



**Report Title:** Peace River Site C Development – Fisheries Habitat and Tributary Surveys  
1990 Studies

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**NOTE TO READER:**

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**During Stage 2 of the Site C Project, studies are underway to update many of the historical studies and information known about the project.**

**The potential Site C project, as originally conceived, will be updated to reflect current information and to incorporate new ideas brought forward by communities, First Nations, regulatory agencies and stakeholders. Today's approach to Site C will consider environmental concerns, impacts to land, and opportunities for community benefits, and will update design, financial and technical work.**

## **PART IV**

### **SUMMARY**

#### **4.1 CONCLUSIONS**

At the end of the second year of studies, a number of areas remained to be investigated. However, the information collected to date is sufficient to support some conclusions about habitats and fish populations in the Peace River tributaries as well as their enhancement potential.

##### **4.1.1 Habitat Inundation**

The composition of the aquatic habitats which will be flooded by the Site C development is summarized in Table 36 which will be revised and completed in a subsequent draft. In general, the inundated tributary habitat is similar to that in the adjoining reaches and losses of unique habitat types are minimal. The more significant losses include:

- Shallow glide habitats in the Moberly River which are used by spawning mountain whitefish and possibly Arctic grayling.
- spawning habitats used by rainbow trout in Maurice Creek.
- Marginal spawning habitats in Lynx Creek.

Lost habitats in Wilder, Cache, Halfway and Farrell systems appear to be less significant in terms of fish production.

##### **4.1.2 Fish Populations**

- a). The Plateau Tributaries, particularly Cache Creek, Wilder Creek, Farrell Creek, Cameron River and Ground Birch Creek appear to have very few sportfish and high densities of suckers and minnows. Production of sportfish in these systems seems to be limited by the high silt loads and instability in the spring followed by high water temperatures during summer and low flows during both summer and winter.
- b). Lynx Creek contains two populations of rainbow trout. In the upstream areas, which are inaccessible to Peace River fish, there is a resident population of small rainbow trout. In the lower reaches, juvenile rainbow trout appear to rear for up to three years before moving out to the Peace

Table 36  
Summary of habitat areas<sup>1</sup> to be inundated by a Site C reservoir.

Habitat type	Peace	Moberly <sup>4</sup>	Wilder <sup>4</sup>	Cache <sup>4</sup>	Halfway	Farrell <sup>4</sup>	Lynx <sup>4</sup>	Maurice <sup>4</sup>
Glide (<1 m) <sup>2</sup>	631				47.4			
Glide (>1 m)	20,500				518			
GRC <sup>3</sup> (<1 m)	-				-			
GRC (>1 m)	-				-			
Pool (<1 m)	902				8.38			
Pool (>1 m)	389				-			
Riffle	3,010				595			
Rapid & Cascade	-				-			
Slough	-				-			
<b>Total</b>	<b>25,400</b>				<b>1,170</b>			

1 - m<sup>2</sup> x 1,000 during September, 1989.

2 - Mean maximum depth.

3 - Glide riffle complex. Individual features too small to separate at survey scale.

4 - Revisions required. Will be included in final draft.

River mainstem. Habitat capacity in this area appears to be quite limited due in part, to the large amounts of silt flowing out of Brenot Creek.

- c). Maurice Creek contained the highest densities of rainbow trout of all the tributaries examined and appeared to be the most important spawning area for rainbow trout from the Peace River. During the spring, the system was also used by lake whitefish, mountain whitefish, northern pike, and Arctic grayling. No fish were found above a series of falls located 3 - 7 km from the mouth.
- d). Mature mountain whitefish were captured from the Moberly River in early October where few adults had been caught previously in early September. In addition, juvenile Arctic grayling were captured although few adults were observed. The Moberly River appears to be an important spawning area for these species. Moderate densities of Northern pike were found in Reaches 3 and 5.
- e). In early June, an initial study of the Moberly River was conducted around the mouth to determine if concentrations of spawning sportfish were accumulating in preparation to move upstream and spawn. Only mountain whitefish and small numbers of Arctic grayling, northern pike, burbot and kokanee were captured.

No accumulations of spawning sportfish were found within the river during June. Reach 1 appeared to be extremely unstable and silty and not very suitable as spawning habitat for sportfish. The only sportfish that were sampled from Reach 1 were small numbers of juvenile mountain whitefish and one bull trout. Reach 2 appeared to have more suitable habitat. In this reach large concentrations of young of the year mountain whitefish were found in low velocity habitat supporting earlier suggestions that this species probably utilizes this reach for spawning in the fall. The reach may also be used for spawning by Arctic grayling as a four year old adult and a few juveniles were captured in the few sites sampled. From this and previous studies it appears that the only Peace River sportfish that use the Moberly River as spawning habitat are mountain whitefish and perhaps Arctic grayling. Rainbow and walleye not been found below the lake although there are reports of rainbow trout in the headwaters (N.E. Down, MOE, pers. comm.).

- f). Mountain whitefish were the most prevalent species in the five Halfway River tributaries that were sampled in August. The largest systems, the

Graham River, Chowade River, and Cypress Creek, appear to be important habitat for spawning and the rearing of juveniles and adults. Although the two smallest systems, Blue Grave and Horseshoe creeks, contained high densities of juveniles in the lower reaches, the lack of young of the year suggests that these systems do not provide significant spawning habitat. Older juveniles from other systems possibly move into the lower reaches to rear in these two small creeks.

- g). Blue Grave and Horseshoe Creeks appear to provide spawning and rearing habitat for rainbow trout as moderate densities of juveniles were captured at all the sites sampled. The larger systems, particularly the Graham and Chowade systems, provide foraging habitat for the adults and possibly little spawning habitat as no juveniles were observed.
- h). Bull trout were found in all the systems except Cypress Creek. Blue Grave and Horseshoe Creek appear to provide spawning for this species as significant numbers of juveniles were captured. Adults were also sampled from the upper site on Blue Grave Creek. Adults were captured in the Graham and Chowade rivers, but the densities appeared low.
- i). Arctic grayling were captured in all of the systems, but in small numbers. No young of the year were captured in any of the systems studied during 1990 although they have previously been collected from the Moberly, Cache, Cameron, Ground Birch, Graham, Colt and Colt systems. In addition, spawning migrations have been observed in Farrell, Lynx and Maurice creeks. Despite these observations, the details of habitat usage by spawning and rearing and rearing Arctic grayling in the Site C area remain largely unknown.

#### **4.1.3 Enhancement/Mitigation Potential**

- a). Spawning and rearing habitats within the Site C reservoir are likely to be limited. The possibility of increasing fish utilization of the reservoir's inlet arms, particularly the Moberly Arm should be investigated along with opportunities to take advantage of any rock or gravel structures which are required during reservoir construction or operation.
- b). Sportfish, particularly Arctic grayling, rainbow trout, bull trout or walleye are likely to require hatchery support. Hatchery incubation would compensate for the lack of spawning habitat in immediate tributaries to the reservoir as well as permitting increased angling pressure in the upper

Halfway River tributaries. Perhaps more importantly, warmer hatchery environments would encourage growth at critical juvenile stages which are likely to be impaired by low temperatures in the reservoir.

- c). Kokanee from upstream areas currently rear in the Site C segment of the Peace River. Although these fish could be quite successful in the proposed reservoir, the population is not self-perpetuating as no spawning has been observed. Development of spawning or incubation facilities could contribute an important sport or forage species to the reservoir.
- d). Productivity of the Site C reservoir is likely to be limited by low water temperatures and high flushing rates. It is unlikely that substantial changes can be made in mainstem areas. However, it may be possible to increase production through summer fertilization of the Moberly arm which will have a much lower flushing rate.
- e). Spawning success in the Moberly River appears to be limited by channel instability and poor water quality during freshet flows. Spawning habitats may be further constrained by impoundment which would inundate large areas of the shallow glide habitat currently used by mountain whitefish and possibly Arctic grayling. It may be possible to mitigate the habitat loss through side channel development.
- f). Although the Moberly River has populations of sportfish in the reaches between the Peace River and Moberly Lake, there is little access and no facilities for fishermen. Reach 3 appears to have an abundance of northern pike that is not fished. A road into the Reach 3 along with a boat launch and possibly a campsite would be one method of increasing the angling potential and use of this system. As Reach 3 is mainly slow flowing glide, it may also be an area of interest to canoeists.
- g). Because of substrate instability, lack of water storage, and high sediment load, there is little opportunity for mitigation or enhancement work on the plateau systems.
- h). Maurice Creek appears to be the most important area for spawning rainbow trout from the Peace River. However, capacity is limited by poor substrates and impassable falls. It appears that construction of a spawning/rearing channel in upper Reach 1 could expand the system's productivity. Channel development feasibility should be investigated further.

- i). Above the waterfalls of Maurice Creek there appears to be a large area of moderate quality habitat which could be stocked with rainbow trout. The trout are unlikely to residualize there but downstream emigration would contribute to stocks in the Peace River.
- j). The enhancement potential of Lynx Creek is limited due to the small base flow and heavy silt load. Some improvement could however be made by piping the Brenot Creek springs away from significant silt sources.
- k). Most habitats in the Graham, Chowade and Cypress systems do not appear to be near capacity. Additional angling opportunities could be created by stocking bull trout and rainbow trout in these systems.

#### **4.2 RECOMMENDED FUTURE STUDIES**

Some of the problems worthy of further attention are listed below.

- a). **Characteristics of reservoir inlet arms.**  
One of the biggest restrictions to summer fish production in the Site C reservoir is likely to be low water temperature. As the tributaries are likely to be much warmer, some work should be done to examine the thermal regimes in these areas and how they can best be used. It may be that the warm water will merely form a thin lens over colder Peace River water. None the less, the distribution of warm water may have important enhancement implications.  
  
Flow rates and characteristics of the Moberly arm should be given particular attention and the feasibility of enhancing production through fertilization should be investigated.
- b). **Walleye stock characteristics**  
The microhabitat preferences and thermal responses of Peace River walleye should be investigated in detail. The literature suggests that the proposed reservoir may be too cold for this species to feed or grow. However, as the river is presently cooler than the proposed reservoir yet supports a moderate walleye population, there is reason to suspect that walleye of the Peace River have adapted to cool temperatures. This characteristic should be investigated further before mitigation plans are finalized.

c). Overwintering habitats

Biophysical observations made during this survey support the RRCS (1979) hypothesis that a lack of suitable habitat severely limits fish populations overwintering in Peace River tributaries. The summer/fall surveys did reveal a few deep water refugia but we were unable to identify groundwater sources which might also provide refuge. A few obvious seepages on high banks were noted but those within the watercourses could not be detected. A winter overflight of the study area should be conducted to look for possible ground water supported refuges, or areas where seepages could be developed to provide refuges. Small seepages are likely to be covered by ice and snow. However, seepages large enough to support enhancement or mitigation projects are often visible as open water areas or major ice buildups.

Similarly, although the lack of overwintering habitat is evident, it is difficult to assess the importance the shortage. The Peace River provides large amounts of over wintering habitat and some fish have been observed to drop down from the tributaries to overwinter there (RRCS 1979, Pattendon and Ash 1990). It is however, difficult to assess the relative importance of tributary and instream overwintering without further study.

d). Lynx Creek

The groundwater sources on Brenot Creek should be investigated. At present, these seepages are a major source of the silt which limits fish production in this system. The springs are relatively small and the surrounding soils are very unstable. Wells might permit the water to be piped to the creek. This would limit silt and stabilize the banks. Alternatively, the groundwater might be diverted into pools either to provide overwintering/rearing habitat or to allow the silt to settle.

e). Moberly River

The Moberly River supports the most diverse assemblage of fish species seen in the Peace River tributaries. However, Reach 1 appears to have little potential for spring spawners due to its unstable nature. The river does not seem to be utilized as spawning habitat by rainbow trout as none of the previous studies have located rainbow trout in any of the reaches below Moberly Lake.

