhat larger than Utah lake forms (or Green R. Wyo)
2 spots on side of head resemble Pine Ck forms,

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality City Creek, Salt Lake Co., Utah

~~Field~~ Mich. No. 125054 Coll. by James Moffett

Date of Coll. 11-6-34 ~~Measurements~~ conversions by Middleton Date 2-25-59

Jar No. ____ No. of Jars ____ No. of Spec. 1 Specimen No. ____

Measurements in thousands of standard length

	1						
Standard L	142						
Body D	246						
Head L	268						
Head D	176						
Head W	141						
Least interorbital bony W	70						
Occiput to snout tip	190						
Snout L	63						
Orbit L	63						
Upper Jaw L	148						
Dorsal origin to snout tip	521						
Depressed dorsal to insertion of adipose	169						
Dorsal origin to anal o	338						
Dorsal fin basal L	141						
Dorsal fin depressed L	211						
Adipose fin depressed L	92						
Caudal peduncle D	113						
Caudal peduncle L	162						

CHARACTER ANALYSIS SHEET

Species *Salmo clarki utah*

Locality *Utah, Provo.*

~~Field~~ USNM No. *41637* Coll. by *D. S. Jordan*

Date of Coll. *1889* Measurements by *Behnke* Date *2-17-59*

Jar No. ____ No. of Jars ____ No. of Spec. *2 +3 small* Specimen No. ____

	1	2	3	4	5		
Standard L	157	141	64mm	62	54		
Body D	36	32					
Head L	41	37					
Head D	27	23					
Head W	19	17					
Least interorbital bony W	19	8					
Occiput to snout tip	27	25					
Snout L	9	7					
Orbit L	10	9					
Upper Jaw L	22	19					
Dorsal origin to snout tip	79	74					
Depressed dorsal to	27	22					
insertion of adipose							
Dorsal origin to anal o	52	45					
Dorsal fin basal L	19	17					
Dorsal fin depressed L	30	28					
Adipose fin depressed L	12	11					
Caudal peduncle D	15	14					
Caudal peduncle L	26	23					
Vertebrae	63	62					
First arch gill rakers (upper)	7	7	8	8	1 do not use 6	probably not definitive no.	
(lower)	12	11	12	13	12		
(total)	19	18	20	21	18		
Basibranchial teeth	10	4	faintly developed	3-2 well developed easily seen under 2x power	2-well developed	do not use	
Branchiostegal rays (right)	11	11					
(left)	12	12					
Pectoral fin rays	15	14					
Pelvic fin rays	9	9					
Scales in lateral line	119	116					
Scales above lateral line	39	37					
2-3 rows above	148	157					
		(approx. 10 rows to end of caudal peduncle)					

- Silvery, iridescent specimens -
larger, fainter spots above lateral line -
many - pepper-like dots evenly distributed
on sides.

no parr marks, but on 3 smaller
specimens in this collection, S.L. 54mm,
62, & 64mm) - parr marks are distinct.

CHARACTER ANALYSIS SHEET

Species *Salmo clarki utah*

Locality

USNM ~~Field No.~~ 41637 Coll. by

Date of Coll. ~~Measurements~~ conversions by *Middleton* Date *3-4-59*

Jar No. ____ No. of Jars ____ No. of Spec. *2* Specimen No.

Measurements in thousands of standard length

	1	2					
Standard L	157	141					
Body D	229	204					
Head L	261	235					
Head D	172	146					
Head W	121	108					
Least interorbital bony W	57	51					
Occiput to snout tip	172	159					
Snout L	57	45					
Orbit L	64	57					
Upper Jaw L	140	121					
Dorsal origin to snout tip	502	471					
Depressed dorsal to insertion of adipose	172	140					
Dorsal origin to anal o	331	286					
Dorsal fin basal L	121	108					
Dorsal fin depressed L	191	178					
Adipose fin depressed L	76	70					
Caudal peduncle D	95	89					
Caudal peduncle L	165	146					

too poorly preserved for all measurements.

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality Utah, Provo

USNM ~~Field~~ No. 1600 Coll. by Henshaw and Yarrow

Date of Coll. _____ Measurements by Behnke Date 2-26-59

Jar No. _____ No. of Jars _____ No. of Spec. 1 Specimen No. _____

	1						
Standard L	329						
Body D							
Head L	88						
Head D							
Head W							
Least interorbital bony W							
Occiput to snout tip							
Snout L							
Orbit L							
Upper Jaw L	48						
Dorsal origin to snout tip							
Depressed dorsal to insertion of adipose							
Dorsal origin to anal o							
Dorsal fin basal L							
Dorsal fin depressed L							
Adipose fin depressed L							
Caudal peduncle D							
Caudal peduncle L							
Vertebrae	64						
First arch gill rakers (upper)	7						
(lower)	14						
(total)	21						
Basibranchial teeth	present but damaged						
Branchiostegal rays (right)	11						
(left)	12						
Pectoral fin rays	13						
Pelvic fin rays	9						
Scales in lateral line	124						
Scales above lateral line	39						

- light color - poorly preserved -
but fairly large spots on caudal
peduncle w/ tail heavily spotted.

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality

~~Field No.~~ USNM 1600 Coll. by

Date of Coll. Measurements conversions by Middleton Date 3-6-59

Jar No. No. of Jars No. of Spec. 1 Specimen No.

Measurements in thousands of standard length

	1						
Standard L	329						
Body D							
Head L	267						
Head D							
Head W							
Least interorbital bony W							
Occiput to snout tip							
Snout L							
Orbit L							
Upper Jaw L	146						
Dorsal origin to snout tip							
Depressed dorsal to insertion of adipose							
Dorsal origin to anal o							
Dorsal fin basal L							
Dorsal fin depressed L							
Adipose fin depressed L							
Caudal peduncle D							
Caudal peduncle L							

CHARACTER ANALYSIS SHEET

Species Salmo clarki utah

Locality Utah, Provo R.

~~Field~~ Nat. Mus No. 36881 Coll. by H. C. Yarrow

Date of Coll. no date Measurements by Behnke Date 2-17-59

Jar No. 1 No. of Jars 1 No. of Spec. 1 ~~Specimen No.~~

	1					
Standard L	250					
Body D	60					
Head L	62					
Head D	41					
Head W	33					
Least interorbital bony W	15					
Occiput to snout tip	41					
Snout L	14					
Orbit L	14					
Upper Jaw L	35					
Dorsal origin to snout tip	125					
Depressed dorsal to insertion of adipose	45					
Dorsal origin to anal o	82					
Dorsal fin basal L	28					
Dorsal fin depressed L	42					
Adipose fin depressed L	20					
Caudal peduncle D	26					
Caudal peduncle L	39					
Vertebrae	63					
First arch gill rakers (upper)	7					
(lower)	12					
(total)	19					
Basibranchial teeth	3 - others probably fallen out.					
Branchiostegal rays (right)	11					
(left)	11					
Pectoral fin rays	14					
Pelvic fin rays	9					
Scales in lateral line	121					
Scales above lateral line	40					
3 rows above	164					

coloration and spotting typical of the Bonneville trout from this area — silvery — fairly evenly distributed — small — med. spots — mostly above lat. line. and caudally.

CHARACTER ANALYSIS SHEET

Page 1 of 1 pages

Species *Salmo clarki utah*

Locality

Nat. Mus. ~~Field No.~~ 36881 Coll. by

Date of Coll. Conversions ~~Measurements~~ by *Middleton* Date *3-6-59*

Jar No. No. of Jars No. of Spec. *1* Specimen No.

Measurements in thousands of standard length

	1						
Standard L	250						
Body D	240						
Head L	248						
Head D	164						
Head W	132						
Least interorbital bony W	60						
Occiput to snout tip	164						
Snout L	56						
Orbit L	56						
Upper Jaw L	140						
Dorsal origin to snout tip	500						
Depressed dorsal to insertion of adipose	180						
Dorsal origin to anal o	328						
Dorsal fin basal L	112						
Dorsal fin depressed L	168						
Adipose fin depressed L	80						
Caudal peduncle D	104						
Caudal peduncle L	156						

= utah

CHARACTER ANALYSIS SHEET

Species S. c. "jelewritius"

Locality Utah, Provo

USNM ~~Field~~ No. ~~16,0~~ 63167 Coll. by D. S. Jordan

Date of Coll. ? Measurements by Behnke Date 2-25-59

Jar No. ____ No. of Jars ____ No. of Spec. 6 ~~Specimen No.~~ ____

	1	2	3	4	5	6
Standard L	147	140	25 — 70mm			
Body D	32	31	70mm = whitefish			
Head L	38	36				
Head D	23	23				
Head W	17	16				
Least interorbital bony W	9	8				
Occiput to snout tip	26	24				
Snout L	8	8				
Orbit L	10	10				
Upper Jaw L	20	19				
Dorsal origin to snout tip	77	72				
Depressed dorsal to insertion of adipose	25	23				
Dorsal origin to anal o	45	45				
Dorsal fin basal L	16	15				
Dorsal fin depressed L	26	27				
Adipose fin depressed L	10	11				
Caudal peduncle D	15	13				
Caudal peduncle L	23	22				
Vertebrae	65	63				
First arch gill rakers (upper)	7	7				
(lower)	13	12				
(total)	20	19				
Basibranchial teeth	aprx. 10	4				
Branchiostegal rays (right)	11	—				
(left)	12	—				
Pectoral fin rays	15	15				
Pelvic fin rays	10	9				
Scales in lateral line	121	—				
Scales above lateral line	37	32				

These are typical utah.

Silvery - viridescent
tiny spots, sparsely scattered.

*1 = B.Y.U. 11688 coll. 1939. VIII-2-61

B.Y.U. 3887-892

Ogden R., Ogden Canyon; Weber Co. Utah - Sept. 1928

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species S. c. utah

Locality Utah & Lake

Field No. _____ Coll. by _____

Date of Coll. _____ Measurements by _____ Date _____

Jar No. _____ No. of Jars _____ No. of Spec. _____ Specimen No. _____

	1 ~~Ogden R. Utah~~	2 ~~Ogden~~	3 Sevier R.	4 - Provo R. 1934 - Tanner			
Standard L	appr. 120		173	285			
Body D							
Head L							
Head D							
Head W							
Least interorbital bony W							
Occiput to snout tip							
Snout L							
Orbit L							
Upper Jaw L							
Dorsal origin to snout tip							
Depressed dorsal to insertion of adipose	26	26		26			
Dorsal origin to anal o							
Dorsal fin basal L							
Dorsal fin depressed L							
Adipose fin depressed L							
Caudal peduncle D							
Caudal peduncle L							
Vertebrae							
First arch gill rakers (upper)	8	7					
(lower)	12	12					
(total)	20	19					
Basibranchial teeth			yes				
Branchiostegal rays (right)			8				
(left)							
Pectoral fin rays			13				
Pelvic fin rays			9				
Scales in lateral line			122				
Scales above lateral line	39	37	43	46			
2 rows	143	177		173			

#1 = typical "utah" - fine scaled, small spots - above lat. line - most abundant caudally.
- may be - "tchoensis" effect

#2 - larger more abundant spots - well scattered over body.
- a Bear Lk. specimen coll. 1930 almost spotless - few spot on dorsal surface

3 - Sevier R. - B.Y.U. 4000-62 -
1941 - Coll. Tanner
spots - sparse - ~~faint~~ large
mostly on caudal
and above l. l.

2 specimens - B.Y.U. 3191 - 3192 - Provo R.
Trutta * above Utah L.
- large spotted fish.
G.

4 - B.Y.U. 3999
- Provo R. - 1934 - large spots - over body onto abdomen - abundant spots - most on caudal peduncle - but also over all body & 2 on anal fin.

CHARACTER ANALYSIS SHEET

Species S. c. plecriticus

Locality

~~Field No.~~ USNM 63167 Coll. by

Date of Coll. ~~Measurements~~ conversions by Middleton Date 3-6-59

Jar No. ____ No. of Jars ____ No. of Spec. 6 Specimen No.

Measurements in thousands of standard length

	1	2					
Standard L	147	140	25	— 70 mm.			
Body D	218	221 ✓					
Head L	258	257 ✓					
Head D	156	164 ✓					
Head W	116	114 ✓					
Least interorbital bony W	61	57 ✓					
Occiput to snout tip	177	171 ✓					
Snout L	54	57 ✓					
Orbit L	68	71 ✓					
Upper Jaw L	136	136 ✓					
Dorsal origin to snout tip	524	514 ✓					
Depressed dorsal to insertion of adipose	170	164 ✓					
Dorsal origin to anal o	306	321 ✓					
Dorsal fin basal L	109	107 ✓					
Dorsal fin depressed L	177	193 ✓					
Adipose fin depressed L	68	79 ✓					
Caudal peduncle D	102	93 ✓					
Caudal peduncle L	156	157 ✓					

-Taken from Tanner (1933) - The Genus Salmo in Utah - Proc. Utah Acad. Sci. vol. X p. 164.