Arctic grayling have been found in the Moberly River in low numbers but no data have been collected on the extent to which Arctic grayling from the Peace River utilize the system for spawning and where spawning areas



exist. Reach 2 and 3 would appear to present the best spawning habitat for Arctic grayling, although Reach 2 was only examined for one day during May and June 1990 and Reach 3 was not examined at all. These two Reaches warrant more examination during the early spring to more accurately determine the Arctic grayling populations present and their habitat usage.

Fall spawners, particularly mountain whitefish were found throughout reaches 2 and 3 during 1989. The information suggests that the segment of Reach 1 which will be impacted by reservoir development is used more for migration than spawning. However, the data are less than conclusive and there may be an element of inter-annual variation. Further study is warranted

- f). **Blue Grave, Horseshoe and Colt Creeks**  
These smaller creeks in the upper Halfway area appear to be important spawning and rearing areas for bull trout and rainbow trout. Migration studies including counting fences, and detailed habitat utilization studies should be conducted in the spring for rainbow trout and in the fall for bull trout. The information would provide a better understanding of the contribution of these systems to the fisheries of the area. It would also facilitate development of enhancement or stocking programs.
- g). **Colt Creek**  
Beaver dams in lower Colt Creek should be monitored to determine if they obstruct migration from the Graham River mainstem. If the dams are not passable, or if the dams are not flushed out by spring freshets, then it may be advantageous to remove the dams occasionally.
- h). **Graham and Chowade Rivers**  
It appears that the Graham River and perhaps the Chowade River are important areas for Halfway River and Peace River bull trout. Snorkel surveys and tag/recovery programs during the summer and fall should be conducted in sections of these two systems to assess the population size and to help determine the migration patterns of this species. This would facilitate the development of stocking programs which would not interfere with natural production. These fish occasionally reach large sizes and are therefore a popular sportfish. Enhancement efforts in this area are likely to be well received.

Bull trout from the Peace River have been shown to migrate upstream as far as Christina Falls on the Graham River. Prior to the establishment of enhancement programs for the upper tributaries, the relationship between existing stocks and those from the Peace River mainstem should be better understood. This would be best undertaken through continued tagging and tracking studies.

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*Second draft: subject to revision*

- 82 -

**APPENDICES**

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APPENDIX I

Water levels and temperatures in Lynx and Maurice creeks, 1990.

Date	Temperature (C)			Water level (m)
	max	min	mean	
Lynx Creek				
May 25				0.35
May 26				0.70
May 27				
May 28				
May 29				
May 30				
May 31				
Jun 01	11			0.63
Jun 02	20	8	9	0.57
Jun 03	20	8	9	0.50
Jun 04	24	10	11	0.49
Jun 05				0.50
Jun 06				0.49
Jun 07				0.49
Jun 08				0.46
Jun 09	18	11	15	0.39
Jun 10	13	10	12	0.38
Jun 11	15	7	11	0.70
Jun 12				
Jun 13				
Jun 14				
Jun 15				
Jun 16				
Jun 17				
Jun 18	15			0.38
Jun 19	15	10	12	0.34
Jun 20	17	9	13	0.33
Jun 21	17	9	13	0.31
Jun 22	17	8	13	0.29
Jun 23	18	9	14	0.29
Jun 24	22	10	16	0.25
Jun 25	18	9	14	0.23
Jun 26	17	9	13	0.23
Maurice Creek				
Jun 21				0.52
Jun 22				0.52
Jun 23				0.50
Jun 24				0.50
Jun 25				0.48
Jun 26				0.48
Jun 27				0.48

APPENDIX II

Discharge data (m<sup>3</sup>/sec) collected by the Water Survey of Canada during 1990 for the Moberly River, Halfway River above the Graham River, and the Graham River.

Date	Graham R.	Halfway R.	Moberly R.
May 18	46.7	89.1	34.9
May 19	53.7	101.0	35.3
May 20	57.3	97.4	36.1
May 21	59.8	94.4	37.2
May 22	65.8	92.1	38.0
May 23	73.1	95.5	38.4
May 24	79.1	98.5	38.8
May 25	87.0	102.0	41.6
May 26	107.0	140.0	57.6
May 27	115.0	178.0	65.3
May 28	120.0	166.0	67.2
May 29	129.0	156.0	68.0
May 30	136.0	157.0	68.9
May 31	190.0	291.0	72.7
Jun 1	350.0	900.0	77.4
Jun 2	450.0	735.0	83.0
Jun 3	303.0	413.0	86.6
Jun 4	222.0	306.0	85.8
Jun 5	192.0	256.0	87.1
Jun 6	178.0	249.0	92.6
Jun 7	170.0	236.0	95.2
Jun 8	156.0	200.0	92.9
Jun 9	145.0	176.0	89.0
Jun 10	137.0	158.0	84.8
Jun 11	150.0	170.0	88.3
Jun 12	145.0	184.0	118.0
Jun 13	130.0	159.0	146.0
Jun 14	120.0	140.0	139.0
Jun 15	114.0	126.0	128.0
Jun 16	112.0	119.0	117.0
Jun 17	105.0	110.0	109.0
Jun 18	95.1	101.0	98.1
Jun 19	85.7	91.9	88.7
Jun 20	81.6	87.6	79.8
Jun 21	75.9	85.2	71.9
Jun 22	73.9	85.6	
Jun 23	74.7	85.3	
Jun 24	73.6	85.1	
Jun 25	65.5	82.8	
Jun 26	60.4	82.6	
Jun 27	59.3	83.3	
Jun 28	55.3		
Jun 29	52.7		
Jun 30	52.2		



APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
1	May 23	22	D	LSU	445						L	5182	
2	May 23	22	U	LSU	210						L		
3	May 23	22	U	LSU	210						L		
4	May 24	8	D	RB	195	82	1.11	2			L		
5	May 24	8	D	LSU	184	70	1.12				L		
6	May 24	8	U	LSU	185	72	1.14				D		
7	May 24	7	D	RB	375	630	1.19	4	F	R	L		
8	May 24	19	U	RB	355	500	1.12	4	F	R	L	15975	
9	Jun 2	10	U	RB	470	1,200	1.16		M	R	L		
10	Jun 2	10	U	LSU	410	1,000	1.45				L		
11	Jun 2	17	U	RB	190	80	1.17	2			L		
12	Jun 2	17	D	RB	265	166	0.89	3			L		
13	Jun 2	17	D	LSU	180	70	1.20				L		
14	Jun 2	22	U	RB	330	450	1.25	3	F	R	D		7940
15	Jun 2	22	U	RB	220	110	1.03	2			L		
16	Jun 2	22	U	LSU	260	210	1.19				L		
17	Jun 3	8	U	RB	375	700	1.33	4	F	R	L		13738
18	Jun 3	17	U	LSU	395	800	1.30				L		
19	Jun 3	17	U	LSU	295	320	1.25				L		
20	Jun 3	17	U	LSU	200	135	1.69				D		
21	Jun 3	17	D	LSU	415	1,000	1.40				L		
22	Jun 3	17	D	LSU	398	825	1.31				L		
23	Jun 3	17	D	LSU	220	150	1.41				L		
24	Jun 3	22	D	LSU	455	1,100	1.17				L		
25	Jun 3	22	D	LSU	450	950	1.04				L		
26	Jun 3	22	D	LSU	235	205	1.58				L		
27	Jun 3	22	D	LSU	97						L		
28	Jun 3	22	D	CSU	330	430	1.20				L		
29	Jun 4	8	U	RB	290	300	1.23	3	F	R	L		
30	Jun 4	8	D	LSU	425	860	1.12				L		
31	Jun 4	17	D	LSU	395	675	1.10				L		
32	Jun 4	17	D	LSU	215	95	0.96				L		

Second draft: subject to revision  
- A3 -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
33	Jun 4	17	D	LSU	132						L		
34	Jun 4	17	D	RB	395	685	1.11		F	R	L		13738
35	Jun 4	22	U	LSU	230	112	0.92				L		
36	Jun 4	22	D	LSU	280	210	0.96				L		
37	Jun 4	22	D	RB	90			1			L		
38	Jun 4	22	U	LSU	230	110	0.90				L		
39	Jun 5	8	D	LSU	390	650	1.10				L		
40	Jun 5	8	D	LSU	385	600	1.05				L		
41	Jun 5	8	D	LSU	275	240	1.15				L		
42	Jun 5	8	U	RB	385	650	1.14	4	F	R	L		
43	Jun 5	12	U	RB	235	145	1.12	3	F	R	D		
44	Jun 5	17	D	LSU	295	275	1.07				L		
45	Jun 5	17	D	LSU	220	135	1.27				L		
46	Jun 5	17	D	LSU	225	145	1.27				L		
47	Jun 5	22	U	LSU	210	125	1.35				L		
48	Jun 6	7	U	LSU	195	100	1.35				L		
49	Jun 6	7	D	LSU							L		
50	Jun 6	7	D	LSU							L		
51	Jun 6	17	D	LSU	175	56	1.04				L		
52	Jun 6	17	D	LNC	115	18	1.15				L		
53	Jun 6	17	D	RSC	110	18	1.37				L		
54	Jun 6	17	U	LSU	270	240	1.22				L		
55	Jun 6	17	U	LSU	210	104	1.12				L		
56	Jun 6	22	U	LSU	300	380	1.41				L		
57	Jun 6	22	U	LSU	230	140	1.15				L		
58	Jun 6	22	U	LSU	235	144	1.11				L		
59	Jun 6	22	U	LSU	245	165	1.12				L		
60	Jun 6	22	U	LSU	205	105	1.22				L		
61	Jun 7	7	D	LSU	445	1,000	1.13				L		
62	Jun 7	7	D	LSU	405	700	1.05				L		
63	Jun 7	7	D	LSU	420	700	0.94				L		
64	Jun 7	7	D	LSU	340	410	1.04				L		

Second draft: subject to revision  
- A4 -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
65	Jun 7	7	D	LSU	175	60	1.12				L		
66	Jun 7	7	U	LSU	260	210	1.19				L		
67	Jun 7	7	U	LSU	240	180	1.30				L		
68	Jun 7	15	D	LSU	454	1,050	1.12				L		
69	Jun 7	15	D	RSC	40						L		
70	Jun 7	15	U	LSU	260	215	1.22				L		
71	Jun 7	15	U	RB	250	160	1.02	3	M	R	L		
72	Jun 8	7	D	LSU	400	625	0.98				L		
73	Jun 8	7	D	LSU	420	675	0.91				L		
74	Jun 8	7	D	LSU	410	675	0.98				L		
75	Jun 8	7	D	LSU	405	725	1.09				L		8508
76	Jun 8	7	D	LSU	405	630	0.95				L		
77	Jun 8	7	D	LSU	415	700	0.98				L		
78	Jun 8	7	D	LSU	385	610	1.07				L		
79	Jun 8	7	D	LSU	420	760	1.03				L		
80	Jun 8	7	D	LSU	365	640	1.32				L		
81	Jun 8	7	D	LSU	375	530	1.01				L		
82	Jun 8	7	D	LSU	405	980	1.48				L		
83	Jun 8	7	D	LSU	350	660	1.54				L		
84	Jun 8	7	D	LSU	390	630	1.06				L		
85	Jun 8	7	D	LSU	385	600	1.05				L		
86	Jun 8	7	D	LSU	410	730	1.06				L		
87	Jun 8	7	D	LSU	365	565	1.16				L		
88	Jun 8	7	D	LSU	385	600	1.05				L		
89	Jun 8	7	D	LSU	405	725	1.09				L		
90	Jun 8	7	D	LSU	430	800	1.01				L		
91	Jun 8	7	D	LSU	405	790	1.19				L		
92	Jun 8	7	D	LSU	425	750	0.98				L		
93	Jun 8	7	D	LSU	415	715	1.00				L		8766
94	Jun 8	7	D	LSU	415	770	1.08				L		
95	Jun 8	7	D	LSU	290	305	1.25				L		
96	Jun 8	7	D	LSU	410	775	1.12				L		