CHARACTER ANALYSIS SHEET

Species Salmo clarki utah

Locality 1 = Utah Lake 6 = Bear Lk. 2-5 = Provo R.

Field No. _____ Coll. by _____

Date of Coll. ? Measurements by Tanner Date 1933

Jar No. ____ No. ~~of Jars~~ ____ No. of Spec. 6 ~~Specimen No.~~ _____

	1	2	3	4	5	6
Standard L L. of Body?	282	114	132	150	141	237
Body D	70	26	29	34	30	55
Head L	67	26	32	35	33	58
Head D						
Head W						
Least interorbital bony W						
Occiput to snout tip	15	17	22	25	23	39
Snout L X	12	3	5	4	5	8
Orbit L X	10	6	7	8	7	10
✓ Upper Jaw L						
Dorsal origin to snout tip	135	51	61	75	71	117
✓ Depressed dorsal to insertion of adipose						
Dorsal origin to anal o						
Dorsal fin basal L	38	13	16	16	15	30
Dorsal fin depressed L						
Adipose fin depressed L						
Caudal peduncle D	38	10	12	14	8	22
Caudal peduncle L	48	18	22	25	26	45
✓ Vertebrae						
First arch gill rakers (upper)						
(lower)						
(total)						
Basibranchial teeth						
Branchiostegal rays (right)						
(left)						
Pectoral fin rays						
Pelvic fin rays						
✓ Scales in lateral line						
✓ Scales above lateral line	47	39	31	43	43	44
scales lat. series	192	177	205	193	185	189

VIII-3-61

Sigler's paper

Page ____ of ____ pages

CHARACTER ANALYSIS SHEET

Species *Salmo clarki*

Locality Idaho; Ck. trib. to Bear Lake, Fish Haven

~~Field~~ Stanford No. 53653 Coll. by Snyder & Hubbs

Date of Coll. 8-25-15 Measurements by Behnke Date 10-17-60

Jar No. _____ No. of Jars _____ No. of Spec. _____ Specimen No. _____

	1	2	3	4	5	6	7
Standard L	198	121	122	104	115	103	96
Body D	45	29	27				
Head L	55	33	33				
Least interorbital bony W	14						
Occiput to snout tip	37						
Snout L	12						
Orbit L	13						
Upper Jaw L	30	17	17				
Dorsal origin to snout tip	100	59	58				
Dorsal fin basal L	25		18				
Dorsal fin depressed L	48	27	26				
Adipose fin depressed L	19		10				
Caudal peduncle D	23	13	12				
Caudal peduncle L	34	20	21				
Vertebrae							
First arch gill rakers (upper)	7	7	7	7	7	6	6
(lower)	12	12	12	12	11	12	12
(total)	19	19	19	19	18	18	18
Branchiostegal rays (right)	10	12	11	11	11	9	11
(left)	10	12	11	12	11	11	11
Pectoral fin rays	15	14	15	14	15	—	15
Pelvic fin rays	9	9	9	9	9	9	9
Scales in lateral line	127	120	123				
Scales above lateral line	42	44	39	42	37	38	40
Scales 2 rows above lat. line	178	176	158	170	162	157	178
Scales adipose to lat. line	32	28	26	26	28	—	27
basibranchial teeth	3 tiny	3	0		7-10	2 pr + 6	4

Only one large specimen, however, it shows large, round, evenly distributed spots over entire body; onto head and ventrally between pelvic & anal fins, also ventrally between anal fin & tail. Spots on dorsal, adipose, & caudal fins. 2 small spots on anal fin. Externally, I would find it identical to S. c. henshawi (like Hucho)

- Gill rakers mainly vestigial; few near junction are bifurcated or knobbed

- only in largest specimen
- other gill rakers normal.

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo Clarki LOCALITY Wyoming Huff Creek (Bear River) R119 W T28N S34

COLLECTED BY Don Miller DATE 11-7-74

Cat. # _____ Measurements by Jay DATE 6-25

Specimen # Some head spotting

	1	2	3	4	5	6	7	8
Total L.	236	170	171	162	188	155	228	212
Standard L.	195	143	144	135	154	127	189	175
Body D								
Head L								
Oroit L								
Upper Jaw L								
Dors. Orig. to Snt. tip								
Dorsal fin basal L								
Dorsal fin depressed L								
Adip. fin depressed L								
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)	6	7 2nd	6	7 2nd	7 2nd	7 2nd	8	7
(lower)	12	11	12	13	12	13	12	13
(total)	18	18	18	20	19	20	20	20
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	33	40	43	41	41	42	40	41
Scales 2 rows above lat.	168	176	177	176	170	174	169	170
Pelvic fin rays	10	9	10	9	10	10	10	10
Pyloric caeca	41	50	42	46	43	41	45	38
Dentition	1	2	6	3	7	5	6	3

vert.

61	62	63
2	5	3

$\bar{X} = 62.1$

gillraker ct $\bar{x} = 19.1$

vert. scale ct $\bar{x} = 40.3$

horiz. scale ct $\bar{x} = 174.2$

caecal ct $\bar{x} = 42.8$

dentition $\bar{x} = 4.1$

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo Clarki LOCALITY Wyoming Huff Creek (Bear River) R119W T28N S34

COLLECTED BY Don Miller DATE 11-7-74

Cat. # _____ Measurements by Jay DATE 6-75

Specimen #

	9	10	11					
Total L.	160	162						
Standard L.	134	135						
Body D								
Head L								
Oroit L								
Upper Jaw L								
Dors. Orig. to Snt. tip								
Dorsal fin basal L								
Dorsal fin depressed L								
Adip. fin depressed L								
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)	7	7						
(lower)	12	12						
(total)	19	19						
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line	41							
Scales above lateral line	41	41						
Scales 2 rows above lat.	182	180						
Pelvic fin rays	10	9						
Pyloric caeca	43	39						
Dentition	5	3						
	5	3						

Pine Ck. - On Mt.
Wheeler Nev. - Introduced
(W. slope) from Bonneville Basin
-31 specimens
1958

+ 2 specimens - Lehman Ck.
1938 - ∴ E. slope Mt. Wheeler -
in Bonneville Basin.

	17	18	19	20	21	22	23	24	25	$\bar{x}$
Pine Crk 7-10/12-16, 1972			1	3	4	4	4	3	1	22.0
Hampton Crk 6-9/12-15, 1972				6	11	2	3			21.1
Goshute Crk. 6-8/11-14 1972	1	0	6	7	5	2				20.0

Goshute Crk

1972 sample

#18. 6/14 / 20	13. 7/13 / 20	5. 7/12 / 19	4. 6/13 / 19
11. 7/14 / 21	12. 7/13 / 20	19. 7/13 / 20	8. 7/13 / 20
16. 8/14 / 22	17. 6/13 / 19	10. 8/13 / 21	7. 6/13 / 19
20. 6/11 / 17	14. 8/14 / 22	2. 7/14 / 21	15 7/12 / 19
21. 7/14 / 21	6. 7/14 / 21	3. 7/13 / 20	1. 6/13 / 19
	9. 7/13 / 20		

17	18	19	20	21	22
1	0	6	7	5	2
	3	6			

$\bar{x}$ 20.0

upper early ~~rakers~~ have room for 1-3 more rakers

6-8 / 11-14

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo clarki Mt. Wheeler LOCALITY Trout Crk., Juab Co., NE of Gandy

COLLECTED BY H.B. Stafford DATE July 26, 1933

Cat. # UMMZ 191644 Measurements by Trail DATE 22 May 1973

Specimen #

	1	2							
Total L.	174	176							
Standard L.	147	149							
Body D									
Head L	44	40							
Oroit L									
Upper Jaw L	24	21							
Dors. Orig. to Snt. tip	75	75							
Dorsal fin basal L									
Dorsal fin depressed L	36	33							
Adip. fin depressed L	17	15							
Caudal peduncle D	18	16							
Caudal peduncle L	23	24							
Vertebrae	64	63	$\bar{x}$=62						
1st Arch gillrakers (up)	8	7							7.5
(lower)	14	12							13
(total)	22	19							20.5
Branchiostegal rays right	11	11							
(left)	12	11							11.5
Dorsal rays									
Anal rays									
Pectoral fin rays									
Scales in lateral line									
Scales above lateral line	36	40							38
Scales 2 rows above lat.	146	146							
Pelvic fin rays	9	9							
Pyloric caeca	37	41							39
Dentition	17-18	10							

Alizarin marked

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt Wheeler Cutthroat ~~LOCALITY~~ Recounted Conversion Summary

COLLECTED BY Frank Dodge DATE

Cat. # 10 Measurements by DATE June 1972

Specimen #	mill	Hendry's	Hendry's below barrier	x Hampton	x Goshute	x Pine	muncy	Pine Creek 1959	Pine Creek 1970
Total L.									
Standard L.									
Body D									
Head L	297.78	282.33	295.63	297.43	287.43 ~~295~~	295.1	286.26	294.4	305.9
Oroit L									
Upper Jaw L	149.39	145.74	149.54	147.86	143.97	145	144.89	172.6?	175.3
Dors. Orig. to Snt. tip	510.54	504.00	516.22	507.37	517.10	515	522.41	520.2	527.7
Dorsal fin basal L									
Dorsal fin depressed L	248.44	243.62	253.97	257.99	239.95	230	221.83	223.5	224.7
Adip. fin depressed L	119.62	94.41	89.30	107.82	93.75	92	89.91	94.3	90.3
Caudal peduncle D	122.77	128.44	123.13	128.98	120.44	119	121.75	112.9	
Caudal peduncle L	156.01	160.91	159.35	161.96	157.04	156	153.03	157.8	
Vertebrae									
1st Arch gillrakers (up)									
(lower)									
(total)	19.25	19.80	20.20	20.09	20.00	22.00	19.10		
Branchiostegal rays right									
(left)									
Dorsal rays									
Anal rays									
Pectoral fin rays									
~~Scales in lateral line~~	38.25	37.35	36.40	40.09	39.04	38.85	37.13		
Scales above lateral line									
Scales 2 rows above lat.	154.10	142.20	144.20	143.86	143.95	146.95	134.40	143.8	
Pelvic fin rays									
Pyloric caeca	42.20	36.10	30.40	32.09	36.42	33.55	36.26		
Dentition	13.25	23.50	12.60	27.27	28.57	27.30	8.66		

Snake Valley

	Dorsal Orig.	Dor. L.	Ad.	C. D.	C. L.	H. L	S. L.
Goshute	497.8	248.9	104.4	121.7	151.4	282.5	155.9
recount	517.1	240.0	93.8	120.4	157.0	287.4	144.0
Hampton	495.0	251.0	106.7	126.7	160.5	290.1	158.6
recount	507.4	252.0	107.8	129.0	162.0	297.4	147.9
Pine	513	230	91	117	156	294	145
recount							
Hendrys	489.4	255.1	94.8	127.2	156.3	279.8	154.6
recount							
Mill	502.4	248.5	119.7	123.2	155.9	295.5	156.3
recount	510.5	248.4	119.6	122.8	156.0	297.8	149.4
Muncy	522	222	90	122	153	286	145

Bonneville Sec. Utah

Birch Crk.		224.2		110.3	159.9	~~257.6~~	
Giraffe	469.4	230.9	102.4	99.5	155.3	257.6	130.4
Water Canyon	499	258	118	128	162	286	153
Asay	512	224	103	119	156	276	144

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species *Salmo clarki*

Locality *Pine Creek, Nevada (White Pine Co.)*

Field No. *GBS-1* Coll. by *Gard, Behnke, Siegrist*

Date of Coll. *9-10,11-58* ~~Measurements~~ conversions by *Middleton* Date *3/23/59*

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No. ____

	N	Range	Mean	$S.D.^2$	S.D.	C.D.	SEM
Standard L	31	112-197	146.5				
Body D *	31	237-271	253.6				
Head L *	31	266-321	294.9				
Head D	31	172-195	185.7				
Head W	31	131-163	148.5				
Least interorbital bony W	31	63-81	71.1				
Occiput to snout tip	31	185-214	198.1				
Snout L	31	57-80	66.5				
Orbit L	31	67-85	76.5				
Upper Jaw L *	31	153-197	172.6	169.0	13.0		2.33
Dorsal origin to snout tip *	31	491-542	520.2				
Depressed dorsal to	31	116-160	139.3				
insertion of adipose							
Dorsal origin to anal o	31	326-355	341.3				
Dorsal fin basal L	31	120-155	137.1				
Dorsal fin depressed L *	31	203-248	223.5				
Adipose fin depressed L *	31	82-111	94.3				
Caudal peduncle D *'	31	98-120	112.9	23.530	4.851		0.871
Caudal peduncle L *'	31	147-173	157.8	42.715	6.536		1.174
Vertebrae	28	60-63	62.3	.641	.801		.151
First arch gill rakers (upper)	31	7-9	8.0				
(lower)	31	12-15	13.5				
(total)	31	19-23	21.5	.991	.995		.179
Basibranchial teeth	31	6-46	22.5				
Branchiostegal rays (right)	31	10-12	11.1	.317	.563		.101
(left)	31	10-12	11.3	.333	.577		.104
Pectoral fin rays	31	14-15	14.6				
Pelvic fin rays	31	8-10	9.3				
Scales in lateral line	30	115-125	119.0	6.45	2.54		1.47
Scales above lateral line	21	37-44	40.1	4.33	2.08		.454
2 rows	28	133-158	143.8				

Parr marks, accented by preservation.

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada {White Pine Co.}

Field No. GBS-1 Coll. by Gard, Behnke, Seegrist

Date of Coll. Sept. 10, 11, 58 Measurements by R. Behnke Date Sept. 22, 58

Jar No. 1 No. of Jars 1 No. of Spec. 31 ~~Specimen No.~~

	1	2	3	4	5	6	7
Standard L	143	148	130	112	135	142	135
Body D	35	37	31	28	33	35	35
Head L	41	42	37	31	37	40	39
Head D	27	28	25	20	25	26	25
Head W	22	21	20	16	20	21	20
Least interorbital bony W	10	11	9	8	10	10	9
Occiput to snout tip	27	30	26	22	27	28	27
Snout L	9	10	9	7	9	9	9
Orbit L	11	11	10	8	10	11	11
Upper Jaw L	24	24	21	18	21	23	23
Dorsal origin to snout tip	75	77	66	58	71	73	70
Depressed dorsal to insertion of adipose	20	20	19	15	21	19	17
Dorsal origin to anal o	49	51	45	37	44	49	48
Dorsal fin basal L	19	22	18	15	17	21	19
Dorsal fin depressed L	31	35	30	25	28	34	31
Adipose fin depressed L	14	14	13	10	12	13	13
Caudal peduncle D	16	17	15	13	15	16	16
Caudal peduncle L	23	22	21	19	22	21	21
Vertebrae	63	61	62	62	62	62	62
First arch gill rakers (upper)	8	8	8	8	8	8	8
(lower)	14	13	14	13	14	13	14
(total)	22	21	22	21	22	21	22
Basibranchial teeth	16	26	9	20	21	31	23
Branchiostegal rays (right)	11	11	12	12	10	11	11
(left)	12	11	12	10	10	11	11
Pectoral fin rays	15	14	15	14	14	14	15
Pelvic fin rays	9	9	10	9	9	9	9
Scales in lateral line	119	116	120	121	118	116	120
Scales above lateral line	42	40	43	39	37	43	40
2 rows above	144	134	142	138	144	138	147

-scales deeply imbedded - difficult to get accurate counts

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada (White Pine Co.)

Field No. GBS-1 Coll. by Gard, Behnke, Seegrist

Date of Coll. Sept. 10-11, 58 ~~Measurements~~ conversions by Middleton Date 2-17-59

Jar No. 1 No. of Jars 1 No. of Spec. 31 Specimen No.

Measurements in thousands of standard length

	1	2	3	4	5	6	7
Standard L	143	148	130	112	135	142	135
Body D	245	250	238	250	244	246	259
Head L	287	284	285	277	274	282	289
Head D	189	189	192	178	185	183	185
Head W	154	142	154	143	148	148	148
Least interorbital bony W	70	74	69	71	74	70	67
Occiput to snout tip	189	203	200	196	200	197	200
Snout L	63	68	69	62	67	63	67
Orbit L	77	74	77	71	74	77	81
Upper Jaw L	168	162	161	161	155	162	170
Dorsal origin to snout tip	524	520	508	517	525	514	518
Depressed dorsal to insertion of adipose	140	135	146	134	155	134	126
Dorsal origin to anal o	343	344	346	330	326	345	355
Dorsal fin basal L	133	149	138	134	126	148	141
Dorsal fin depressed L	217	236	231	223	207	239	229
Adipose fin depressed L	98	95	100	89	89	92	96
Caudal peduncle D	112	115	115	116	111	113	118
Caudal peduncle L	161	149	161	169	163	148	155

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard et al

Date of Coll. 9-10,11-58 Measurements by Behnke Date Sept. 22, 58

Jar No. 1 No. of Jars 1 No. of Spec. 31 ~~Specimen No.~~

	8	9	10	11	12	13	14
Standard L	133	122	159	162	162	146	150
Body D	35	30	40	40	43	39	37
Head L	39	34	49	48	49	47	40
Head D	26	21	29	29	30	28	27
Head W	20	16	25	23	24	23	21
Least interorbital bony W	10	8	12	12	12	11	10
Occiput to snout tip	27	23	34	31	33	30	28
Snout L	8	7	12	10	11	10	9
Orbit L	11	9	13	11	13	12	10
Upper Jaw L	22	19	30	28	31	27	23
Dorsal origin to snout tip	71	61	84	85	83	77	75
Depressed dorsal to insertion of adipose	18	19	20	20	24	20	24
Dorsal origin to anal o	45	40	53	54	55	50	52
Dorsal fin basal L	18	16	24	21	21	20	18
Dorsal fin depressed L	30	27	37	35	35	33	32
Adipose fin depressed L	13	11	13	18	17	15	13
Caudal peduncle D	16	12	18	18	19	16	17
Caudal peduncle L	22	19	25	26	26	23	22
Vertebrae	62	62	63	62	63	63	63
First arch gill rakers (upper)	8	7	9	8	9	8	8
(lower)	14	13	13	14	13	14	14
(total)	22	20	22	22	22	22	22
Basibranchial teeth	24	28	22	25	24	21	22
Branchiostegal rays (right)	11	11	11	11	11	12	11
(left)	12	11	11	12	11	12	11
Pectoral fin rays	15	15	15	15	15	15	14
Pelvic fin rays	10	9	10	9	10	9	9
Scales in lateral line	115	120	120	121	117	123	119
Scales above lateral line	38	/	/	42	44	39	40
2 rows above	142	136±	133	156	143	151	148

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GB 5-1 Coll. by Gard, et. al.

Date of Coll. 9-10, 11, -58 ~~Measurements~~ conversions by Middleton Date 2-18-59

Jar No. 1 No. of Jars 1 No. of Spec. 31 Specimen No.

Measurements in thousands of standard length

	8	9	10	11	12	13	14
Standard L	133	122	159	162	162	146	150
Body D	263	246	251	247	265	267	246
Head L	293	278	308	296	302	321	266
Head D	195	172	182	179	185	192	180
Head W	150	131	157	142	148	157	140
Least interorbital bony W	75	66	75	74	74	75	67
Occiput to snout tip	203	188	214	191	204	205	186
Snout L	60	57	75	62	68	68	60
Orbit L	83	74	82	68	80	82	67
Upper Jaw L	165	156	188	173	191	185	153
Dorsal origin to snout tip	533	500	528	524	512	527	500
Depressed dorsal to insertion of adipose	135	156	126	123	148	137	160
Dorsal origin to anal o	338	328	333	333	339	342	346
Dorsal fin basal L	135	131	151	130	130	137	120
Dorsal fin depressed L	225	221	232	216	216	226	213
Adipose fin depressed L	98	90	82	111	105	103	87
Caudal peduncle D	120	98	113	111	117	109	113
Caudal peduncle L	165	156	157	160	160	157	147

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard et al

Date of Coll. Sept. 10-11-58 Measurements by Behnke Date 9-23-58

Jar No. 1 No. of Jars 1 No. of Spec. 31 ~~Specimen No.~~

	15	16	17	18	19	20	21
Standard L	162	158	149	140	121	197	162
Body D	39	42	37	34	31	50	44
Head L	45	49	46	40	37	61	51
Head D	28	30	28	25	22	36	30
Head W	22	24	23	19	18	30	25
Least interorbital bony W	11	12	10	9	8	16	12
Occiput to snout tip	30	32	29	26	25	38	33
Snout L	10	11	10	8	7	15	13
Orbit L	12	12	12	10	10	14	13
Upper Jaw L	26	29	28	22	20	36	32
Dorsal origin to snout tip	83	85	79	72	62	106	84
Depressed dorsal to insertion of adipose	24	19	19	20	14	31	20
Dorsal origin to anal o	57	54	49	48	43	68	53
Dorsal fin basal L	23	21	21	18	18	27	23
Dorsal fin depressed L	37	35	33	29	30	40	36
Adipose fin depressed L	15	15	16	13	11	19	15
Caudal peduncle D	17	19	17	15	14	23	19
Caudal peduncle L	25	26	24	22	18	32	25
Vertebrae	63	62	63	61	61	63	63
First arch gill rakers (upper)	8	7	8	8	8	8	8
(lower)	15	12	13	14	15	14	13
(total)	23	19	21	22	23	22	21
Basibranchial teeth	22	17	16	28	26	30	46
Branchiostegal rays (right)	11	11	12	11	11	11	10
(left)	12	11	12	12	11	12	11
Pectoral fin rays	15	15	15	15	15	15	15
Pelvic fin rays	10	9	8	9	10	9	10
Scales in lateral line	118	122	120	117	117	125	120
Scales above lateral line	38	/	37	38	/	/	/
2 rows above	142±	133	155	144	143±	139	142

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard, et. al

Date of Coll. 9-10, 11-58 ~~Measurements~~ conversions by Middleton Date 2-18-59

Jar No. 1 No. of Jars 1 No. of Spec. 31 Specimen No.

Measurements in thousandths of standard length

	15	16	17	18	19	20	21
Standard L	162	158	149	140	121	197	162
Body D	241	265	248	243	256	254	271
Head L	278	310	309	286	306	309	315
Head D	173	190	188	179	182	183	185
Head W	136	152	154	136	149	152	154
Least interorbital bony W	68	76	67	64	66	81	74
Occiput to snout tip	185	202	195	186	207	193	204
Snout L	62	70	67	57	58	76	80
Orbit L	74	76	81	71	83	71	80
Upper Jaw L	160	183	188	157	165	183	197
Dorsal origin to snout tip	512	537	530	514	512	537	518
Depressed dorsal to insertion of adipose	148	120	127	143	116	157	123
Dorsal origin to anal o	352	341	329	343	355	345	327
Dorsal fin basal L	142	133	141	129	149	137	142
Dorsal fin depressed L	228	221	221	207	248	203	222
Adipose fin depressed L	93	95	107	93	91	96	93
Caudal peduncle D	105	120	114	107	116	117	117
Caudal peduncle L	154	164	161	157	149	162	154

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard et. al.

Date of Coll. 9-10,11-58 Measurements by Behnke Date 9-23-58

Jar No. 1 No. of Jars 1 No. of Spec. 31 ~~Specimen No.~~

	22	23	24	25	26	27	28
Standard L	179	121	173	139	170	144	153
Body D	46	31	43	35	46	38	41
Head L	56	35	50	42	51	43	49
Head D	33	23	32	27	33	28	29
Head W	28	18	24	21	26	22	25
Least interorbital bony W	13	8	12	10	13	11	11
Occiput to snout tip	35	24	33	29	34	28	32
Snout L	13	7	11	10	12	10	12
Orbit L	13	10	13	11	13	10	13
Upper Jaw L	35	20	29	23	30	26	30
Dorsal origin to snout tip	94	64	85	74	88	74	83
Depressed dorsal to insertion of adipose	27	18	23	20	24	20	19
Dorsal origin to anal o	62	41	60	46	59	49	53
Dorsal fin basal L	23	16	23	18	24	20	23
Dorsal fin depressed L	38	27	37	30	39	33	37
Adipose fin depressed L	16	11	16	13	16	14	14
Caudal peduncle D	20	13	19	15	20	17	18
Caudal peduncle L	28	20	26	24	26	23	25
Vertebrae	63	63	63	62	—	62	62
First arch gill rakers (upper)	8	7	9	7	8	8	8
(lower)	14	14	14	12	13	12	14
(total)	22	21	23	19	21	20	22
Basibranchial teeth	23	19	32	13	12	6*	36
Branchiostegal rays (right)	11	11	12	11	12	11	10
(left)	11	11	12	11	11	11	11
Pectoral fin rays	14	14	14	14	15	14	14
Pelvic fin rays	10	9	9	9	9	9	9
Scales in lateral line	116	115	121	—	122	115	122
Scales above lateral line	—	40	42	—	40	38	—
2 rows above	148	155	146	—	145	139	146

*gill rakers possess teeth-like edges - some resemble basi bran. teeth.

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard, et. al.

Date of Coll. 9-10,11-58 ~~Measurements~~ Conversions by Middleton Date 2-19-59

Jar No. 1 No. of Jars 1 No. of Spec. 31 Specimen No.