Second draft: subject to revision  
 - A5 -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
97	Jun 8	7	U	LSU	200	100	1.25				L		
98	Jun 8	18	D	RB	355	550	1.23	4			L		
99	Jun 8	18	D	LSU	385	615	1.08				L		
100	Jun 8	18	D	RB	390	675	1.14	4			L		4978
101	Jun 8	18	D	LSU	385	560	0.98				L		
102	Jun 8	18	D	LSU	390	660	1.11				L		
103	Jun 8	18	D	LSU	385	760	1.33				L		
104	Jun 8	18	U	LSU	240	195	1.41				L		
105	Jun 8	22	D	LNC	130	18	0.83				L		
106	Jun 8	22	U	LSU	285	300	1.30				L		
107	Jun 9	8	D	LSU	410	650	0.94				L		
108	Jun 9	8	D	LSU	370	550	1.09				L		
109	Jun 9	8	D	LSU	385	585	1.03				L		
110	Jun 9	8	D	LSU	405	700	1.05				L		
111	Jun 9	8	D	LSU	405	675	1.02				L		
112	Jun 9	8	D	LSU	415	700	0.98				L		
113	Jun 9	8	D	LSU	400	700	1.09				L		
114	Jun 9	8	D	LSU	430	910	1.14				L		
115	Jun 9	8	D	LSU	395	675	1.10				L		
116	Jun 9	8	D	LSU	360	540	1.16				L		
117	Jun 9	8	D	LSU	425	850	1.11				L		
118	Jun 9	8	D	RB	295	300	1.17	3	F	S	L		
119	Jun 9	8	U	LSU	265	300	1.61				L		
120	Jun 9	8	U	LSU	240	180	1.30				L		
121	Jun 9	8	U	LSU	275	230	1.11				L		
122	Jun 9	8	U	LSU	300	310	1.15				L		
123	Jun 9	8	U	LSU	210	125	1.35				L		
124	Jun 9	8	U	LSU	265	225	1.21				L		
125	Jun 9	8	U	LSU	275	230	1.11				L		
126	Jun 9	8	U	LSU	245	200	1.36				L		
127	Jun 9	18	D	LSU	370	530	1.05				L		
128	Jun 9	18	D	LSU	300	310	1.15				L		

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
129	Jun 9	18	D	LSU	180	75	1.29				D		
130	Jun 9	18	D	LSU	230	150	1.23				L		
131	Jun 9	18	U	LSU	245	170	1.16				L		
132	Jun 9	18	U	RB	260	190	1.08	3			L	15966	
133	Jun 9	18	U	NSC	235	100	0.77				D		
134	Jun 9	18	U	NSC	235	105	0.81				L		
135	Jun 9	22	U	LSU	210	130	1.40				L		
136	Jun 10	17	U	LSU	225	150	1.32				L		
137	Jun 10	17	U	LSU	180	80	1.37				L		
138	Jun 19	17	D	RB	350	410	0.96	3	F	S	L	15969	
139	Jun 19	17	D	NSC	195	90	1.21				L		
140	Jun 19	17	D	LSU	375	605	1.15				L		
141	Jun 20	9	D	RB	380	510	0.93	4	F	S	L	15970	
142	Jun 20	9	D	LSU	415	725	1.01				L		
143	Jun 20	9	D	LSU	340	400	1.02				L		
144	Jun 20	9	D	LSU	180	75	1.29				L		
145	Jun 20	9	D	LSU	240	165	1.19				L		
146	Jun 20	9	D	LSU	255	225	1.36				L		
147	Jun 20	17	D	LSU	355	500	1.12				L		
148	Jun 20	17	D	LSU	380	550	1.00				L		
149	Jun 20	17	D	LSU	390	600	1.01				L		
150	Jun 20	17	D	LSU	380	550	1.00				L		
151	Jun 20	17	D	LSU	365	540	1.11				L		
152	Jun 20	17	D	LSU	350	550	1.28				L		
153	Jun 20	17	D	LSU	175	65	1.21				L		
154	Jun 20	17	D	LSU	300	275	1.02				L		
155	Jun 20	17	D	LSU	330	400	1.11				L		
156	Jun 20	17	D	LSU	330	310	0.86				L		
157	Jun 20	17	D	LSU	375	500	0.95				L		
158	Jun 21	9	D	LSU	475	1,300	1.21				L		
159	Jun 21	9	D	LSU	400	610	0.95				L		
160	Jun 21	9	D	LSU	390	590	0.99				L		

Second draft: subject to revision  
- A7 -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
161	Jun 21	9	D	LSU	380	675	1.23				L		
162	Jun 21	9	D	LSU	170	85	1.73				L		
163	Jun 21	9	D	LSU	240	180	1.30				L		
164	Jun 21	9	D	RB	390	625	1.05	4	F	S	L	15971	
165	Jun 21	9	D	RB	340	425	1.08	4	F	S	L	15972	
166	Jun 21	9	D	RB	315	260	0.83	3	F	S	L	15973	
167	Jun 21	9	D	RB	210	150	1.62	2			L		
168	Jun 21	20	D	LSU	370	510	1.01				L		
169	Jun 21	20	D	LSU	300	280	1.04				L		
170	Jun 21	20	D	LSU	315	265	0.85				L		
171	Jun 21	20	D	LSU	400	620	0.97				L		
172	Jun 21	20	D	LSU	330	400	1.11				L		
173	Jun 21	20	D	NSC	90						L		
174	Jun 21	20	D	LSU							L		
175	Jun 21	20	D	LSU							L		
176	Jun 21	20	D	LSU							L		
177	Jun 21	20	D	LSU							L		
178	Jun 21	20	D	LSU							L		
179	Jun 21	20	D	LSU							L		
180	Jun 21	20	D	LSU							L		
181	Jun 22	11	D	LSU	400	655	1.02				L		
182	Jun 22	11	D	LSU	350	505	1.18				L		
183	Jun 22	11	D	LSU	360	505	1.08				L		
184	Jun 22	11	D	LSU	315	350	1.12				L		
185	Jun 22	11	D	LSU	335	450	1.20				L		
186	Jun 22	11	D	CSU	190	150	2.19				L		
187	Jun 22	11	D	LSU							L		
188	Jun 22	11	D	LSU							L		
189	Jun 22	11	D	LSU							L		
190	Jun 23	9	D	DV	235	200	1.54				L	11448	
191	Jun 23	9	D	CSU	410	810	1.18				L		
192	Jun 23	9	D	LSU	350	550	1.28				L		

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
193	Jun 23	9	D	LSU	330	450	1.25				L		
194	Jun 23	9	D	LSU	340	520	1.32				L		
195	Jun 23	9	D	LSU	350	500	1.17				L		
196	Jun 23	9	D	LSU	360	550	1.18				L		
197	Jun 23	9	D	RB	360	500	1.07	4	M		L	11444	
198	Jun 23	9	D	RB	360	490	1.05	4	M		L	11445	
199	Jun 23	9	D	RB	370	550	1.09	4	F	S	L	11446	
200	Jun 23	9	D	RB	330	450	1.25	3			L		5180
201	Jun 23	9	D	RB	310	350	1.17	3	F	S	L		
202	Jun 23	9	D	RB	215	160	1.61	2			L		
203	Jun 23	9	D	LSU							L		
204	Jun 23	9	D	LSU							L		
205	Jun 23	9	D	LSU							L		
206	Jun 23	9	D	LSU							L		
207	Jun 23	9	D	LSU							L		
208	Jun 23	9	D	LSU							L		
209	Jun 23	9	D	LSU							L		
210	Jun 23	9	D	LSU							L		
211	Jun 23	9	D	LSU							L		
212	Jun 23	9	D	LSU							L		
213	Jun 23	9	D	LSU							L		
214	Jun 23	21	D	LSU	405	850	1.28				L		
215	Jun 23	21	D	LSU	355	500	1.12				L		
216	Jun 23	21	D	LSU	360	500	1.07				L		
217	Jun 23	21	D	LSU	385	520	0.91				L		
218	Jun 23	21	D	LSU	355	505	1.13				L		
219	Jun 23	21	D	LSU							L		
220	Jun 23	21	D	LSU							L		
221	Jun 23	21	D	LSU							L		
222	Jun 23	21	D	LSU							L		
223	Jun 23	21	D	LSU							L		
224	Jun 23	21	D	LSU							L		

Second draft: subject to revision  
- A9 -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag	
												released	recovered
225	Jun 23	21	D	LSU							L		
226	Jun 23	21	D	LSU							L		
227	Jun 23	21	D	LSU							L		
228	Jun 23	21	D	LSU							L		
229	Jun 23	21	D	LSU							L		
230	Jun 23	21	D	LSU							L		
231	Jun 23	21	D	LSU							L		
232	Jun 23	21	D	LSU							L		
233	Jun 24	8	D	LSU	358	620	1.35				L		
234	Jun 24	8	D	LSU	350	580	1.35				L		
235	Jun 24	8	D	LSU	260	230	1.31				L		
236	Jun 24	8	D	LSU	400	790	1.23				L		
237	Jun 24	8	D	LSU	300	310	1.15				L		
238	Jun 24	8	D	LSU							L		
239	Jun 24	8	D	LSU							L		
240	Jun 24	8	D	LSU							L		
241	Jun 24	8	D	LSU							L		
242	Jun 24	20	D	LSU	390	600	1.01				L		
243	Jun 24	20	D	LSU	360	510	1.09				L		
244	Jun 24	20	D	LSU	365	520	1.07				L		
245	Jun 24	20	D	LSU	420	750	1.01				L		
246	Jun 24	20	D	LSU	330	440	1.22				L		8501
247	Jun 24	20	D	LSU							L		
248	Jun 24	20	D	LSU							L		
249	Jun 24	20	D	LSU							L		
250	Jun 24	20	D	LSU							L		
251	Jun 24	20	D	LSU							L		
252	Jun 24	20	D	LSU							L		
253	Jun 24	20	D	LSU							L		
254	Jun 24	20	D	LSU							L		
255	Jun 24	20	D	LSU							L		
256	Jun 24	20	D	LSU							L		

Second draft: subject to revision  
- A10 -



APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag		
												released	recovered	
257	Jun 24	20	D	LSU								L		
258	Jun 24	20	D	LSU								L		
259	Jun 24	20	D	LSU								L		
260	Jun 24	20	D	LSU								L		
261	Jun 24	20	D	LSU								L		
262	Jun 24	20	D	LSU								L		
263	Jun 24	20	D	LSU								L		
264	Jun 24	20	D	LSU								L		
265	Jun 24	20	D	LSU								L		
266	Jun 24	20	D	LSU								L		
267	Jun 24	20	D	LSU								L		
268	Jun 24	20	D	LSU								L		
269	Jun 24	20	D	LSU								L		
270	Jun 24	20	D	LSU								L		
271	Jun 24	20	D	LSU								L		
272	Jun 26	8	D	LSU	370	550	1.09					L		
273	Jun 26	8	D	LSU	300	370	1.37					L		
274	Jun 26	8	D	LSU	380	700	1.28					L		
275	Jun 26	8	D	LSU	340	490	1.25					L		
276	Jun 26	8	D	LSU	210	200	2.16					L		
277	Jun 26	8	D	LSU								L		
278	Jun 26	8	D	LSU								L		
279	Jun 26	8	D	LSU								L		
280	Jun 26	8	D	LSU								L		
281	Jun 26	8	D	LSU								L		
282	Jun 26	8	D	LSU								L		
283	Jun 26	20	D	LSU	350	560	1.31					L		
284	Jun 26	20	D	LSU	380	600	1.09					L		
285	Jun 26	20	D	LSU	430	740	0.93					L		
286	Jun 26	20	D	LSU	290	260	1.07					L		
287	Jun 26	20	D	LSU	380	680	1.24					L		8585
288	Jun 26	20	D	LSU								L		

Second draft: subject to revision  
- All -

APPENDIX III

Fish data collected from the fence on Lynx Creek

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Condition (k)	Age	Sex	Maturity	L/D	Tag		
												released	recovered	
289	Jun 26	20	D	LSU								L		
290	Jun 26	20	D	LSU								L		
291	Jun 26	20	D	LSU								L		
292	Jun 26	20	D	LSU								L		
293	Jun 26	20	D	LSU								L		
294	Jun 26	20	D	LSU								L		
295	Jun 26	20	D	LSU								L		
296	Jun 26	20	D	LSU								L		
297	Jun 26	20	D	LSU								L		
298	Jun 26	20	D	LSU								L		
299	Jun 26	20	D	LSU								L		
300	Jun 26	20	D	LSU								L		

D = downstream trap, U = upstream trap, L = live, D = dead.