Measurements in thousands of standard length

	22	23	24	25	26	27	28
Standard L	179	121	173	139	170	144	153
Body D	257	256	249	252	270	264	268
Head L	312	289	289	302	300	298	320
Head D	184	190	185	194	194	194	189
Head W	156	149	139	151	153	153	163
Least interorbital bony W	73	66	69	72	76	76	72
Occiput to snout tip	195	198	191	209	200	194	209
Snout L	73	58	64	72	71	69	78
Orbit L	73	83	75	79	76	69	85
Upper Jaw L	195	165	168	165	176	180	196
Dorsal origin to snout tip	525	529	491	532	517	514	542
Depressed dorsal to insertion of adipose	151	149	133	144	141	139	124
Dorsal origin to anal o	346	339	347	331	347	340	346
Dorsal fin basal L	128	132	133	129	141	139	150
Dorsal fin depressed L	212	223	214	216	229	229	242
Adipose fin depressed L	89	91	92	93	94	97	91
Caudal peduncle D	112	107	110	108	118	118	118
Caudal peduncle L	156	165	150	173	153	160	163

30, 31, sent to Utah Fish & Game Dept.

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek, Nevada

Field No. GBS-1 Coll. by Gard, et. al

Date of Coll. 9-10,11,-58 Measurements by Behnke Date Sept. 24, 1958

Jar No. 1 No. of Jars 1 No. of Specs. 31 ~~Specimen No.~~

	29	30	31				
Standard L	135	135	126				
Body D	34	32	33				
Head L	39	40	37				
Head D	25	25	24				
Head W	20	21	18				
Least interorbital bony W	9	10	8				
Occiput to snout tip	27	28	24				
Snout L	9	9	8				
Orbit L	10	10	10				
Upper Jaw L	23	24	22				
Dorsal origin to snout tip	70	70	67				
Depressed dorsal to insertion of adipose	20	19	20				
Dorsal origin to anal o	47	47	44				
Dorsal fin basal L	18	21	17				
Dorsal fin depressed L	30	32	28				
Adipose fin depressed L	12	13	11				
Caudal peduncle D	15	15	14				
Caudal peduncle L	22	20	19				
Vertebrae	—	60	—				
First arch gill rakers (upper)	8	8	8				
(lower)	13	14	13				
(total)	21	22	21				
Basibranchial teeth	22	11	27				
Branchiostegal rays (right)	11	11	12				
(left)	11	11	11				
Pectoral fin rays	14	15	15				
Pelvic fin rays	10	10	9				
Scales in lateral line	118	119	119				
Scales above lateral line	42	41	/				
2 rows above	154	—	—				

CHARACTER ANALYSIS SHEET

Species Salmo clarki

Locality Pine Creek Nevada

Field No. GBS-1 Coll. by Gard, et. al.

Date of Coll. 9-10, 11-58 ~~Measurements~~ conversions by Middleton Date 2-20-59

Jar No. 1 No. of Jars 1 No. of Spec. 31 Specimen No.

Measurements in thousands of standard length

	29	30	31				
Standard L	135	135	126				
Body D	252	237	262				
Head L	289	296	293				
Head D	185	185	190				
Head W	148	155	143				
Least interorbital bony W	67	74	63				
Occiput to snout tip	200	207	190				
Snout L	67	67	63				
Orbit L	74	74	79				
Upper Jaw L	170	178	174				
Dorsal origin to snout tip	518	518	531				
Depressed dorsal to insertion of adipose	148	141	159				
Dorsal origin to anal o	348	348	349				
Dorsal fin basal L	133	155	135				
Dorsal fin depressed L	222	237	222				
Adipose fin depressed L	89	96	87				
Caudal peduncle D	111	111	111				
Caudal peduncle L	163	148	151				

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species S. c. utah

Locality Nevada - Lehman Ck. - Mt. Wheeler - 8000 ft.

~~Field No.~~ Mich. 141701 Coll. by Ralph Kaufman

Date of Coll. VII-38 ~~Measurements~~ conversions by Middleton Date 3-23-59

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No. ____

	N	Range	Mean	S.D.^{2}	S.D.	C.D.	SEM
Standard L	2	152-162	157.0				
Body D	2	276-284	280.0				
Head L	2	276-290	283.0				
Head D	2	177-197	187.0				
Head W	2	145-154	149.5				
Least interorbital bony W	2	66-74	70.0				
Occiput to snout tip	2	191	191.0				
Snout L	2	59-62	60.5				
Orbit L	2	68-72	70.0				
Upper Jaw L	2	158-173	165.5	-			
Dorsal origin to snout tip	2	506	506.0				
Depressed dorsal to insertion of adipose	2	136-145	140.5				
Dorsal origin to anal o	2	346-368	357.0				
Dorsal fin basal L	2	142-145	143.5				
Dorsal fin depressed L	2	216-223	219.5	-			
Adipose fin depressed L	2	99-105	102.0				
Caudal peduncle D	2	118-123	120.5				
Caudal peduncle L	2	154-158	156.0				
Vertebrae	2	62	62.0	-			
First arch gill rakers (upper)	2	7-8	7.5				
(lower)	2	13	13.0				
(total)	2	20-21	20.5	-.50	.707		.500
Basibranchial teeth	2	17-20	18.5				
Branchiostegal rays (right)	2	10-11	10.5				
(left)	2	11	11.0				
Pectoral fin rays	2	14-15	14.5				
Pelvic fin rays	2	9	9.0				
Scales in lateral line	2	107-119	113.0	6.45	2.54		
Scales above lateral line	2	42	42.0	-			

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality Nevada - Lehman Ck. - Mt. Wheeler 8000 ft.

~~Field No.~~ Mich 141701 Coll. by Ralph Kaufman

Date of Coll. VII-38 Measurements by Behnke Date 12-10-58

Jar No. _____ No. of Jars _____ No. of Spec. 2 ~~Specimen No.~~ _____

	1	2					
Standard L	162	152					
Body D	46	42					
Head L	47	42					
Head D	32	27					
Head W	25	22					
Least interorbital bony W	12	10					
Occiput to snout tip	31	29					
Snout L	10	9					
Orbit L	11	11					
Upper Jaw L	28	24					
Dorsal origin to snout tip	82	77					
Depressed dorsal to insertion of adipose	22	22					
Dorsal origin to anal o	56	56					
Dorsal fin basal L	23	22					
Dorsal fin depressed L	35	34					
Adipose fin depressed L	17	15					
Caudal peduncle D	20	18					
Caudal peduncle L	25	24					
Vertebrae	62	62					
First arch gill rakers (upper)	7	8					
(lower)	13	13					
(total)	20	21					
Basibranchial teeth	17	20					
Branchiostegal rays (right)	10	11					
(left)	11	11					
Pectoral fin rays	14	15					
Pelvic fin rays	9	9					
Scales in lateral line	119	107					
Scales above lateral line	42	42					

cypris 148
2 rows above

- closely resemble the Pine Ck. forms on the other side of the Mtn. - perhaps this was the origin of the Pine Ck. stocks.

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality Nevada - Lehman Ck. Mt. Wheeler 8000 ft.

~~Field No.~~ Mich. 141701 Coll. by Ralph Kaufman

Date of Coll. VII-38 ~~Measurements~~ conversions by Middleton Date 2-25-59

Jar No. ____ No. of Jars ____ No. of Spec. 2 Specimen No. ____

Measurements in thousands of standard length

	1	2					
Standard L	162	152					
Body D	284	276					
Head L	290	276					
Head D	197	177					
Head W	154	145					
Least interorbital bony W	74	66					
Occiput to snout tip	191	191					
Snout L	62	59					
Orbit L	68	72					
Upper Jaw L	173	158					
Dorsal origin to snout tip	506	506					
Depressed dorsal to insertion of adipose	136	145					
Dorsal origin to anal o	346	368					
Dorsal fin basal L	142	145					
Dorsal fin depressed L	216	223					
Adipose fin depressed L	105	99					
Caudal peduncle D	123	118					
Caudal peduncle L	154	158					

W. Bonneville

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo clarki Locality Utah, Johnson Crk. trib. to Deep Crk.

Collected by F. H. Dodge Date April 12, 1971

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7	8
Total L.	164	164	213	209	179	169	153	144
Standard L	138	137	179	173	148	141	128	119
Body D								
Head L	37	36	51	51	42	38	35	32
Orbit L								
Upper Jaw L	18	19	30	29	22	20	19	17
Dors. Orig. to Snt. tip	69	69	89	82	80	73	66	60
Dorsal fin basal L								
Dorsal fin depressed L	30	33	40	38	34	32	29	27
Adip. fin depressed L	11	9	15	16	11	11	10	10
Caudal peduncle D	16	15	24	21	19	17	15	14
Caudal peduncle L	21	21	25	16	19	18	17	15
Vertebrae	ON BACK							
1st Arch gill rakers (up)	7	9	7	7	7	7	8	8
(lower)	12	13	12	13	11	12	12	12
(total)	19	22	19	20	18	19	20	20
Branchiostegal rays right	10	10	9	10	9	10	10	10
(left)	10	11	9	10	11	9	11	10
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	10	10	9	10	10	9	9	10
Scales in lateral line								
Scales above lateral line	38	30	37	36	33	34	31	28
Scales 2 rows above lat.	154	140	163	160	132	130	109	110
Scales 2 rows below lat.								
(around)								
Pyloric caeca	37	27	33	41	36	31	32	32
Dentition	1	0	8	2	0	6	0	0
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

VERTEBRAE N = 7 $\bar{X}$ = 61.6

60	61	62	63
1	3	1	2

18	19	20	21	22
2	3	4	0	1

19.5

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo clarki Locality Utah, Johnson Crk. trib. to Deep Crk.

Collected by F. H. Dodge Date April 12, 1971

Cat. # _____ Measurements by _____ Date _____

Specimen #	9	10						
Total L.	134	131						
Standard L	112	109						
Body D								
Head L	30	32						
Orbit L								
Upper Jaw L	17	16						
Dors. Orig. to Snt. tip	55	55						
Dorsal fin basal L								
Dorsal fin depressed L	25	26						
Adip. fin depressed L	9	8						
Caudal peduncle D	13	13						
Caudal peduncle L	16	15						
Vertebrae								
1st Arch gill rakers (up)	8	7						
(lower)	12	11						
(total)	20	18						
Branchiostegal rays right	9	10						
(left)	11	11						
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	10	10						
Scales in lateral line								
x Scales above lateral line	32	29						
x Scales 2 rows above lat.	116	112						
Scales 2 rows below lat.								
(around)								
Pyloric caeca	32	38						
Dentition	3 forback	0						
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

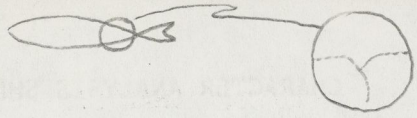
Species Salmo clarki subspl Mt. Wheeler-western Bonneville cutthroat Locality Nevada, White Pine Co., HamptonCrk. Introduced from Pine Crk.

Collected by Dodge and Cain Date 11/16/70

Cat. # Measurements by Schainost Date 12/15/70

Specimen #	1	2	3	4	5	6	7	8
Total L.	155	121	117	135	139	116	126	124
Standard L	128	99	98	114	115	96	104	103
Body D								
Head L	36	29	28	31	34	29	29	31
Orbit L								
Upper Jaw L	20	16	15	17	19	15	15	17
Dors. Orig. to Snt. tip	63	50	49	58	58	51	50	53
Dorsal fin basal L								
Dorsal fin depressed L	31	23	22	24	27	21	24	22
Adip. fin depressed L	12	10	10	10	12	10	8	11
Caudal peduncle D								
Caudal peduncle L								
Vertebrae	ON BACK							
1st Arch gill rakers (up)	7	7	8	7	7	7	7	8
(lower)	14	13	12	13	13	14	13	13
(total)	21	20	20	20	20	21	20	21
Branchiostegal rays right	11	11	10	11	10	10	10	11
(left)	11	11	11	11	11	11	11	12
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9	9	10	9	9	9	9
Scales in lateral line								
Scales above lateral line	39	40	39	41	40	40	44	43
Scales 2 rows above lat.	142	148	147	153	141	157	152	156
Scales 2 rows below lat.								
(around)								
Pyloric caeca	35	32	35	34	29	36	32	36
Dentition	29	27	19	17	19	25	24	18
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

Modification of the posterior lateral line



fish that do not have it 4

fish with only a slight dip in the l.l. at this point. 3

fish that definitely have it: left 1 right 1 both sides 1

Vertebrae N = 10 $\bar{x}$ = 61.4

59	60	61	62	63
1	0	4	4	1

Gill rakers

20	21
5	5

N = 10 $\bar{x}$ = 20.5

Branchiostegal rays

R: N = 10 Range = 10-11 $\bar{x}$ = 10.6

L N = 10 Range = 11-12 $\bar{x}$ = 11.1

Pelvic fin rays

N = 10 Range = 9-10 $\bar{x}$ = 9.1

Scale

above l.l. N = 10 Range = 39-43 $\bar{x}$ = 41.0

lat. series. N = 10 Range = 141-157 $\bar{x}$ = 149.8

Dentition

N = 10 Range = 17-27 $\bar{x}$ = 21.9

Pyloric ceca

N = 10 Range = 29-36 $\bar{x}$ = 33.1

#1 is a mature female. The gut appears empty and has a greenish cast in the area of the pyloric ceca.

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo clarki subsp. Mt. Wheeler-western Bonneville cutthroat Locality Nevada, White Pine Co., Hanpton Crk. Introduced from Pine Crk.

Collected by Dodge and Cain Date 11/16/70

Cat. # _____ Measurements by _____ Date _____

Specimen #	9	10						
Total L.	132	176						
Standard L	109	147						
Body D								
Head L	34	46						
Orbit L								
Upper Jaw L	19	25						
Dors. Orig. to Snt. tip	57	77						
Dorsal fin basal L								
Dorsal fin depressed L	25	35						
Adip. fin depressed L	13	15						
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gill rakers (up)	8	6						
(lower)	13	15						
(total)	21	21						
Branchiostegal rays right	11	11						
(left)	11	11						
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9						
Scales in lateral line								
Scales above lateral line	41	43						
Scales 2 rows above lat.	150	152						
Scales 2 rows below lat.								
(around)								
Pyloric caeca	30	32						
Dentition	17	22						
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES S. clarki (MT. WHEELER) LOCALITY NEVADA WHITE PINE CO. HAMPTON CRK. INTRO FROM PINE CRK.

COLLECTED BY DODGE AND CAIN DATE 11/16/70

Cat. # _____ ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	1	2	3	4	5	6	7	8
Total L.								
Standard L.	128	99	98	114	115	96	104	103
Body D								
Head L	281	292	285	271	295	302	278	300
Oroit L								
Upper Jaw L	156	161	153	149	165	156	144	165
Dors. Orig. to Snt. tip	492	505	500	508	504	531	480	514
Dorsal fin basal L								
Dorsal fin depressed L	242	232	224	210	234	218	230	213
Adip. fin depressed L	93	101	102	87	104	104	76	106
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES S. clarki (MT. WHEELER) LOCALITY NEVADA, WHITE PINE, CO. HAMPTON CRK. INTRO. FROM PINE CRK.

COLLECTED BY DODGE + CAIN DATE 11/16/70

Cat. # _____ ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	9	10		conversion Ave.				
Total L.								
Standard L.	109	147		292.7				
Body D								
Head L	311	312		292.7				
Oroit L								
Upper Jaw L	174	170		159.3				
Dors. Orig. to Snt. tip	522	523		507.9				
Dorsal fin basal L								
Dorsal fin depressed L	229	238		227.1				
Adip. fin depressed L	119	102		99.4				
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

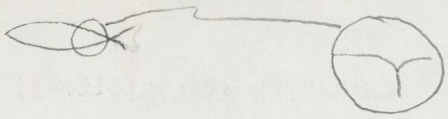
Species Salmo clarki subsp. Mt. Wheeler-western Bonneville cutthroat Locality Nevada, White Pine Co., Goshute Crk. Introduced from Pine Crk.

Collected by Dodge and Cain Date 11/16/70

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7	8
Total L.	164	161	160	161	161	146	151	159
Standard L	137	135	136	135	134	120	125	133
Body D								
Head L	38	36	37	37	36	35	35	37
Orbit L								
Upper Jaw L	21	20	19	20	19	18	19	19
Dors. Orig. to Snt. tip	70	69	68	67	67	64	65	68
Dorsal fin basal L								
Dorsal fin depressed L	33	28	28	31	30	28	28	30
Adip. fin depressed L	13	12	13	13	13	11	13	12
Caudal peduncle D								
Caudal peduncle L								
Vertebrae	ON BACK							
1st Arch gill rakers (up)	7	6	7	7	7	7	7	7
(lower)	12	14	14	14	12	14	13	13
(total)	19	20	21	21	19	21	20	20
Branchiostegal rays right	12	11	11	11	11	11	11	10
(left)	12	11	11	11	12	12	10	11
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	10	9	9	9	10	10	9	9
Scales in lateral line								
Scales above lateral line	42	39	41	42	38	39	40	40
Scales 2 rows above lat.	135	135	145	160	139	136	144	142
Scales 2 rows below lat.								
(around)								
Pyloric caeca	31	35	37	34	35	37	33	33
Dentition	13	17	25	14	15	11	22	22
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

Modification of the posterior lateral line



fish that do not have it: 3

fish that definitely have it:	left	right	both sides
	1	3	3

Vertebrae N=10 $\bar{x}$= 62.3

62	63	64
8	1	1

Gill Rakers

19	20	21
2	5	3

N=10 $\bar{x}$ = 20.1

Branchiostegal rays

R N=10 Range = 10-12 $\bar{x}$ = 10.9
L N=10 Range = 10-12 $\bar{x}$ = 11.3

Pelvic fin rays

N=10 Range = 9-10 $\bar{x}$ = 9.3

Scales

Above l.l. N=10 Range = 38-42 $\bar{x}$ = 40.2
lat. series N=10 Range = 135-160 $\bar{x}$ = 143.1

Dentition

N=10 Range = 11-30 $\bar{x}$ = 18.8

Pyloric ceca

N=10 Range = 31-37 $\bar{x}$ = 34.6

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo clarki subsp. Mt. Wheeler-western Bonneville cutthroat Locality Nevada, White Pine Co., Goshute Crk. Introduced from Pine Crk.

Collected by Dodge and Cain Date 11/16/70

Cat. # _____ Measurements by _____ Date _____

Specimen #	9	10						
Total L.	171	158						
Standard L	143	132						
Body D								
Head L	40	37						
Orbit L								
Upper Jaw L	22	20						
Dors. Orig. to Snt. tip	72	66						
Dorsal fin basal L								
Dorsal fin depressed L	33	31						
Adip. fin depressed L	13	12						
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gill rakers (up)	7	6						
(lower)	13	14						
(total)	20	20						
Branchiostegal rays right	11	10						
(left)	12	11						
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9						
Scales in lateral line								
Scales above lateral line	41	40						
Scales 2 rows above lat.	140	155						
Scales 2 rows below lat.								
(around)								
Pyloric caeca	34	37						
Dentition	30	19						
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES S. clarki (MT. WHEELER) LOCALITY NEVADA, WHITEPINE CO. GOSHUTE CRK INTRO FROM PINE CRK.

COLLECTED BY DODGE + CAIN DATE 11/16/70

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	1	2	3	4	5	6	7	8
Total L.								
Standard L.	137	135	136	135	134	120	125	133
Body D								
Head L	277	266	272	274	268	291	280	278
Oroit L								
Upper Jaw L	153	148	139	148	141	150	152	142
Dors. Orig. to Snt. tip	510	511	500	496	500	533	520	511
Dorsal fin basal L								
Dorsal fin depressed L	240	207	205	229	223	233	224	225
Adip. fin depressed L	94	88	95	96	97	91	104	90
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES S. clarki (MT. WHEELER) LOCALITY NEVADA, WHITE PINE CO., GOSHUTE CRK. INTRO FROM PINE CRK.

COLLECTED BY DODGE + CAIN DATE 11/16/70

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY/72

Specimen #	9	10		Ave				
Total L.								
Standard L.	143	132						
Body D								
Head L	279	280		276.5				
Oroit L								
Upper Jaw L	153	151		147.7				
Dors. Orig. to Snt. tip	503	500		508.4				
Dorsal fin basal L								
Dorsal fin depressed L	230	234		225.0				
Adip. fin depressed L	90	90		93.5				
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

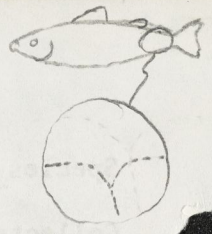
Species Salmo clarki subsp. Mt. Wheeler-western Bonneville cutthroat Locality Nevada, White Pine Co., Hendrys Crk. Extreme Headwaters (above previous collection)

Collected by Dodge Date 9/29/70

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7
Total L.	173	188	203	179	170	147	193
Standard L	146	157	174	151	140	125	164
Body D							
Head L	41	46	50	44	43	35	45
Orbit L							
Upper Jaw L	24	26	30	25	25	19	25
Dors. Orig. to Snt. tip	73	77	86	81	70	60	81
Dorsal fin basal L							
Dorsal fin depressed L	36	39	41	33	32	30	36
Adip. fin depressed L	13	15	14	14	13	11	15
Caudal peduncle D							
Caudal peduncle L							
Vertebrae	ON BACK						
1st Arch gill rakers (up)	7	7	8	8	8	7	8
(lower)	13	13	14	13	12	14	14
(total)	20	20	22	21	20	21	22
Branchiostegal rays right	11	11	11	11	10	11	10
(left)	11	11	11	11	11	10	9
Dorsal Rays							
Anal rays							
Pectoral fin rays							
Pelvic fin rays	9	9	9	9	9	9	9
Scales in lateral line							
Scales above lateral line	44	41	43	44	40	43	40
Scales 2 rows above lat.	156	146	175	153	148	153	156
Scales 2 rows below lat.							
(around)							
Pyloric caeca	41	38	46	40	36	39	33
Dentition	6	0	0	15	13	0	16
Anal fin base							
Anal fin depressed							
Dors. Origin - caudal							
P fin - snout							
P fin caudal							
Pre orbital - Post orbital							

None of these fish have the modification of the lateral line.



Vertebrae N = 6 $\bar{x}$ = 61.8

61	62
1	5

Gill rakers

20	21	22
3	2	2

$\bar{x}$ = 20.9

N = 7

Branchiostegal rays

R. N = 7 Range 10-11 $\bar{x}$ = 10.7

L. N = 7 Range 9-11 $\bar{x}$ = 10.6

Pelvic fin rays

N = 7 Rang = 9 $\bar{x}$ = 9

Scales

above ll. N = 7 Range = 41-44 $\bar{x}$ = 42.1

lat. series N = 7 Range = 146-175 $\bar{x}$ = 155.3

Dentition

N = 7 Range = 0-16 $\bar{x}$ = 7.1

Pyloric caeca

N = 7 Range = 33-46 $\bar{x}$ = 39.0

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES S. clarki (MT. WHEELER) LOCALITY NEVADA, WHITE PINE CO, HENDRYS CRK. EXTREME HEADWATERS (ABOVE PREVIOUS COLL.)

COLLECTED BY DODGE DATE 9/29/70

Cat. # _____ Measurements by ROSCOE DATE MAY 1972

Specimen #	1	2	3	4	5	6	7	
Total L.								
Standard L.	146	157	174	151	140	125	164	
Body D								
Head L	280	292	287	291	307	280	274	
Oroit L								
Upper Jaw L	164	165	172	165	178	152	152	
Dors. Orig. to Snt. tip	500	490	494	536	500	480	493	
Dorsal fin basal L								
Dorsal fin depressed L	246	248	235	218	228	240	219	
Adip. fin depressed L	89	95	80	92	92	88	91	
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT - Western - Bonneville Basin

Species Salmo clarkii ? Locality Nev., White Pine Co., Hendrys Crk.

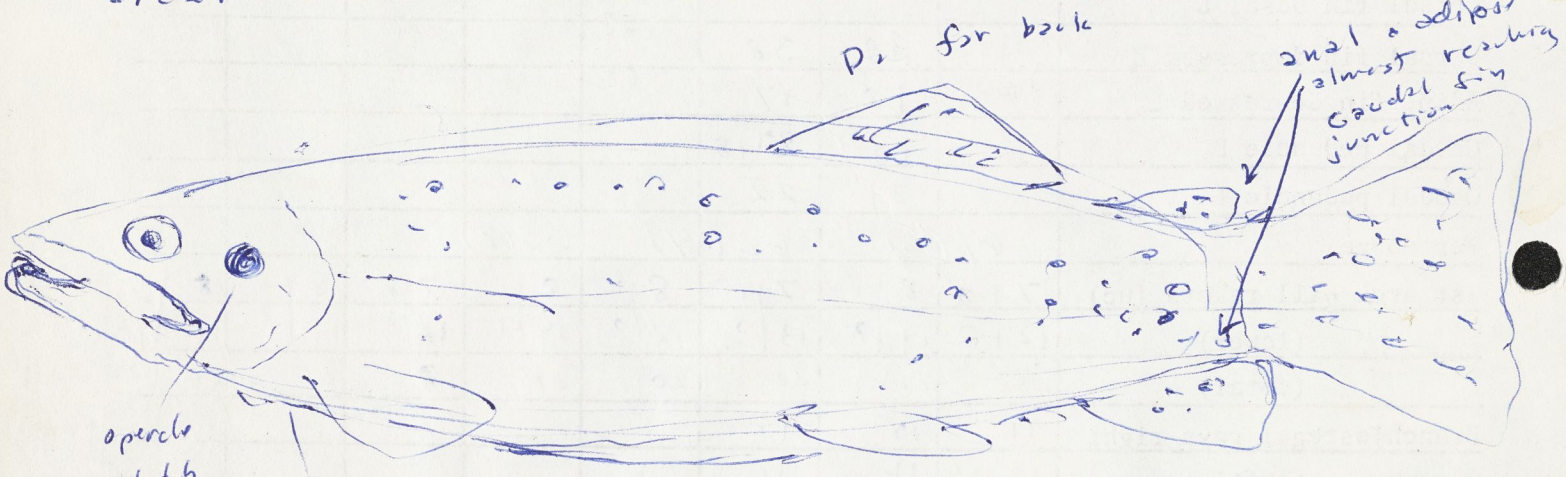
Collected by Frank Dodge, Nev. F.&G. Date June 9, 70