APPENDIX IV

Fish data collected from the fence on Maurice Creek.

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Age	Sex	Maturity	L/D	Tags	
											release	recover
101	May 24	15	D	LSU	465					L		
102	May 24	15	D	LW	345					L		
103	May 24	15	D	LW	265					L		
104	May 24	15	D	LW	345					L		
105	May 24	15	D	LW	210					L		
106	May 24	15	D	LW	205					L		
107	May 24	15	D	LW	195					L		
108	May 24	15	D	LW	384					L		
109	May 24	15	D	LW	375					L	5181	
110	May 24	15	D	LSU	450					L		
111	May 24	15	D	RB	345					L	5180	
112	May 24	15	D	RB	352					L	5179	
113	May 24	15	D	MW	341					L	5178	
114	May 24	15	D	MW	365					L		
115	May 24	15	D	MW	355					L	5177	
116	May 24	16	D	AG	350					L		
117	May 24	16	D	LSU	466					L		
118	May 24	16	D	LW	265					L		
119	May 24	16	D	RB	268					L		
120	May 24	16	D	LSU	367					L		
121	May 24	16	D	LSU	450					L		
122	May 24	17	D	LW	390	430	7			L		
123	May 24	17	D	LSU	441					L		
124	May 24	17	D	LW	340	415	6			L		
125	May 24	17	D	LSU	320	370				L		
126	May 24	17	D	LSU	250	182				L		
127	May 24	17	D	LW	300	232	5			L		
128	May 24	17	D	LSU	432					L		
129	May 24	17	D	LSU	430					L		
130	May 24	17	D	LSU	385					L		
131	Jun 9	10	D	DV	740	5,000	8	M		L		
132	Jun 9	10	D	NP	415	405	6			D		

Second draft: subject to revision  
- A13 -

APPENDIX IV

Fish data collected from the fence on Maurice Creek.

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Age	Sex	Maturity	L/D	Tags	
											release	recover
133	Jun 9	10	D	NP	320	310	4			D		
134	Jun 9	10	D	NP	220	245	3			D		
135	Jun 9	10	D	LW	305	345	4	M		D		
136	Jun 9	10	D	LW	310	350	4	F	R	D		
137	Jun 9	10	D	LW	215	275	3	M		D		
138	Jun 9	10	D	MW	225	150	3			D		
139	Jun 9	10	D	LSU	190	95				D		
140	Jun 9	10	D	LSU	450	820				L		
141	Jun 9	10	D	LSU	250	220				L		
142	Jun 9	10	D	LSU	390	750				L		
143	Jun 9	10	D	LSU	450	1,250				L		
144	Jun 9	10	D	LSU	200	90				L		
145	Jun 9	10	D	LSU	122	220				L		
146	Jun 9	19	U	LSU	450	815				L		
147	Jun 9	19	U	LW	335	350	5			L	15967	
148	Jun 9	19	U	LW	330	300	5			L	15968	
149	Jun 9	19	D	RB	205	92	2			L		
150	Jun 20	17	D	RB	385	575	4	F	S	D	4978	
151	Jun 21	11	D	LSU	335	450				L		
152	Jun 21	11	D	LSU	445	1,075				L		
153	Jun 21	11	D	LSU	395	780				L		
154	Jun 21	11	D	LSU	405	820				L		
155	Jun 21	11	D	LSU	380	700				L		
156	Jun 21	11	D	LSU	420	825				L		
157	Jun 21	11	D	LSU	405	800				L		
158	Jun 21	11	D	LSU	450	1,160				L		
159	Jun 21	11	D	LW	310	360	5			L	11432	
160	Jun 21	11	D	LW	330	320	6			L	11433	
161	Jun 21	11	D	LW	350	400	6			L	11434	
162	Jun 21	11	D	LW	355	370	6			L	11435	
163	Jun 21	11	D	LW	335	360	5			L	11436	
164	Jun 21	11	D	LW	340	380	6			L	11438	

Second draft: subject to revision  
- A14 -

APPENDIX IV

Fish data collected from the fence on Maurice Creek.

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Age	Sex	Maturity	L/D	Tags	
											release	recover
165	Jun 21	11	D	LW	290	270	4			L	11439	
166	Jun 21	11	D	LW	315	330	5			L	11440	
167	Jun 21	11	D	NP	350	380	6			L		
168	Jun 21	11	D	RB	245	178	3			L	11441	
169	Jun 21	11	D	LSU	300	325				L		
170	Jun 21	11	D	LSU	265	200				L		
171	Jun 21	11	U	LSU	305	400				L		
172	Jun 21	11	U	RB	270	275	3			L		12277
173	Jun 21	19	D	LSU	360	600				L		
174	Jun 21	19	D	RB	355	500	4	F	R	D		
175	Jun 22	10	D	LW	245	150	4			D		
176	Jun 22	10	D	LW	255	220	4			D		
177	Jun 22	10	D	LW	185	197	3			D		
178	Jun 23	10	D	LSU	400	900				L		
179	Jun 23	10	D	LSU	435	1,500				L		
180	Jun 23	10	D	LSU	385	740				L		
181	Jun 23	10	D	LSU	230	250				L		
182	Jun 23	10	D	LSU	415	800				L		
183	Jun 23	10	D	LSU						L		
184	Jun 23	10	D	LSU						L		
185	Jun 23	10	D	LSU						L		
186	Jun 23	10	D	LSU						L		
187	Jun 23	10	D	LSU						L		
188	Jun 23	10	D	LSU						L		
189	Jun 23	10	D	LSU						L		
190	Jun 23	10	D	LSU						L		
191	Jun 23	10	D	LSU						L		
192	Jun 23	10	D	LSU						L		
193	Jun 23	10	D	LSU						L		
194	Jun 23	10	D	LSU						L		
195	Jun 23	10	D	NP	310	310	4			D		
196	Jun 23	10	D	NP	330	350	5			D		

Second draft: subject to revision  
- A15 -

APPENDIX IV

Fish data collected from the fence on Maurice Creek.

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Age	Sex	Maturity	L/D	Tags	
											release	recover
197	Jun 23	10	D	NP	290	220	4			D		
198	Jun 23	10	D	NP	300	250	4			D		
199	Jun 23	10	D	RB	380	500	4	F	S	D		
200	Jun 23	10	D	RB	240	160	3	M		D		
201	Jun 23	10	D	RB	265	220	3	M		D		
202	Jun 23	10	D	AG	215	120	3			D		
203	Jun 23	10	D	LW	360	420	6	M		D		
204	Jun 23	10	D	LW	320	350	6	M		D		
205	Jun 23	20	D	LSU	500	1,300				L		
206	Jun 23	20	D	CSU	560	2,050				L		
207	Jun 23	20	D	CSU	560	2,050				L		
208	Jun 23	20	D	CSU	460	1,200				L		
209	Jun 23	20	D	LSU	400	800				L		
210	Jun 23	20	D	LSU	370	610				L		
211	Jun 23	20	D	LSU	360	600				L		
212	Jun 23	20	D	LW	365	475	6			L	11449	
213	Jun 23	20	D	LW	290	300	5			L	11474	
214	Jun 23	20	D	LW	325	350	5			L	11473	
215	Jun 23	20	D	LW	250	200	4			L		
216	Jun 23	20	D	NP	375	480	5			L	11472	
217	Jun 23	20	D	LSU	230	200				L		
218	Jun 23	20	D	RB	340	450		M		L	11442	
219	Jun 23	20	D	RB	370	510	4	M		L	11443	
220	Jun 24	9	D	NP	600	1,750	8			L	11471	
221	Jun 24	9	D	CSU	450	950				L		
222	Jun 24	9	D	LW	370	450	6			L	11470	
223	Jun 24	9	D	LW	345	400	6			L	11469	
224	Jun 24	9	D	MW	250	210	3			L		
225	Jun 24	9	D	RB	215	350	2	M		L		14694
226	Jun 24	9	D	LSU	230	250				L		
227	Jun 24	9	D	LSU	215	200				L		
228	Jun 24	20	D	LSU	400	850				L		

Second draft: subject to revision  
- A16 -

APPENDIX IV

Fish data collected from the fence on Maurice Creek.

Fish #	Date	Time (h)	Trap	Species	Fork length (mm)	Weight (g)	Age	Sex	Maturity	L/D	Tags	
											release	recover
229	Jun 24	20	D	LSU	270	210				L		
230	Jun 24	20	D	LW	370	510	6			L	11468	
231	Jun 25	10	D	NP	750	1,825	10			L	11467	
232	Jun 25	10	D	LSU	370	730				L		
233	Jun 25	10	D	LSU	360	610				L		
234	Jun 25	10	D	LSU	230	260				L		
235	Jun 25	10	D	LSU	385	740				L		
236	Jun 25	10	D	LSU	335	450				L		
237	Jun 25	10	D	LSU						L		
238	Jun 25	10	D	LSU						L		
239	Jun 25	10	D	LSU						L		
240	Jun 25	10	D	LSU						L		
241	Jun 25	10	D	LSU						L		
242	Jun 25	19	D	MW	220	160	4			L		
243	Jun 25	19	D	LSU	360	600				L		
244	Jun 25	19	D	LSU	310	405				L		
245	Jun 26	10	D	LSU	400	910				L		
246	Jun 26	10	D	LSU	320	420				L		
247	Jun 26	10	D	LSU	350	450				L		
248	Jun 26	10	D	LSU	380	730				L		
249	Jun 26	10	D	LSU	220	165				L		
250	Jun 26	10	D	RB	305	350	3	M		L	11466	
251	Jun 26	10	D	RB	250	200	3	M		L	11465	
252	Jun 26	10	D	MW	220	150	3			L		
253	Jun 26	19	D	LSU	400	900				L		

U = upstream trap, D = downstream trap, L = live, D = dead.

Second draft: subject to revision  
- A17 -

APPENDIX V

Fish data collected from Lynx creek during a stream survey conducted on June 23, 1990.