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7	8	9	10
Total L.	207	180	166	157	157	120	130	101	107	100
Standard L	176	150	138	131	131	99	109	85	88	82
Body D	51	43	43							
Head L	53	46	43							
Orbit L										
Upper Jaw L	35	28	27							
Dors. Orig. to Snt. tip	92	79	73							
Dorsal fin basal L										
Dorsal fin depressed L	41	39	38							
Adip. fin depressed L	18	18	17							
Caudal peduncle D	22	19	18							
Caudal peduncle L	27	24	22							
Vertebrae	61(3)		62(4)		63(2)					
1st Arch gill rakers (up)	7 | 0	8 | 1 (tiny)	7 | 1	8 | 1	8 | 1	7 | 1	8 | 1	8	7	7
(lower)	12 | 0	14 | 0	13 | 0	12 | 0	14 | 3	11 | 2	14 | 2	14	13	13
(total)	19	22	20	20	22	18	22	22	20	20
Branchiostegal rays right	11	10	10							
(left)	12	11	11							
Dorsal Rays	3(10)11	3,10(11)								
Anal rays	3(10)11/12	3,10(11)								
Pectoral fin rays	14	15								
Pelvic fin rays	9	9	9							
Scales in lateral line										
Scales above lateral line	aprx 41 38-45	ca. 42	-	41?	39	41	36	38		
Scales 2 rows above lat.	158-163 160	158-159	152-164 159	147	142	159	152	140		
Scales 2 rows below lat.										
(around)										
Pyloric caeca	47	41	42	39	47	35	42	35		
Dentition	0	0	0	1	1	0	0	0	0	6
Anal fin base				tiny, imbedded	tiny, deeply imbedded					
Anal fin depressed					(This	specimen	much	slimmer,		
Dors. Origin - caudal					with	shorter	head	than	others)	
P fin - snout										
P fin caudal										
Pre orbital - Post orbital										

these trout are very similar to Pine Crk. and Lehman Crk. - Hendrys Crk. on Bonneville side of Mt. Moriah (12,050 ft.) (White Pine Co. Nev.) - both Hendrys & Lehman trib. to Snake Valley - salt marshes of Deep Crk. arm of L. Bonneville -

- Nev. F. & G. has stocked rainbows, lower reaches of Hendrys Crk. - these taken from headwater area.



- basibranchial teeth, mainly absent, or very tiny and barely visible

18	19	20	21	22
1	1	4	0	4

18-22 (20.5)

61	62	63
3	4	2

$\bar{X} = 61.9$

248
183
126
9 | 557 | 61.7
54
17
9
80
67
10

Cæca 1, 2, 3, 5, 8 N = 8 Range: 35-47 $\bar{X}$ = 41.0

Scales Above ll. N = 7 Range: 36-42 $\bar{X}$ = 39.7

lat series N = 8 Range: 142-160 $\bar{X}$ = 152.1

Mt. Wheeler - West. Bonneville cutthroat

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT [Pine Crk]

Nevada, White Pine Co.

Species Salmo clarki Locality Pine Creek, Mt. Wheeler

Collected by Frank H. Dodge Date Recd: June, 1970

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7	8
Total L.	122	114	168	139	150	187	192	206
Standard L	102	93	142	118	125	158	166	174
Body D								
Head L	30	28	42	35	36	51	51	60
Orbit L								
Upper Jaw L	16	15	24	20	20	30	31	37
Dors. Orig. to Snt. tip	54	49	73	61	66	83	87	97
Dorsal fin basal L								
Dorsal fin depressed L	24	23	31	27	29	36	36	38
Adip. fin depressed L	9	8	12	11	12	16	14	15
Caudal peduncle D								
Caudal peduncle L								
Vertebrae	ON BACK							
1st Arch gill rakers (up)	9	8	7	7	8	7	9	8
(lower)	13	13	13	13	13	15	13	14
(total)	22	21	20	20	21	22	22	22
Branchiostegal rays right	10	11	10	11	11	11	11	10
(left)	11	11	10	11	11	11	12	11
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	10	10	9	9	9	9	9	9
Scales in lateral line								
Scales above lateral line	38	38	40	39?	40	—	39?	—
Scales 2 rows above lat.	142	133	148	133	143	—	150?	—
Scales 2 rows below lat.	will be extremely difficult to count							
(around)								
Pyloric caeca	43	32	47	45	30	42	32	39
Dentition	23	13	35	25	14	39	55+	52
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

Vertebrae

61	62	63	64
1	4	3	1

N = 9 $\bar{x}$ = 62.4

Gill rakers

20	21	22
2	4	4

N = 10 $\bar{x}$ = 21.2

Branchiostegal Rays

R N = 9 R = 10-11 $\bar{x}$ = 10.7

L N = 10 Range = 10-12 $\bar{x}$ = 11.1

Pelvic fin rays N = 10 Range = 9-10 $\bar{x}$ = 9.2

Pyloric caeca N = 10 Range = 30-47 $\bar{x}$ = 39.7

Scales

Above l l N = 8 Range = 37-42 $\bar{x}$ = 39.1

l at. series N = 7 Range = 133-150 $\bar{x}$ = 142.1

Dentition N = 10 Range = 13-55 $\bar{x}$ = 30.1

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES mt Wheeler LOCALITY Hendry's creek - Below Barrks, recounted

COLLECTED BY _____ DATE _____

Cat. # _____ Measurements by _____ DATE _____

Specimen #

	1	2	3	4	5	6	7	8
Total L.								
Standard L.	94	121	132	70	95			
Body D								
Head L	29	33	38	22	28	~~258.65~~	295.63	
Oroit L								
Upper Jaw L	14	19	20	10	14	~~132.73~~	149.54 ~~139.54~~	
Dors. Orig. to Snt. tip	49	64	67	37	47	~~454.03~~	516.22	
Dorsal fin basal L								
Dorsal fin depressed L	25	30	32	19	23	~~229.037~~	253.97	
Adip. fin depressed L	8	11	10	7	9	77.537	89.30	
Caudal peduncle D	12	14	15	10	11	~~106.322~~	123.13	
Caudal peduncle L	15	18	21	12	15	~~139.182~~	159.35	
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Mt. Wheeler Cutthroat LOCALITY Hendry's creek - below barrier Conversions

COLLECTED BY _____ DATE ~~1970~~ 1970

Cat. # _____ Measurements by _____ DATE _____

Specimen # 002

	001	002	003	004	005			
Total L.								
Standard L.							~~304.8~~	3
Body D								
Head L	297	322	285	323	287		~~151.2~~	302.8
Oroit L								
Upper Jaw L	159	152	157	161	127		51	151.2
Dors. Orig. to Snt. tip	500	533	503	529	489			510.8
Dorsal fin basal L								
Dorsal fin depressed L	255	296	240	279	255			265.0
Adip. fin depressed L	095	110	090	058	095			89.6
Caudal peduncle D	117	135	120	147	106			125.00
Caudal peduncle L	159	144	150	191	148			158.4
Vertebrae								
1st Arch gillrakers (up)	007	008	007	007	008			
(lower)	012	013	013	013	013			
(total)	019	021	020	020	021	20.20		
Branchiostegal rays right	011	011	011	011	011			
(left)	011	011	012	010	011	22.00		
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line	037	037	036	038	034	36.40		
Scales 2 rows above lat.	143	142	150	149	137	144.20		
Pelvic fin rays								
Pyloric caeca	028	040	022	031	031	30.40		
Dentition	003	017	030	012	001	12.60		

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Mt. Wheeler Cutthroat-hybrids

SPECIES Salmo Clarki LOCALITY Hendry's crk. below barrier White Pine Co, Nevada

COLLECTED BY Frank Dodge DATE 11 JUN 1970

Cat. # 6 Measurements by _____ DATE _____

Specimen # 5 Specimens	1	2	3	4	5			
Total L.	115	146	160	85	115			
Standard L.	94	118	133	68	94			
Body D								
Head L	28	38	38	22	27			
Oroit L			~~5~~	~~18~~				
Upper Jaw L	15	18	21	11	12			
Dors. Orig. to Snt. tip	47	63	67	36	46			
Dorsal fin basal L								
Dorsal fin depressed L	24	35	32	19	24			
Adip. fin depressed L	9	13	12	4	9			
Caudal peduncle D	11	16	16	10	10			
Caudal peduncle L	15	17	20	13	14			

VERTEBRAE

$N = 3$ $\bar{X} = 61.6$ $\frac{61 | 62}{1 | 2}$

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo clarki Locality Nevada, White Pine Co. Pine Creek, Mt. Wheeler

Collected by Frank H. Dodge ~~Date~~ Rcd June 1970

Cat. # _____ Measurements by _____ Date _____

Specimen #	9	10						
Total L.	185	166						
Standard L	160	140						
Body D								
Head L	50	42						
Orbit L								
Upper Jaw L	30	23						
Dors. Orig. to Snt. tip	86	73						
Dorsal fin basal L								
Dorsal fin depressed L	34	30						
Adip. fin depressed L	15	13						
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gill rakers (up)	7	8						
(lower)	14	13						
(total)	21	21						
Branchiostegal rays right	injured	11						
(left)	12	11						
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9						
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.	37?	42						
Scales 2 rows below lat.	—	146						
(around)								
Pyloric caeca	44	43						
Dentition	24	21						
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo clarki LOCALITY NEVADA WHITE PINE CO. PINECRK. MT. WHEELER

COLLECTED BY DODGE DATE 1970

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	1	2	3	4	5	6	7	8
Total L.								
Standard L.	102	93	142	118	125	158	166	174
Body D								
Head L	294	301	295	296	288	322	307	344
Oroit L								
Upper Jaw L	156	161	169	169	160	189	186	212
Dors. Orig. to Snt. tip	529	526	514	516	528	525	524	557
Dorsal fin basal L								
Dorsal fin depressed L	235	247	218	228	232	227	216	218
Adip. fin depressed L	88	86	84	93	96	101	84	86
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo clarki LOCALITY NEVADA, WHITE PINE CO., PINE CRK. MT. WHEELER

COLLECTED BY DODGE DATE 1970

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	9	10						
Total L.								
Standard L.	160	140	~~137.8~~					
Body D								
Head L	312	300	305.9					
Oroit L								
Upper Jaw L	187	164	175.3					
Dors. Orig. to Snt. tip	537	521	527.7					
Dorsal fin basal L								
Dorsal fin depressed L	212	214	224.1					
Adip. fin depressed L	93	92	90.3					
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

Mt. Wheeler (West. Bonneville cutthroat) Mill Crk.

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo ? Locality Nevada, White Pine Co., Bonneville Basin, to North Mill Creek,

Collected by Frank Dodge Date July 30, 1970

Cat. # Measurements by Date

Specimen #	1	2	3	4	5	6	7	8
Total L.	96	94	70	103	109	98	82	208
Standard L	80	77	58	85	98	80	68	175
Body D								
Head L	24	23	18	26	26	23	20	49
Orbit L								
Upper Jaw L	13	12	9	13	14	13	10	28
Dors. Orig. to Snt. tip	42	39	30	43	45	43	36	90
Dorsal fin basal L								
Dorsal fin depressed L	19	17	14	20	20	20	16	38
Adip. fin depressed L	8	7	5	7	8	9	6	18
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gill rakers (up)	9	7	too	8	8	8	7	7
(lower)	12	12	Small	11	13	12	11	12
(total)	21	19	—	19	21	20	18	19
Branchiostegal rays right	12	11	11	11	11	11	11	11
(left)	12	11	11	12	12	11	12	12
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9	9	9	9	9	9	9
Scales in lateral line								
Scales above lateral line	—	—	—	42	39	—	—	43
Scales 2 rows above lat.	—	—	—	150	160	—	—	169
Scales 2 rows below lat.								
(around)								
Pyloric caeca	45	44	40	45	40	39	43	51
Dentition	—			3+	15			27
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

Vertebrae

63	64
3	3

~~N = 6~~ ~~$\bar{x}$ = 63.5~~

recount 1973 N = 8

62	63	64
1	4	3

= 63.25

Gill rakers

18	19	20	21
1	3	3	2

N = 9 $\bar{x}$ = 19.7

Branchiostegal Rays

R N = 10 Range = 11 - 12 $\bar{x}$ = 11.2

L N = 10 Range = 11 - 12 $\bar{x}$ = 11.7

Pelvic fin rays N = 10 Range = 9 $\bar{x}$ = 9.0

Scales

Above l.l. N = 5 Range = 39 - 45 $\bar{x}$ = 42.0

lat. series N = 5 Range = 150-169 $\bar{x}$ = 161.0

Dentition N = 5 Range = 3-30 $\bar{x}$ = 19.8

Pyloric caeca N = 10 Range = 39-51 $\bar{x}$ = 43.2

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

Species Salmo Locality Nevada, White Pine Co., Bonneville Basin, to North Mill Creek,