Fish#	Site #	Pass #	Species	Fork length (mm)	Weight (g)	Sex	Maturity
1	1	1	NSC	96			
2	3	1	LSU	265			
3	3	1	LSU	160			
4	3	1	NSC	91			
5	4	1	NSC	84	102.3		
6	4	1	NSC	83			
7	4	1	NSC	85			
8	4	1	NSC	81			
9	4	1	LNC	85			
10	4	1	NSC	60			
11	4	1	NSC	87			
12	4	1	NSC	82			
13	4	1	LNC	86			
14	4	1	NSC	97			
15	4	1	NSC	93			
16	4	1	LNC	74			
17	4	1	NSC	95			
18	4	1	RB	90			
19	4	1	NSC	87			
20	4	1	LNC	90			
21	4	1	RB	79	83.0		
22	4	1	LNC	78			
23	4	1	RB	85			
24	4	1	LNC	61			
25	4	1	LNC	78			
26	4	1	LNC	70			
27	4	2	LNC	73			
28	4	2	LNC	68			
29	4	2	LNC	97			
30	4	2	LNC	62			
31	4	2	LNC	76			
32	4	2	LNC	63			
33	5	1	LNC	82			
34	5	1	LNC	76			
35	5	1	LNC	82			
36	5	1	LNC	88			
37	5	1	LNC	73			
38	5	1	LNC	82			
39	5	1	LNC	85			
40	5	1	LNC	79			
41	5	1	LNC	92			
42	5	1	LNC	84			
43	5	1	LNC	79			
44	5	1	LNC	97			
45	5	1	LNC	84			
46	5	1	LNC	88			
47	5	1	LNC	84			



APPENDIX V

Fish data collected from Lynx creek during a stream survey conducted on June 23, 1990.

Fish#	Site #	Pass #	Species	Fork length (mm)	Weight (g)	Sex	Maturity
48	5	1	LNC	87			
49	5	1	LNC	79			
50	5	1	LNC	89			
51	5	1	LNC	72			
52	5	1	LNC	87	80.4		
53	5	1	LNC	77			
54	5	1	LNC	54			
55	5	1	LNC	57			
56	5	1	LNC	74			
57	5	2	LNC	82			
58	5	2	LNC	80			
59	5	2	LNC	74			
60	5	2	LNC	70			
61	5	2	LNC	86			
62	6	1	LSU	152			
63	6	1	NSC	84			
64	6	1	LSU	110			
65	6	1	LSU	99			
66	6	1	NSC	88			
67	6	1	LNC	57			
68	6	1	RB	73			
69	6	1	NSC	90			
70	6	1	LSU	67			
71	6	1	LNC	87			
72	6	1	LNC	63			
73	6	1	LSU	73			
74	6	1	LNC	64			
75	6	1	LNC	56			
76	6	1	LNC	54			
77	7	1	LSU	295			
78	7	1	LSU	145	98.5		
79	7	1	CC	62			
80	7	1	CC	63			
81	7	2	CC	49	49.0		

APPENDIX VI

Fish data collected from Maurice Creek during a stream survey conducted on June 22, 1990.

Fish#	Reach	Site #	Pass #	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Tags Recovered
1	1	1	1	LSU	244				
2	1	1	1	LSU	261				
3	1	1	1	NSC	222				
4	1	1	1	LSU	410				
5	1	1	1	NSC	250				
6	1	1	1	LSU	375				
7	1	1	1	LSU	176				
8	1	1	1	LSU	438				
9	1	1	1	LSU	185				
10	1	1	1	LSU	375				
11	1	1	1	LSU	259				
12	1	1	1	LSU	408				
13	1	1	1	CSU	370				
14	1	1	1	NSC	204				
15	1	1	1	LSU	390				
16	1	1	1	CC	94				
17	1	1	1	LSU	168				
18	1	1	1	LNC	96				
19	1	1	1	CC	76				
20	1	1	1	LNC	60				
21	1	1	1	CC	75				
22	1	1	1	CC	48				
23	1	1	1	LNC	62				
24	1	1	1	CC	45				
25	1	1	1	GR	374				
26	1	1	1	LW	374				
27	1	1	1	RB	351		M	M	
28	1	1	1	MW	125				
29	1	1	1	MW	115				
30	1	1	1	MW	121				
31	1	1	1	MW	111				
32	1	1	1	MW	111				
33	1	1	2	LSU	153				
34	1	1	2	LSU	199				
35	1	1	2	LSU	190				
36	1	1	2	LSU	74				
37	1	1	2	CC	81				
38	1	1	2	CC	78				
39	1	1	2	CC	61				
40	1	1	2	CC	67				
41	1	1	2	CC	68				
42	1	1	2	CC	78				
43	1	2	1	LSU	391		F	R	8579
44	1	2	1	LSU	440		F	R	
45	1	2	1	LSU	382		M	R	
46	1	2	1	LSU	368		M	R	
47	1	2	1	LSU	98				

APPENDIX VI

Fish data collected from Maurice Creek during a stream survey conducted on June 22, 1990.

Fish#	Reach	Site #	Pass #	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Tags Recovered
48	1	2	1	CC	81				
49	1	2	1	CC	68				
50	1	2	1	LSU	98				
51	1	2	1	CC	45				
52	1	2	1	RB	90				
53	1	2	2	LSU	70				
54	1	2	2	RB	72				
55	1	3	1	MW	277				
56	1	3	1	RB	272		F	R	
57	1	3	1	CC	84				
58	1	3	1	LSU	79				
59	1	3	1	CC	76				
60	1	3	1	RB	111				
61	1	3	1	CC	77				
62	1	3	1	CC	44				
63	1	3	1	LSU	83				
64	1	3	1	RB	97				
65	1	3	2	CC	97				
66	1	3	2	CC	55				
67	1	3	2	CC	56				
68	1	3	2	CC	57				
69	2	4	1	CC	69				
70	2	4	1	CC	75				
71	2	4	1	CC	83				
72	2	4	1	CC	75				
73	2	4	1	CC	69				
74	2	4	1	CC	45				
75	2	4	1	CC	70				
76	2	4	1	CC	71				
77	2	4	1	CC	54				
78	2	4	1	CC	68				
79	2	4	1	CC	65				
80	2	4	1	CC	81				
81	2	4	1	CC	41				
82	2	4	1	CC	59				
83	2	4	1	CC	44				
84	2	4	1	CC	42				
85	2	4	1	CC	41				
86	2	4	1	CC	54				
87	2	4	1	CC	46				
88	2	4	1	CC	43				
89	2	4	1	CC	42				
90	2	4	1	CC	47				
91	2	4	1	CC	49				
92	2	4	1	CC	43				
93	2	4	1	CC	51				
94	2	4	1	CC	41				

APPENDIX VI

Fish data collected from Maurice Creek during a stream survey conducted on June 22, 1990.

Fish#	Reach	Site #	Pass #	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Tags Recovered
95	2	4	1	RB	94				
96	2	4	1	RB	92				
97	2	5	1	RB	318		M	R	
98	2	5	1	RB	156				
99	2	5	1	RB	119				
100	2	5	1	RB	134				
101	2	5	1	CC	73				
102	2	5	1	CC	46				
103	2	5	1	CC	74				
104	2	5	1	CC	79				
105	2	5	2	CC	80				
106	2	5	2	CC	42				
107	2	5	2	CC	71				
108	2	5	2	RB	147				
109	2	5	2	CC	42				
110	2	6	1	LSU	248				
111	2	6	1	LSU	192				
112	2	6	1	LSU	211				
113	2	6	1	LSU	170				
114	2	6	1	LSU	192				
115	2	6	1	LSU	210				
116	2	6	1	LSU	163				
117	2	6	1	LSU	151				
118	2	6	1	CC	72				
119	2	6	1	NSC	87				
120	2	6	1	RB	186				
121	2	6	1	RB	148				
122	2	6	1	LSU	139				
123	2	6	1	RB	134				
124	2	6	1	RB	146				
125	2	6	1	RB	155				
126	2	6	1	LSU	123				
127	2	6	1	LSU	100				
128	2	6	1	LSU	102				
129	2	6	2	CSU	234				
130	2	6	2	RB				R	
131	2	6	2	CSU	174				
132	2	6	2	RB	101				
133	2	6	2	LSU	141				
134	2	6	2	LSU	127				
135	2	6	2	LSU	109				
136	2	6	2	LSU	110				
137	2	6	2	LSU	101				
138	2	6	2	CC	81				
139	2	6	2	CC	81				

APPENDIX VII  
Electrofishing data from Lynx and Maurice creeks, 1990.

System	Reach	Site	Habitat	Species	C1	C2	C3	Population	Area (m <sup>2</sup> )	Density (fish/100m <sup>2</sup> )
Maurice	1	1	pool	LSU	12	4	.	18	130	13.82
Maurice	1	1	pool	NSC	3	0	.	3	130	2.30
Maurice	1	1	pool	CSU	1	0	.	1	130	0.77
Maurice	1	1	pool	LNC	3	0	.	3	130	2.30
Maurice	1	1	pool	CC	5	6	.		130	0.00
Maurice	1	1	pool	LW	1	0	.	1	130	0.77
Maurice	1	1	pool	RB(A)	1	0	.	1	130	0.77
Maurice	1	1	pool	GR(A)	1	0	.	1	130	0.77
Maurice	1	1	pool	MW(J)	5	0	.	5	130	3.84
Maurice	1	2	glide	LSU	5	0	0	5	80	6.25
Maurice	1	2	glide	LNC	1	1	0	2	80	2.50
Maurice	1	2	glide	CC	3	0	0	3	80	3.75
Maurice	1	2	glide	RB(J)	1	1	0	2	80	2.50
Maurice	1	3	riffle	LNC	2	0	.	2	63	3.16
Maurice	1	3	riffle	CC	4	4	.		63	0.00
Maurice	1	3	riffle	RB(A)	1	0	.	1	63	1.58
Maurice	1	3	riffle	RB(J)	2	0	.	2	63	3.16
Maurice	1	3	riffle	MW(A)	1	0	.	1	63	1.58
Maurice	1	7	pool	LSU	4	1	.	5	41	12.25
Maurice	1	7	pool	CC	2	4	.		41	0.00
Maurice	2	4	riffle	CC	26	11	.	45	50	90.22
Maurice	2	4	riffle	RB(J)	2	0	.	2	50	4.01
Maurice	2	5	glide	CC	4	4	.		41	0.00
Maurice	2	5	glide	RB(A)	1	0	.	1	41	2.46
Maurice	2	5	glide	RB(J)	3	1	.	5	41	12.32
Maurice	2	6	pool	LSU	12	5	.	21	85	24.83
Maurice	2	6	pool	CSU	2	0	.	2	85	2.37
Maurice	2	6	pool	CC	1	2	.		85	0.00
Maurice	2	6	pool	RB(A)	1	0	.	1	85	1.18
Maurice	2	6	pool	RB(J)	5	2	.	8	85	9.46
Lynx	2	1	pool	NSC	1	0	.	1	55	1.82
Lynx	2	2	riffle	.	.	.	.		72	0.00
Lynx	2	3	glide	NSC	1	0	.	1	47	2.13
Lynx	2	3	glide	LSU	2	0	.	2	47	4.26
Lynx	3	4	glide	NSC	11	0	.	11	75	14.67
Lynx	3	4	glide	LNC	8	6	.	32	75	42.67
Lynx	3	4	glide	RB(J)	3	0	.	3	75	4.00
Lynx	3	5	riffle	LNC	24	5	.	30	48	63.16
Lynx	3	6	pool	NSC	3	3	.		50	0.00
Lynx	3	6	pool	LSU	5	1	.	6	50	12.12
Lynx	3	6	pool	LNC	6	0	.	6	50	12.12
Lynx	3	6	pool	RB(J)	1	0	.	1	50	2.02
Lynx	1	7	riffle	LSU	2	0	.	2	25	8.16
Lynx	1	7	riffle	CC	2	1	.	3	25	12.24

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
Mouth	May 26	1	NP	322	225		A	1	2		
Mouth	May 26	1	NP	61			J				
Mouth	May 26	2	LSU	468			A				
Mouth	May 26	2	LSU	480	1300		A				
Mouth	May 26	2	LSU	412	850		A				
Mouth	May 26	2	LSU	435	1100		A				
Mouth	May 26	2	LSU	273	200		A				
Mouth	May 26	2	LSU	406	800		A				
Mouth	May 26	2	PCC	69							
Mouth	May 26	3	LSU	433	825		A				
Mouth	May 26	3	LSU	470	850		A				
Mouth	May 26	3	LSU	444	925		A				
Mouth	May 26	3	LSU	334	500		A				
Mouth	May 26	3	LSU	414	850		A				
Mouth	May 26	3	LSU	445	1000		A				
Mouth	May 26	3	LSU	450	975		A				
Mouth	May 26	3	CSU	378	700		A				
Mouth	May 26	3	LSU	410	900		A				
Mouth	May 26	3	LSU	385	700		A				
Mouth	May 26	3	LSU	355	600		A				
Mouth	May 26	3	NSC	303	325		A				
Mouth	May 26	4	MW	424	625		A		4		15951
Mouth	May 26	4	LSU	194	75		J				
Mouth	May 26	4	RSC	120			A				
Mouth	May 26	4	CC	74							
Mouth	May 26	4	CC	89							
Mouth	May 26	4	CC	64							
Mouth	May 26	4	CC	67							
Mouth	May 26	4	KO	272	200	M	A	11	2		
Mouth	May 26	6	CSU	459	1300		A				
Mouth	May 26	6	MW	362	450		A	2	4		15952
Mouth	May 26	6	MW	324	300		A	3	3		15953
Mouth	May 26	6	CC	68							
Mouth	May 26	8	MW	492	1275		A	4	5		15954
Mouth	May 26	8	MW	337	437		A	5	4		
Mouth	May 26	8	MW	290	300		A	6	3		15955
Mouth	May 26	8	MW	301	300		A	7			15956
Mouth	May 26	8	MW	290	275		A	8	4		15957
Mouth	May 26	9	MW	348	425		A	9	5		15960
Mouth	May 26	9	CSU	350	600		A				
Mouth	May 26	9	LSU				A				
Mouth	May 26	9	GR	403	675		A	10	3		15961

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
Mouth	May 26	9	CC	15			J				
Mouth	May 27	10	BB	445	675		A				
Mouth	May 27	10	CSU	405	825		A				
Mouth	May 27	10	MW	113			J	MW10	1		15962
Mouth	May 27	10	LSU								
Mouth	May 27	10	LSU								
Mouth	May 27	10	RSC								
Mouth	May 27	10	RSC								
Mouth	May 27	12	MW	383	765		A	MW11	4		15963
Mouth	May 27	12	RSC	113							
Mouth	May 27	12	LSU	130							
Mouth	May 27	12	CC	112							
Mouth	May 27	12	CC	101							
Mouth	May 27	12	CC	80							
Mouth	May 27	12	MW								15953
Mouth	May 27	12	GR								15961
Mouth	May 27	12	RSC								
Mouth	May 27	13	LSU								
Mouth	May 27	14	LSU								
Mouth	May 27	17	NSC	404	775						
Mouth	May 27	17	CC	71							
Mouth	May 27	17	RSC								
Mouth	May 27	18	BB	282	225		A				
Mouth	May 27	18	BB	355	425		A				
Mouth	May 27	18	RSC	125							
Mouth	May 27	18	LSU								
Mouth	May 27	19	BB	319	175						
Mouth	May 27	19	LSU								
Mouth	May 27	20	BB	285	50		A				
Mouth	May 27	20	RSC	62							
Mouth	May 27	20	CC	114			A				
Mouth	May 28		NSC	405	900	F	A				
1a	May 28	3	MW	113			J				
1a	May 28	4	LSU	421	700		A				
1a	May 28	4	LSU	369	550		A				
1a	May 28	4	RSC				A				
1a	May 28	6	LSU	474	950		A				
1a	May 28	6	LSU	546	525		A				
1a	May 28	6	LSU	479	1175		A				
1a	May 28	6	LSU	424	850		A				
1a	May 28	6	LSU	361	500		A				
1a	May 28	6	LSU	467	1100	M	A				
1a	May 28	6	LSU	409	775		A				

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
1a	May 28	6	LSU	397	650		A				
1a	May 28	6	LSU	325	400		A				
1a	May 28	6	LSU	360	500		A				
1a	May 28	6	LSU	256	125		A				
1a	May 28	6	LSU	254	100		A				
1a	May 28	6	LSU	221	65		J				
1a	May 28	6	LSU	214	50		J				
1a	May 28	9	MW	189			A	12	2		
1a	May 28	9	MW	209			A	13	2		
1a	May 28	9	LSU								
1a	May 28	9	LSU								
1b	May 30		LNC	83							
1b	May 30		LNC	64							
1b	May 30		LNC	40							
1b	May 30		LNC	63							
1b	May 30		LNC	47							
1b	May 30		LNC	59							
1b	May 30		LNC	41							
1b	May 30		LNC	75							
1b	May 30		LNC	44							
1b	May 30		LNC	66							
1b	May 30		LNC	74							
1b	May 30		LNC	72							
1b	May 30		LNC	59							
1b	May 30		LNC	68							
1b	May 30		LNC	67							
1b	May 30		LNC	51							
1b	May 30		LNC	62							
1b	May 30		LNC	42							
1b	May 30		LNC	63							
1b	May 30		LNC	55							
1b	May 30		CC	62							
1b	May 30		CC	42							
1b	May 30		LSU	390	815						
1b	May 30		LSU	388	775						
1b	May 30		MW	88			J	14	0		
1b	May 30		RSC	54							
1b	May 30		RSC	40							
1b	May 30		RSC	40							
1b	May 30		BB	120			J				
1b	May 30		CC	70							
1b	May 30		CC	63							
1b	May 30		LNC	45							



APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
1b	May 30		LNC	44							
1b	May 30		LNC	50							
1b	May 30		LNC	64							
1b	May 30		LNC	63							
1b	May 30		LNC	55							
1b	May 30		LNC	42							
1b	May 30		LNC	44							
1b	May 30		LNC	44							
1b	May 30		LNC	55							
1b	May 30		LNC	45							
5	May 31	1	LW	280	275		A	1	4		
5	May 31	1	LW	275	250		A	2	4		
5	May 31	1	LW	285	300		A	3	4		
5	May 31	1	LW	295	300		A	4	3		
5	May 31	1	LW	315	400		A	5	4		
5	May 31	1	LW	280	275		A	6	3		
5	May 31	1	WSU	370	750		A				
5	May 31	2	LW	310	350		A	7	4		
5	May 31	2	LW	305	350		A	8	5		
5	May 31	2	LW	350	500		A	9	6		
5	May 31	2	LW	335	550		A	10	6		
5	May 31	2	LW	275	275		A	11	4		
5	May 31	2	LW	350	575		A	12	6		
5	May 31	2	LW	285	300		A	13	5		
5	May 31	2	LW	295	360		A	14	4		
5	May 31	2	LW	350	600		A	15	7		
5	May 31	2	LW	250	250		A	16	3		
5	May 31	2	LW	295	325		A	17	4		
5	May 31	2	LW	310	400		A	18	4		
5	May 31	2	LW	260	275		A	19	3		
5	May 31	2	LSU	430	1150		A				
5	May 31	2	NP	535	1200		A	2	4		
5	May 31	2	WSU	424	1125		A				
5	May 31	2	WSU	445	1125		A				
5	May 31	2	WSU	510	2000		A				
5	May 31	2	WSU	454	1300		A				
5	May 31	2	WSU	453	1250		A				
5	May 31	2	WSU	478	1575		A				
5	May 31	2	WSU	465	1500		A				
5	May 31	2	WSU	448	1250		A				
5	May 31	2	WSU	453	1250		A				
5	May 31	2	WSU	468	1500		A				
5	May 31	2	WSU	440	1250		A				

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
5	May 31	2	WSU	451	1075		A				
5	May 31	2	WSU	430	1100		A				
5	May 31	2	WSU	468	1350		A				
5	May 31	2	WSU	444	1225		A				
5	May 31	2	WSU	454	1325		A				
5	May 31	2	WSU	434	1150		A				
5	May 31	2	WSU	479	1600		A				
5	May 31	2	WSU	432	1250		A				
5	May 31	2	WSU	408	900		A				
5	May 31	2	LW	235	150		A	20	2		
5	Jun 3		CSU	380	800		A				
5	Jun 3		NP	500	575	F	A	1	4		
5	Jun 3		NP	410	325	M	A	2	3		
Mouth	Jun 12	1	MW	485	1000		A	1	6		15926
Mouth	Jun 12	1	MW	255	210		A	2	3		15927
Mouth	Jun 12	2	MW	345	510		A	3	4		15928
Mouth	Jun 12	2	MW	365	450		A	4	5		15930
Mouth	Jun 12	3	MW	355	400		A	5	4		15931
Mouth	Jun 12	3	MW	380	450		A	6	5		15932
Mouth	Jun 12	3	MW	350	325		A	7	4		15933
Mouth	Jun 12	3	MW	325	330		A	8	4		15934
Mouth	Jun 12	3	MW	360	475		A	9	4		15935
Mouth	Jun 12	3	MW	280	260		A	10	2		15936
Mouth	Jun 12	3	MW	215	140		A	11	2		
Mouth	Jun 12	3	MW	245	175		A	12	2		15937
Mouth	Jun 12	3	NP	220	95		J	13	1		
Mouth	Jun 12	4	MW	250	200		A	14	2		15938
Mouth	Jun 12	4	MW	170	60		J				
Mouth	Jun 12	4	MW	150	35		J	16	1		
Mouth	Jun 12	5	MW	360	500		A	17	4		15939
Mouth	Jun 12	5	MW	385	525		A	18	4		15940
Mouth	Jun 12	5	NP	640	1750		A	19	5	15367	
Mouth	Jun 12	5	NP	630	1500		A	20	5		15941
Mouth	Jun 12	5	NP	595	1250		A	21	5		15942
Mouth	Jun 12	5	NP	520	850		A	22	4		15943
Mouth	Jun 12	6	LSU	450	1200		A				
Mouth	Jun 12	6	MW	320	275		A	24	3		
Mouth	Jun 12	6	MW	350	325		A	25	4		
Mouth	Jun 12	6	MW	365	400		A	26	4		
Mouth	Jun 12	6	MW	310	250		A	27	3		
Mouth	Jun 12	6	MW	275	225		A	28	3		
Mouth	Jun 12	6	MW	260	200		A	29	3		
Mouth	Jun 13	3	MW	197	80		J	301	2		