Collected by FRANK DODGE Date July 30, 1970

Cat. # Measurements by Date

Specimen #	9	10						
Total L.	199	183						
Standard L	167	157						
Body D								
Head L	51	46						
Orbit L								
Upper Jaw L	30	26						
Dors. Orig. to Snt. tip	90	86						
Dorsal fin basal L								
Dorsal fin depressed L	34	35						
Adip. fin depressed L	17	16						
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gill rakers (up)	8	7						
(lower)	12	13						
(total)	20	20						
Branchiostegal rays right	11	12						
(left)	12	12						
Dorsal Rays								
Anal rays								
Pectoral fin rays								
Pelvic fin rays	9	9						
Scales in lateral line								
Scales above lateral line	45	41						
Scales 2 rows above lat.	159?	167						
Scales 2 rows below lat.								
(around)								
Pyloric caeca	40	45						
Dentition	30+	24						
Anal fin base								
Anal fin depressed								
Dors. Origin - caudal								
P fin - snout								
P fin caudal								
Pre orbital - Post orbital								

3
85
89
85
79
94
43.2

Pine Creek sample 1972

1. 8/13 — 21

2. 9/15 — 24 (2-3 counted as 1 common base, divided ray)

3. 9/14 — 23 ✓

4. 8/14 — 22

5. 7/13 — 20

6. 8/13 — 21

7. 8/13 — 21

8. 7/12 — 19

9. 8/13 — 21

10. 8/14 — 22

11. 7/13 — 20 ✓

12. 9/15 — 24 ✓

13. 9/16 — 25

14. 9/14 — 23

15. 8/14 — 22

16. 9/14 — 23

17. 8/15 — 23

18. 10/14 — 24

19. 7/13 — 20 ✓

20. 8/14 — 22

19	20	21	22	23	24	25
1	3	4	4	4	3	1

upper arch 7-10 N = 20 19-25 $\bar{x}$ = 22.0

lower arch 12-16 posterior rakers $\frac{1-5}{1-5}$ small - moderate

* small toothed patches on some specimens - usually at juncture of gill arches or on hypobranchial w/ alizarin stain - perhaps 2-3 would not be seen w/o alizarin - but mean would still be ca. 21.9

Hampton Crk. 1972 sample

only 4 basibranchial teeth

17. 8/13 — 21

8. 6/14 — 20

11. 8/14 — 22

2. 7/14 — 21

19. 7/14 — 21

13. 9/14 — 23

4. 7-8/13 — 20-21, first rakers 2 together

18. 8/15 — (22) 23, first 2 look as one

7. 14 — 21

3 6/14 — 20

21. 8/14 — 22

1. 8/15 — 23

16. 8/13 — 21

6. 7/14 — 21

5 7/13 — 20

22. 8/13 — 21

14. 8/13 — 21

9. 8/12 — 20

12. 7/13 — 20

20 7/13 — 20

15 8/13 — 21

10. 7/14 — 21

20	21	22	23
6	11	2	3

$\bar{x}$ 21.1

upper arch usually more for 1 or 2 more rakers

6 - 9 / 12 - 15

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo clarki LOCALITY NEVADA WHITE PINE CO. MILL CRK. MT. WHEELER

COLLECTED BY DODGE DATE JULY 30, 1970

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	1	2	3	4	5	6	7	8
Total L.								
Standard L.	80	77	58	85	98	80	68	175
Body D								
Head L	300	298	310	305	265	287	294	280
Oroit L								
Upper Jaw L	162	155	155	152	142	162	147	160
Dors. Orig. to Snt. tip	525	506	517	505	459	537	529	514
Dorsal fin basal L								
Dorsal fin depressed L	237	220	241	235	204	250	235	217
Adip. fin depressed L	100	90	86	82	81	112	88	102
✓ Caudal peduncle D								
✓ Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

CHARACTER ANALYSIS SHEET - COLORADO COOPERATIVE FISHERY UNIT

SPECIES Salmo clarki LOCALITY NEVADA, WHITE PINE CO. MILL CRK. MT. WHEELER

COLLECTED BY DODGE DATE JULY 30, 1970

Cat. # ~~Measurements~~ CONVERSIONS by ROSCOE DATE MAY 1972

Specimen #	9	10		Ave				
Total L.								
Standard L.	167	157						
Body D								
Head L	305	292		293.6				
Oroit L								
Upper Jaw L	179	165		157.9				
Dors. Orig. to Snt. tip	538	547		517.7				
Dorsal fin basal L								
Dorsal fin depressed L	203	222		226.4				
Adip. fin depressed L	101	101		94.3				
Caudal peduncle D								
Caudal peduncle L								
Vertebrae								
1st Arch gillrakers (up)								
(lower)								
(total)								
Branchiostegal rays right								
(left)								
Dorsal rays								
Anal rays								
Pectoral fin rays								
Scales in lateral line								
Scales above lateral line								
Scales 2 rows above lat.								
Pelvic fin rays								
Pyloric caeca								
Dentition								

S. C. Utah

Southern forms

Beaver R. - 8 specimens
Yarrow ?

Panguitch Lk. - 3 specimens
Yarrow - 1872

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species *S. c. virginalis*

Locality *Beaver R. Utah*

USNM *14144 +* ~~Field No.~~ *154829* Coll. by *H. C. Yarrow*

Date of Coll. _____ ~~Measurements~~ conversions by *Middleton* Date *3-24-59*

Jar No. _____ No. of Jars _____ No. of Spec. _____ Specimen No. _____

	N	Range	Mean	S.D.^{2}	S.D.	C.D.	SEM
Standard L	8	106-219	168.1				
Body D	8	226-261	247.6				
Head L	8	248-283	265.5				
Head D	8	151-182	165.0				
Head W	8	109-133	117.6				
Least interorbital bony W	8	55-66	60.4				
Occiput to snout tip	8	155-178	168.9				
Snout L	8	47-61	54.8				
Orbit L	8	59-73	65.9				
Upper Jaw L	8	132-167	146.6	119.	10.9		3.85
Dorsal origin to snout tip	8	493-530	511.1				
Depressed dorsal to insertion of adipose	8	111-179	155.4				
Dorsal origin to anal o	8	328-350	339.6				
Dorsal fin basal L	8	115-137	126.0				
Dorsal fin depressed L	8	197-207	203.5	19.7	4.44		1.57
Adipose fin depressed L	8	66-88	73.0				
Caudal peduncle D	8	104-127	112.4	65.1	8.07		2.85
Caudal peduncle L	8	155-176	163.4	51.4	7.17		2.53
Vertebrae	8	61-63	62.3	.503	.710		.251
First arch gill rakers (upper)	8	7-8	7.4				
(lower)	8	12-14	13.1				
(total)	8	20-21	20.5	.1286	.536		.189
Basibranchial teeth	7	2-19	8.6				
Branchiostegal rays (right)	8	10-12	11.1	.411	.641		
(left)	8	11-13	11.6	.554	.744		.263
Pectoral fin rays	8	14-16	15.0				
Pelvic fin rays	8	9-10	9.1				
Scales in lateral line	1	118	118				
Scales above lateral line	7	37-40	~~34.0~~ 38.9	1.48	1.22		.460

CHARACTER ANALYSIS SHEET

Species *S. c. virginalis*

Locality *Beaver R. Utah*

USNM ~~Field~~ No. *141 44* Coll. by *H. C. Yarrow*

Date of Coll. *no date* Measurements by *Behnke* Date *2-20-59*

Jar No. ____ No. of Jars ____ No. of Spec. *7* ~~Specimen No.~~ ____

	1	2	3	4	5	6	7
Standard L	198	219	165	157	142	186	165
Body D	50	53	43	41	36	24	40
Head L	56	55	45	43	38	28	41
Head D	32	34	30	26	24	16	28
Head W	24	26	22	18	16	12	18
Least interorbital bony W	13	13	10	10	8	7	9
Occiput to snout tip	34	34	29	28	25	18	26
Snout L	12	12	9	9	8	5	9
Orbit L	13	13	12	11	10	7	11
Upper Jaw L	33	30	25	24	21	14	23
Dorsal origin to snout tip	105	110	85	82	70	54	86
Depressed dorsal to insertion of adipose	22	36	26	26	22	19	24
Dorsal origin to anal o	65	75	57	55	48	36	55
Dorsal fin basal L	23	30	19	21	18	13	20
Dorsal fin depressed L	40	45	33	33	28	22	33
Adipose fin depressed L	13	15	12	11	11	8	11
Caudal peduncle D	21	23	19	20	17	12	18
Caudal peduncle L	32	36	29	26	22	17	28
Vertebrae	63	62	62	62	61	63	62
First arch gill rakers (upper)	7	7	7	7	8	8	7
(lower)	13	14	14	13	12	13	13
(total)	20	21	21	20	20	21	20
Basibranchial teeth	7	14	none seen	19	12	2	4
Branchiostegal rays (right)	11	11	10	11	11	12	12
(left)	11	11	11	12	12	13	12
Pectoral fin rays	15	14	15	15	15	16	16
Pelvic fin rays	9	9	9	9	9	9	9
Scales in lateral line	—	aprx. 118	—	—	—	—	—
Scales above lateral line	37	40	40	—	38	38	40

no evidence of teeth having been present

these specimens are characterized by larger spots than the Utah Lake-Provo Fish - but have a light base coloration as them.

- Spots both above & below lat. line - but more above.

CHARACTER ANALYSIS SHEET

Species *S. c. virginalis*

Locality

USNM ~~Field No.~~ 14144 Coll. by

Date of Coll. ~~Measurements~~ conversions by *Middleton* Date *3-6-59*

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No. ____

Measurements in thousands of standard length

	1	2	3	4	5	6	7
Standard L	198	219	165	157	142	106	165
Body D	253	242	261	261	253	226	242
Head L	283	251	273	273	268	264	248
Head D	162	155	182	165	169	151	170
Head W	121	119	133	114	113	113	109
Least interorbital bony W	66	59	61	64	56	66	55
Occiput to snout tip	172	155	176	178	176	170	158
Snout L	61	55	55	57	56	47	55
Orbit L	66	59	73	70	70	66	67
Upper Jaw L	167	137	152	153	148	132	139
Dorsal origin to snout tip	530	502	515	522	493	509	521
Depressed dorsal to insertion of adipose	111	164	158	165	155	179	145
Dorsal origin to anal o	328	342	345	350	338	339	333
Dorsal fin basal L	116	137	115	134	127	123	121
Dorsal fin depressed L	202	205	200	210	197	207	200
Adipose fin depressed L	66	68	73	70	77	75	67
Caudal peduncle D	106	105	115	127	120	113	109
Caudal peduncle L	162	164	176	165	155	160	170

CHARACTER ANALYSIS SHEET

Species S. c. virginalis

Locality Utah, Beaver R.

~~Field~~ USNM No. 154829 Coll. by H. C. Yarrow

Date of Coll. ? Measurements by Behnke Date 2-24-59

Jar No. ____ No. of Jars ____ No. of Spec. 1 Specimen No. ____

	8						
Standard L	193						
Body D	47						
Head L	51						
Head D	32						
Head W	23						
Least interorbital bony W	11						
Occiput to snout tip	32						
Snout L	10						
Orbit L	12						
Upper Jaw L	28						
Dorsal origin to snout tip	96						
Depressed dorsal to insertion of adipose	32						
Dorsal origin to anal o	66						
Dorsal fin basal L	26						
Dorsal fin depressed L	40						
Adipose fin depressed L	17						
Caudal peduncle D	20						
Caudal peduncle L	30						
Vertebrae	63						
First arch gillrakers (upper)	8						
(lower)	13						
(total)	21						
Basibranchial teeth	11						
Branchiostegal rays (right)	11						
(left)	11						
Pectoral fin rays	14						
Pelvic fin rays	10						
Scales in lateral line	/						
Scales above lateral line	39						

Larger - more evenly distrib. spots than northern forms.

CHARACTER ANALYSIS SHEET

Species *S. c. virginalis*

Locality

USNM ~~Field~~ No. 154829 Coll. by

Date of Coll. ~~Measurements~~ conversions by *Middleton* Date *3-6-59*

Jar No. ____ No. of Jars ____ No. of Spec. *1* Specimen No.