Second draft: subject to revision

- A29 -

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
Mouth	Jun 13	4	CSU	484	1425	M	A				
Mouth	Jun 13	4	CSU	400	900	F	A				
Mouth	Jun 13	5	LSU	428	1000	F	A				
Mouth	Jun 13	5	CSU	430	1100	M	A				
Mouth	Jun 13	5	LSU	420	900	M	A				
Mouth	Jun 13	5	CSU	363	700	F	A				
Mouth	Jun 13	7	LSU	411	725		A				
Mouth	Jun 13	8	MW	395	675		A	801	5	11425	
Mouth	Jun 13	8	MW	240	275		A	802	2		
Mouth	Jun 13	8	MW	212	100		A	803	2		
Mouth	Jun 13	8	MW	290	275		A	804	4	11426	
Mouth	Jun 13	8	MW	195	80		J	805	1		
Mouth	Jun 13	8	GR	132				806	1		
Mouth	Jun 13	9	MW	444	950		A	901	5	11427	
Mouth	Jun 13	9	GR	116			J	902	1		
Mouth	Jun 13	9	GR	96			J	903	1		
Mouth	Jun 12		MW	108			J				
Mouth	Jun 12		MW	93			J				
Mouth	Jun 12		MW	119			J				
Mouth	Jun 12		MW	101			J				
Mouth	Jun 12		MW	148			J				
Mouth	Jun 12		MW	97			J				
Mouth	Jun 12		MW	114			J				
Mouth	Jun 12		MW	122			J				
Mouth	Jun 12		MW	108			J				
Mouth	Jun 13		MW	107			J				
Mouth	Jun 13		MW	102			J				
Mouth	Jun 13		MW	102			J				
Mouth	Jun 13		MW	104			J				
1a	Jun 14	1	MW	241	170		J	1	2		
1a	Jun 14	1	MW	176	60		J	2	2		
1a	Jun 15	1	NSC	240	240		A				
1a	Jun 15	1	LSU	275	290		A				
1a	Jun 15	1	CSU	300	400		A				
1a	Jun 15	1	CSU	280	280		A				
1a	Jun 15	2	NSC	345	550	M	A				
1a	Jun 15	2	LSU	380	725	M	A				
1a	Jun 15	2	LSU	310	400		A				
1a	Jun 15	2	CSU	255	225		A				
1a	Jun 15	2	CSU	300	375		A				
1a	Jun 15	2	CSU	275	300		A				
1a	Jun 15	4	CSU	275	280		A				
1a	Jun 15	4	LSU	325	495	F	A				

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
1a	Jun 15	5	MW	280	260		A		4		
1a	Jun 15	7	MW	193	70		A		2		
1a	Jun 15	10	LSU	390	750	M	A				
1a	Jun 15	10	LNC	65							
1a	Jun 15	10	LC	63							
1a	Jun 15	11	LNC	70							
1a	Jun 15	11	LNC	55							
1a	Jun 15	11	LNC	50							
1a	Jun 15	11	LNC	50							
1a	Jun 15	11	LNC	50							
1a	Jun 15	11	LNC	48							
1a	Jun 15	11	LNC	48							
1a	Jun 15	11	LNC	45							
1a	Jun 15	11	LNC	43							
1a	Jun 15	11	LNC	46							
1a	Jun 15	12	LNC	55							
1a	Jun 15	12	LNC	62							
1a	Jun 15	12	DV	249	150		A				
1a	Jun 15	14	MW	31							
1a	Jun 15	14	MW	27							
2	Jun 16	1	RSC	35							
2	Jun 16	1	MW	34							
2	Jun 16	1	MW	36							
2	Jun 16	1	MW	39							
2	Jun 16	1	MW	38							
2	Jun 16	1	MW	39							
2	Jun 16	1	MW	41							
2	Jun 16	1	MW	32							
2	Jun 16	1	MW	39							
2	Jun 16	1	MW	36							
2	Jun 16	1	MW	36							
2	Jun 16	1	MW	41							
2	Jun 16	1	MW	32							
2	Jun 16	1	MW	26							
2	Jun 16	1	MW	39							
2	Jun 16	1	MW	43							
2	Jun 16	1	MW	36							
2	Jun 16	1	MW	34							
2	Jun 16	1	MW	33							
2	Jun 16	1	MW	39							
2	Jun 16	1	MW	38							
2	Jun 16	1	MW	33							
2	Jun 16	1	MW	38							

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
2	Jun 16	1	MW	46							
2	Jun 16	1	MW	38							
2	Jun 16	1	LNC	51							
2	Jun 16	1	LNC	52							
2	Jun 16	1	LNC	43							
2	Jun 16	1	LNC	42							
2	Jun 16	1	LNC	47							
2	Jun 16	1	LNC	43							
2	Jun 16	1	LNC	44							
2	Jun 16	1	LNC	46							
2	Jun 16	1	LNC	45							
2	Jun 16	1	LNC	44							
2	Jun 16	1	LNC	44							
2	Jun 16	1	LNC	36							
2	Jun 16	1	CC	56							
2	Jun 16	1	CC	52							
2	Jun 16	1	CC	39							
2	Jun 16	1	CC	66							
2	Jun 16	1	CC	64							
2	Jun 16	1	CC	36							
2	Jun 16	1	CC	55							
2	Jun 16	1	CC	37							
2	Jun 16	1	CC	34							
2	Jun 16	1	CC	57							
2	Jun 16	1	CC	56							
2	Jun 16	1	CC	41							
2	Jun 16	1	LSU	48							
2	Jun 16	1	LSU	88							
2	Jun 16	2	GR	225	130		A	1	2		
2	Jun 16	2	MW	192	70		A	1	2		
2	Jun 16	2	LNC	108	22		A				
2	Jun 16	2	LNC	78							
2	Jun 16	2	CC	63							
2	Jun 16	2	LNC	48							
2	Jun 16	3	LSU	180	70		J				
2	Jun 16	4	MW	175	65		A	2	2		
2	Jun 16	5	LSU	440	775	M	A				
2	Jun 16	5	LSU	370	425	M	A				
2	Jun 16	5	LSU	405	700	F	A				
2	Jun 16	5	LSU	450	725	F	A				
2	Jun 16	5	LSU	395	625	F	A				
2	Jun 16	5	RSC	108			A				
2	Jun 16	6-8	MW	237	150		A	3	3		

APPENDIX VIII

Morphometric and age data collected from fish sampled from the Moberly River May to June, 1990.

Reach	Date	Site	Species	Length fork (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
								#	age	rec'd	rel'd
2	Jun 16	6-8	MW	218	110		A	4	2		
2	Jun 16	6-8	LNC	73							
2	Jun 16	6-8	LNC	60							
2	Jun 16	6-8	LNC	44							
2	Jun 16	6-8	CC	55							
2	Jun 16	6-8	CC	57							
2	Jun 16	6-8	CC	50							
2	Jun 16	6-8	CC	35							
2	Jun 16	6-8	CC	38							
2	Jun 16	6-8	CC	51							
2	Jun 16	6-8	CC	37							
2	Jun 16	6-8	CC	37							
2	Jun 16	6-8	CC	45							
2	Jun 16	9	GR	419	900		J	2	4		
2	Jun 16	10	LSU	390	775	F	A				
2	Jun 16	15	GR	195	26		A	3	2		
2	Jun 16	15	BB	275	125		A				
2	Jun 16	15	LSU	145	55		J				
2	Jun 16	15	MW	114	20		J	5	1		
2	Jun 16	15	MW	95			J	N/S			
2	Jun 16	15	GR	127			J	4	1		
2	Jun 16	15	LNC	79							
2	Jun 16	15	LNC	82							
2	Jun 16	15	LNC	72							
2	Jun 16	15	LNC	80							
2	Jun 16	15	LNC	63							
2	Jun 16	15	LNC	63							
2	Jun 16	15	LNC	65							
2	Jun 16	15	MW	32			J				
2	Jun 16	15	CC	53							
2	Jun 16	15	MW	37			J				

APPENDIX IX

Beach seine catches of fish from the Moberly River, May to June, 1990

Date	Location	Set	Habitat type	Depth (m)		Substrate type	Velocity (m/s)	Sample area (m <sup>2</sup> )	MW	RBT	GR	DV	NP	LWF	BB	RSC	PCC	LKC	NSC	LNC	KO	LSU	CSU	WSU	CC
				mean	max																				
MAY 27	mouth	1	G	0.3	1.0		0.0	200					1		1										
MAY 27	mouth	2	G	0.7	1.5		0.2	200								1						6			
MAY 27	mouth	3	G	0.7	1.5		0.3	200											1			10	1		
MAY 27	mouth	4	G	1.5	2.0		0.0	200	1						1						1	1		4	
MAY 27	mouth	5	G	1.5	2.0		0.0	150																	
MAY 27	mouth	6	G	1.5	2.0		0.0	200	2													1		1	
MAY 27	mouth	7	G	0.4	1.0		0.1	80																	
MAY 27	mouth	8	G	1.5	2.0		0.5	150	4																
MAY 27	mouth	9	G	2.0	2.5		1.0	150	1		1											1	1	1	
MAY 28	mouth	1	G	1.5	2.0	GC	0.4	200	1						1	2						2			
MAY 28	mouth	2	G	1.5	2.0	GC	0.0	200	2		1				2							1		3	
MAY 28	mouth	3	G	1.0	1.5	GC	0.3	200														1			
MAY 28	mouth	4	G	1.5	2.0	GC	0.3	150														1			
MAY 28	mouth	5	G	1.5	2.0	GC	2.0	300																	
MAY 28	mouth	6	G	1.5	2.0	GC	2.0	300																	
MAY 28	mouth	7	G	1.5	2.0	FCG	0.8	300																1	
MAY 28	mouth	8	G	2.0	2.0	FGC	0.8	200														1			
MAY 28	mouth	9	G	1.5	2.0	GC	0.3	200							2	1						1			
MAY 28	mouth	10	G	1.5	2.0	GC	0.3	300							1	1								1	
JUNE 14	mouth	1	G	1.0	2.0	F	0.1	500																	
JUNE 14	mouth	2	G	1.0	2.0	F	0.1	300																	
JUNE 14	mouth	3	G	0.8	2.0	F	0.1	250	4						1									1	
JUNE 14	mouth	4	G	1.0	1.5	FC		200																	
JUNE 14	mouth	5	G	1.2	2.0	CF	0.2	400							1							2			
JUNE 14	mouth	6	G	0.8	1.5	C	0.5	125							1							2	2		
JUNE 14	mouth	7	G	0.5	0.4	FC	0.5	70							1										
JUNE 14	mouth	8	G	0.7	1.0	CF	0.5	140	5		1				4						1	1			
JUNE 14	mouth	9	G	0.8	1.5	CF	0.5	120	1		2													4	
JUNE 14	mouth	10	G	1.5	2.0	F	0.0	400																4	
MAY 29	1A	1	G	1	2	GF	3	150																	
MAY 29	1A	2	G	1	2	GF	3	150																	
MAY 29	1A	3	G	1	2	F	2	75	1																
MAY 29	1A	4	P	1	2	F	0	75							1							2			
MAY 29	1A	6	P	1	2	F	0	100																	
MAY 29	1A	7	G	1	1	G	2	300														14			