Measurements in thousands of standard length

	1						
Standard L	193						
Body D	243						
Head L	264						
Head D	166						
Head W	119						
Least interorbital bony W	57						
Occiput to snout tip	166						
Snout L	52						
Orbit L	62						
Upper Jaw L	145						
Dorsal origin to snout tip	497						
Depressed dorsal to insertion of adipose	166						
Dorsal origin to anal o	342						
Dorsal fin basal L	135						
Dorsal fin depressed L	207						
Adipose fin depressed L	88						
Caudal peduncle D	104						
Caudal peduncle L	155						

CHARACTER ANALYSIS SHEET

Page ____ of ____ pages

Species *Salmo clarki*

Locality *Panguitch Lake, Utah*

~~Field No.~~ USNM *15999* Coll. by *H. C. Yarrow*

Date of Coll. *Sept. 1872* ~~Measurements~~ conversions by *Middleton* Date *3-24-59*

Jar No. ____ No. of Jars ____ No. of Spec. ____ Specimen No. ____

	N	Range	Mean	S.D.^{2}	S.D.	C.D.	SEM
Standard L	3	101-166	134.3				
Body D	3	223-260	243.7				
Head L	3	296-301	298.0				
Head D	3	175-197	183.3				
Head W	3	127-138	131.3				
Least interorbital bony W	3	69-72	70.3				
Occiput to snout tip	3	199-218	207.0				
Snout L	3	66-70	68.3				
Orbit L	3	84-99	89.0				
Upper Jaw L	3	168-181	175.0	43.0	6.565		3.790
Dorsal origin to snout tip	3	486-542	511.0				
Depressed dorsal to insertion of adipose	3	89-106	93.0				
Dorsal origin to anal o	3	307-331	321.7				
Dorsal fin basal L	3	155-158	156.7				
Dorsal fin depressed L	3	260-277	269.3	74.335	8.622		4.978
Adipose fin depressed L	3	72-89	81.7				
Caudal peduncle D	3	102-113	108.0	31.0	5.568		3.215
Caudal peduncle L	3	155-158	156.7	2.335	1.528		.882
Vertebrae	3	58-60	59.0	1.0000	1.000		.577
First arch gill rakers (upper)	3	7	7.0				
(lower)	3	11-12	11.7				
(total)	3	18-19	18.7	.335	.578		.334
Basibranchial teeth							
Branchiostegal rays (right)	3	11	11.0	0	0		0
(left)	3	11-12	11.3	.335	.578		.334
Pectoral fin rays	3	14-15	14.3				
Pelvic fin rays	3	10	10.0				
Scales in lateral line	3	105-110	108.0	–			
Scales above lateral line	2	37-40	38.5	2.250	1.500		1.061
2 rows above	2	141-158	149.5				

Panguitch Lake in So. Utah - see Yarrow (1872-73 Rept. U.S. Fish Comm.)
- large jaws - long dorsals - low scale count - 10 pelvic rays
no basibranchial teeth

CHARACTER ANALYSIS SHEET

Page 1 of 1 pages.

Species Salmo clarkii

— These are from White R. Arizona - See Cope & Yarrow & data on Salmo apache in golden trout files.

Locality Panguitch Lake, Utah

USNM 15929

~~Field No.~~ ~~Panguitch Lk.~~ Coll. by H. C. Yarrow

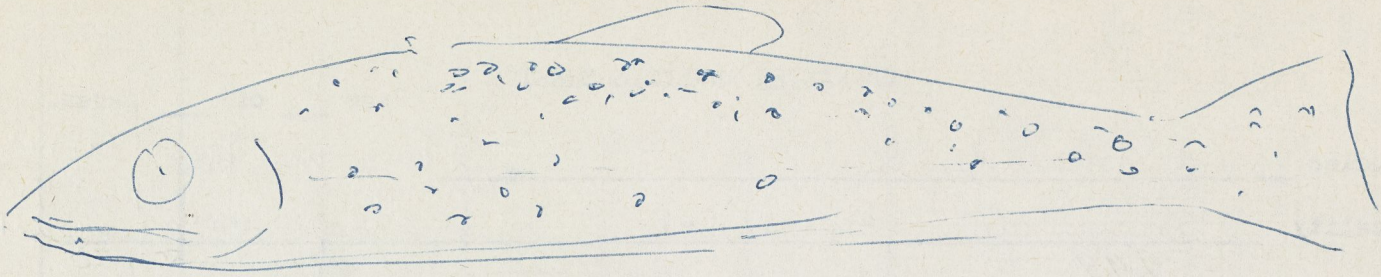
Date of Coll. Sept. 1872 Measurements by Behnke Date 2-19-59

Jar No. _____ No. of Jars _____ No. of Spec. 3 Specimen No. _____

	1	2	3				
Standard L	166	142	101				
Body D	37	37	25				
Head L	50	42	30				
Head D	29	28	18				
Head W	23	18	13				
Least interorbital bony W	12	10	7				
Occiput to snout tip	33	29	22				
Snout L	11	10	7				
Orbit L	14	12	10				
Upper Jaw L	30	25	17				
Dorsal origin to snout tip	90	69	51				
Depressed dorsal to insertion of adipose	15	15	9				
Dorsal origin to anal o	51	47	33				
Dorsal fin basal L	26	22	16				
Dorsal fin depressed L	45	37	28				
Adipose fin depressed L	12	12	9				
Caudal peduncle D	17	16	11				
Caudal peduncle L	26	22	16				
Vertebrae	58	60	59				
First arch gill rakers (upper)	7	7	7				
(lower)	12	11	12				
(total)	19	18	19				
Basibranchial teeth	none seen	- smooth basibranchials	none				
Branchiostegal rays (right)	11	11	11				
(left)	11	11	12				
Pectoral fin rays	14	14	15				
Pelvic fin rays	10	10	10				
Scales in lateral line	109	110	approx. 105 - many missing				
Scales above lateral line	—	37	40				
& rows above	141	158					

← Only #1 had membrane dissected - no evidence of teeth on any basibranchial

may have been lost.



- Spotting is somewhat larger, + esp. below the lat. line than in Utah, have - Provo R. forms.
- ~~Kill~~ Light, but not silvery.

CHARACTER ANALYSIS SHEET

Species *Salmo clarki*

Locality

~~Field No.~~ USNM 15999 Coll. by

Date of Coll. ~~Measurements~~ Conversions by *Middleton* Date *3-6-59*

Jar No. ____ No. of Jars ____ No. of Spec. *3* Specimen No.

Measurements in thousands of standard length

	1	2	3				
Standard L	166	142	101				
Body D	223	260	248				
Head L	301	296	297				
Head D	175	197	178				
Head W	138	127	129				
Least interorbital bony W	72	70	69				
Occiput to snout tip	199	204	218				
Snout L	66	70	69				
Orbit L	84	84	99				
Upper Jaw L	181	176	168				
Dorsal origin to snout tip	542	486	505				
Depressed dorsal to insertion of adipose	90	106	89				
Dorsal origin to anal o	307	331	327				
Dorsal fin basal L	157	155	158				
Dorsal fin depressed L	271	260	277				
Adipose fin depressed L	72	84	89				
Caudal peduncle D	102	113	109				
Caudal peduncle L	157	155	158				

(Do Not Use)

CHARACTER ANALYSIS SHEET

Page 1 of 1 pages

Species S. c. utah ? (probably introduction)

Seems like diffent fish (silvery)

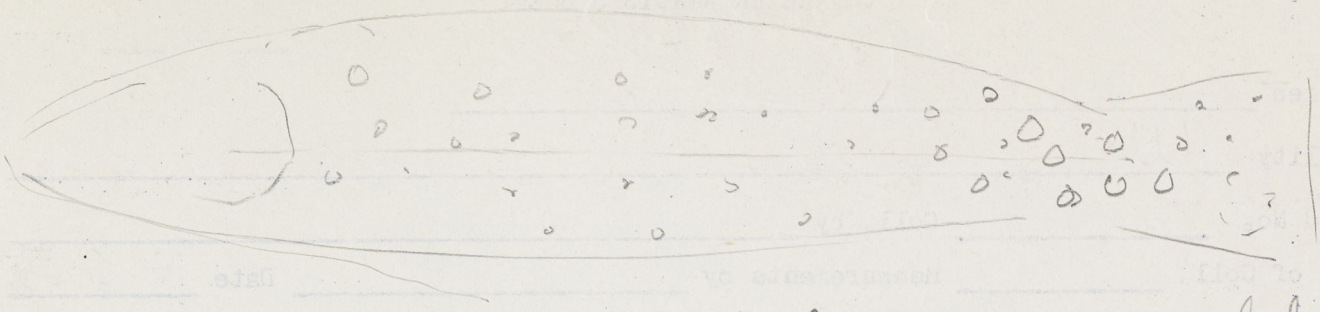
Locality Utah, Weber R.

USNM ~~Field~~ No. 7083 Coll. by McCarthy

Date of Coll. ? Measurements by Behnke Date 2-20-59

Jar No. ____ No. of Jars ____ No. of Spec. 4 ~~Specimen No.~~ ____

	1	2	3	4			
Standard L	163	153	116	115			
Body D	41	37	28	28			
Head L	45	39	32	30			
Head D	28	26	21	19			
Head W	22	18	13	13			
Least interorbital bony W	12	9	6	7			
Occiput to snout tip	30	26	21	21			
Snout L	9	8	7	6			
Orbit L	10	11	9	9			
Upper Jaw L	25	22	17	16			
Dorsal origin to snout tip	86	73	59	58			
Depressed dorsal to insertion of adipose	24	19	17	12			
Dorsal origin to anal o	55	51	39	37			
Dorsal fin basal L	20	19	15	13			
Dorsal fin depressed L	33	32	24	25			
Adipose fin depressed L	13	11	8	8			
Caudal peduncle D	18	17	11	12			
Caudal peduncle L	28	28	19	20			
Vertebrae	63	62	63	63			
First arch gill rakers (upper)	7	7	8	6			
(lower)	11	12	12	11			
(total)	18	19	20	17			
Basibranchial teeth	7	6	4	16			
Branchiostegal rays (right)	10	10	11	10			
(left)	11	11	12	10			
Pectoral fin rays	14	14	15	14			
Pelvic fin rays	9	10	9	9			
Scales in lateral line	121	120	—	—			
Scales above lateral line	39	41	37	39			



Large spots - largest on caudal pedunkle, except smallest specimen which is finely and sparsely spotted, and of a silvery sheen as in typical utah, of Utah Lake.

1, & 2 may be stomias

3 = utah

4 may be hybrid

Do not Use

CHARACTER ANALYSIS SHEET

Species S. c. utah

Locality

USNM ~~Field No.~~ 7083 Coll. by

Date of Coll. Measurements by Date 3-6-59

Jar No. No. of Jars No. of Spec. 4 Specimen No.

Measurements in thousands of standard length

	1	2	3	4			
Standard L	163	153	116	115			
Body D	251	242	241	243			
Head L	276	255	276	261			
Head D	172	170	181	165			
Head W	135	118	112	113			
Least interorbital bony W	74	59	52	61			
Occiput to snout tip	184	170	181	182			
Snout L	55	52	60	52			
Orbit L	61	72	78	78			
Upper Jaw L	153	144	147	139			
Dorsal origin to snout tip	527	477	509	504			
Depressed dorsal to insertion of adipose	147	124	147	104			
Dorsal origin to anal o	337	333	336	322			
Dorsal fin basal L	123	124	129	113			
Dorsal fin depressed L	202	209	207	217			
Adipose fin depressed L	80	72	69	70			
Caudal peduncle D	110	111	95	104			
Caudal peduncle L	172	183	164	174			

VIII-3-61

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CHARACTER ANALYSIS SHEET

Species Salmo clarkii utah

Locality Utah: Mammoth Ck., Servin Basin

~~Field~~ Stanford No. 53652 Coll. by Snyder & Hubbs

Date of Coll. 7-16-1915 Measurements by Behnke Date 10-14-60

Jar No. ____ No. of Jars ____ No. of Spec. 5 Specimen No. ____

	1	2	3	4	5		
Standard L	201	224	212	201	163		
Body D	53	60	57	56	43		
Head L	52	58	58	54	42		
Least interorbital bony W	14	15	15	15	11		
Occiput to snout tip	33	37	37	35	27		
Snout L	11	13	14	13	10		
Orbit L	12	13	13	13	11		
Upper Jaw L	28	32	33	30	23		
Dorsal origin to snout tip	103	116	111	101	82		
Dorsal fin basal L	26	30	26	22	21		
Dorsal fin depressed L	40	45	44	35	34		
Adipose fin depressed L	16	22	23	abberrant	13		
Caudal peduncle D	22	24	25	22	17		
Caudal peduncle L	32	34	36	34	27		
Vertebrae							
First arch gill rakers (upper)	9	9	8	8	7		
(lower)	12	14	12	13	12		
(total)	21	23	20	21	19		
Branchiostegal rays (right)	11	11	11	11	11		
(left)	11	11	11	11	11		
Pectoral fin rays	14	14	15	14	15		
Pelvic fin rays	9	9	9	9	9		
Scales in lateral line	120	118	125	122	123		
Scales above lateral line	37	38	38	38	39		
Scales 2 rows above lat. line	162	151	152	146	157		
Scales adipose to lat. line	24	25	26	25	25		
pesi branchial teeth	present	very 2	tiny 2 or 3	3	2		

These trout are the large spotted type. - restricted mostly above lateral line and more profuse caudally. A few spots on head, - Spots on dorsal, adipose & caudal fins, no other fins w/ spots. Gill rakers, long & as in ~~Pine~~ V. Pine Ck. Nevada population to which I believe these show a close affinity. The scale counts also indicate similarities.