Second draft: subject to revision  
- A33 -

APPENDIX IX

Beach seine catches of fish from the Moberly River, May to June, 1990

Date	Location	Set	Habitat type	Depth (m)		Substrate type	Velocity (m/s)	Sample area (m2)	MW	RBT	GR	DV	NP	LWF	BB	RSC	PCC	LKC	NSC	LNC	KO	LSU	CSU	WSU	CC
				mean	max																				
MAY 29	1A	8	G	1	1	G	2	800	2																
MAY 29	1A	9	G	1	1	G	2	400	2																
MAY 31	1A	1	R	0	1	GC	1	150										5							
MAY 31	1A	2	G	0	1	GC	1	120										2						1	
MAY 31	1A	3	G	0	1	GC	1	120	1									21			1			1	
MAY 31	1A	4	G	0	1	GC	1	120						1				6							
MAY 31	1A	5	S	1	2	FG	0	100							3		2	15			1				
JUNE 15	1A	1	G	0	0	G	0	50																	
JUNE 15	1A	2	R	0	0	G	1	60											2						
JUNE 15	1A	3	G	0	1	G	0	50											1						
JUNE 16	1A	1	G	1	1	F	0	36											1		1		2		
JUNE 16	1A	2	G	1	1	F	0	60											1		2		3		
JUNE 16	1A	3	G	0	1	G	2	120																	
JUNE 16	1A	4	S	0	1	F	0	50													1		1		
JUNE 16	1A	5	G	0	1	G	2	120	1									9		1					
JUNE 16	1A	6	G	0	1	G	2	180																	
JUNE 16	1A	7	G	1	1	GF	2	100	1												1				
JUNE 16	1A	8	G	0	0	G	2	40																	
JUNE 16	1A	9	R-G	0	1	GF	1	75							1				2		1				
JUNE 16	1A	10	G	1	1	F	0	50									1			1		1			
JUNE 16	1A	11	G	1	1	G	1	80												10					
JUNE 16	1A	12	G	1	1	F	0	40																	
JUNE 16	1A	13	R	0	1	GC	1	125												3					
JUNE 16	1A	14	G	0	1	G	2	100												3					
JUNE 16	1A	15	G	1	1	GF	1	75	2											11					
JUNE 16	1A	16	G	0	0	GF	1	50																	
MAY 31	1B	1	G	1	1	FG	1	40											9					0	
MAY 31	1B	2	G	1	1	FG	1	25											6					1	
MAY 31	1B	3	R	0	0	G	1	75											3						
MAY 31	1B	4	G	0	0	F	0	75											4					1	
MAY 31	1B	5	CG	175	1	CG	2	175																	
MAY 31	1B	6	CG	240	1	CG	2	240																	
JUNE 17	2	1	S	0	0	G	0	120	32						1				45		2			23	
JUNE 17	2	2	G	1	2	C	0	60	1		1								3					1	
JUNE 17	2	3	G	1	2	FC	1	120	3										17		1			6	

Second draft: subject to revision  
 - A34 -



APPENDIX IX

Beach seine catches of fish from the Moberly River, May to June, 1990

Date	Location	Set	Habitat type	Depth (m)		Substrate type	Velocity (m/s)	Sample area (m2)	MW	RBT	GR	DV	NP	LWF	BB	RSC	PCC	LKC	NSC	LNC	KO	LSU	CSU	WSU	CC
				mean	max																				
JUNE 17	2	4	G	1	2	FC	1	120	3															3	
JUNE 17	2	5	G	1	1	FC	0	75							1							5			
JUNE 17	2	6	G	1	2	C	2	40	1											3				9	
JUNE 17	2	7	G	1	2	C	2	40	1											1				10	
JUNE 17	2	8	G	1	2	C	2	40																3	
JUNE 17	2	9	G	1	1	FC	0	35	3		1				2					3					
JUNE 17	2	10	G	1	2	FC	0	30							1							1		1	
JUNE 17	2	11	G	1	2	FC	0	90														1			
JUNE 17	2	12	G	1	1	FC	0	40																	
JUNE 17	2	13	G	0	1	G	1	28							2									2	
JUNE 17	2	14	G	0	0	G	0	10			1														
JUNE 17	2	15	G	0	0	F	0	40	4		2			1						7		1		1	
JUNE 1	5	1	G	2	3	FG	0	150						6									1		
JUNE 1	5	2	G	2	3	FG	0	300					1	36								1		57	
JUNE 1	5	3	G	2	2	F	0	50																	
JUNE 1	5	4	G	2	2	G	0	30						4										2	

Second draft: subject to revision  
- A35 -

## APPENDIX X

## Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex Maturity	Scale		Tag	
								#	age	recovery	release
Graham R.	33	2	Aug 1	MW	129	21.65	J	1	1		
Graham R.	33	2	Aug 1	MW	136	26.10	J	2	2		
Graham R.	33	2	Aug 1	MW	153	41.80	J	3	2		
Graham R.	33	3	Aug 1	MW	42	0.70	J				
Graham R.	33	3	Aug 1	CC	87						
Graham R.	33	4	Aug 1	MW	332	450.00	A	4	3		11464
Graham R.	33	4	Aug 1	MW	253	240.00	A	5	3		11463
Graham R.	33	4	Aug 1	MW			J				
Graham R.	29	1	Aug 1	MW	278	175.00	A	6			11462
Graham R.	29	1	Aug 1	MW	215	110.00	A	7	3		
Graham R.	29	1	Aug 1	AG	190	85.00	J	1	2		
Graham R.	29	1	Aug 1	MW	310	280.00	A	8	3		11461
Graham R.	29	1	Aug 1	AG	274	260.00	A	2	3		11460
Graham R.	29	2	Aug 1	MW	41	0.45	J				
Graham R.	29	2	Aug 1	MW	41	0.60	J				
Graham R.	29	2	Aug 1	CC	50						
Graham R.	29	4	Aug 1	LSU	373						
Graham R.	29	4	Aug 1	MW	322	340.00	A	9	4		11459
Graham R.	29	4	Aug 1	MW	252	180.00	A	10	3		11458
Graham R.	29	4	Aug 1	MW	305	330.00	A	11	4		11457
Graham R.	29	4	Aug 1	MW	243	170.00	A				11456
Graham R.	29	4	Aug 1	MW	159	60.00	J	12	2		
Graham R.	29	4	Aug 1	AG	202	110.00	A	3	2		
Graham R.	27	1	Aug 1	RB	342	585.00	A	1	3		11455
Graham R.	27	1	Aug 1	DV	253	200.00	A				11454
Graham R.	27	2	Aug 1	GR	244	200.00	A	4	3		
Graham R.	27	2	Aug 1	GR	265	255.00	A	5	3		
Graham R.	27	2	Aug 1	MW	231	170.00	A	13	3		11452
Graham R.	27	2	Aug 1	MW	237	170.00	A	14	3		
Graham R.	27	2	Aug 1	MW	160	80.00	J	15	2		
Graham R.	27	2	Aug 1	MW	140	75.00	J	16	2		
Bluegrave Cr	1	1.1	Aug 2	DV	190	73.70	A				
Bluegrave Cr	1	1.1	Aug 2	DV	157	39.65	J				
Bluegrave Cr	1	1.1	Aug 2	LSU	103		J				
Bluegrave Cr	1	1.1	Aug 2	RB	81	6.85	J	1	0		
Bluegrave Cr	1	1.1	Aug 2	RB	161	47.50	J	2	1		
Bluegrave Cr	1	1.1	Aug 2	RB	212	120.50	J	3	2		
Bluegrave Cr	1	1.1	Aug 2	RB	73	4.25	J	4	0		
Bluegrave Cr	1	1.1	Aug 2	MW	140	27.95	J	1	1		
Bluegrave Cr	1	1.1	Aug 2	MW	120	17.05	J	2	1		
Bluegrave Cr	1	1.1	Aug 2	LNC	80						
Bluegrave Cr	1	1.1	Aug 2	CC	68						
Bluegrave Cr	1	1.1	Aug 2	CC	83						
Bluegrave Cr	1	1.1	Aug 2	CC	70						
Bluegrave Cr	1	1.1	Aug 2	CC	67						
Bluegrave Cr	1	1.1	Aug 2	CC	62						

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Scale #	age	Tag recovery	release
Bluegrave Cr	1	1.1	Aug 2	CC	52							
Bluegrave Cr	1	1.1	Aug 2	CC	58							
Bluegrave Cr	1	1.2	Aug 2	RB	148	36.70	J		5		1	
Bluegrave Cr	1	1.2	Aug 2	CC	90							
Bluegrave Cr	1	1.2	Aug 2	LNC	68							
Bluegrave Cr	1	1.2	Aug 2	CC	71							
Bluegrave Cr	1	1.2	Aug 2	CC	55							
Bluegrave Cr	1	1.2	Aug 2	NSC	78							
Bluegrave Cr	1		Aug 2	MW	184	85.05			3		2	
Bluegrave Cr	1		Aug 2	MW	128	20.50			4		1	
Bluegrave Cr	1		Aug 2	GR	262	210.00			1		2	
Bluegrave Cr	1		Aug 2	GR	179	60.25			2		1	
Bluegrave Cr	1		Aug 2	RB	165	48.65			6		1	
Horseshoe Cr	1	1.1	Aug 2	CC	69							
Horseshoe Cr	1	1.1	Aug 2	CC	52							
Horseshoe Cr	1	1.1	Aug 2	CC	61							
Horseshoe Cr	1	1.1	Aug 2	CC	72							
Horseshoe Cr	1	1.1	Aug 2	CC	69							
Horseshoe Cr	1	1.1	Aug 2	CC	67							
Horseshoe Cr	1	1.1	Aug 2	CC	58							
Horseshoe Cr	1	1.1	Aug 2	CC	59							
Horseshoe Cr	1	1.1	Aug 2	CC	63							
Horseshoe Cr	1	1.1	Aug 2	LNC	89							
Horseshoe Cr	1	1.1	Aug 2	LNC	55							
Horseshoe Cr	1	1.1	Aug 2	LNC	73							
Horseshoe Cr	1	1.1	Aug 2	LNC	52							
Horseshoe Cr	1	1.2	Aug 2	MW	136	24.40	J		1		1	
Horseshoe Cr	1	1.2	Aug 2	MW	144	28.20	J		2		1	
Horseshoe Cr	1	1.2	Aug 2	MW	199	89.90	J		3		2	
Horseshoe Cr	1	1.2	Aug 2	CC	50							
Horseshoe Cr	1	1.2	Aug 2	CC	52							
Horseshoe Cr	1	1.2	Aug 2	CC	73							
Horseshoe Cr	1	1.2	Aug 2	CC	75							
Horseshoe Cr	1	1.2	Aug 2	CC	62							
Horseshoe Cr	1	1.2	Aug 2	CC	62							
Horseshoe Cr	1	1.2	Aug 2	CC	58							
Horseshoe Cr	1	1.2	Aug 2	CC	52							
Horseshoe Cr	1	1.2	Aug 2	CC	63							
Horseshoe Cr	1	1.2	Aug 2	CC	70							
Horseshoe Cr	1	1.2	Aug 2	CC	68							
Horseshoe Cr	1	1.2	Aug 2	CC	40							
Horseshoe Cr	1	1.2	Aug 2	CC	51							
Horseshoe Cr	1	1.3	Aug 2	LNC	67							
Horseshoe Cr	1	1.3	Aug 2	MW	99	9.35	J		4		0	
Horseshoe Cr	1	1.3	Aug 2	MW	144	30.10	J		5		2	
Horseshoe Cr	1	1.3	Aug 2	MW	148	32.30	J		6		2	
Horseshoe Cr	1	1.3	Aug 2	MW	170	50.60	J		7		2	

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
									#	age	recovery	release
Horseshoe Cr	1	2.1	Aug 2	RB	92	7.75	J		1	0		
Horseshoe Cr	1	2.1	Aug 2	RB	78	5.25	J		2	0		
Horseshoe Cr	1	2.1	Aug 2	RB	84	6.60	J		3	0		
Horseshoe Cr	1	2.1	Aug 2	RB	79	6.10	J		4	0		
Horseshoe Cr	1	2.1	Aug 2	RB	79	6.30	J		5	0		
Horseshoe Cr	1	2.1	Aug 2	RB	77	4.85	J		6	0		
Horseshoe Cr	1	2.1	Aug 2	RB	76	4.65	J		7	0		
Horseshoe Cr	1	2.1	Aug 2	MW	244	105.00	J		8	2		
Horseshoe Cr	1	2.1	Aug 2	MW	189	74.30	J		9	2		
Horseshoe Cr	1	2.1	Aug 2	MW	138	26.00	J		10	1		
Horseshoe Cr	1	2.1	Aug 2	LSU	102							
Horseshoe Cr	1	2.1	Aug 2	LSU	182							
Horseshoe Cr	1	2.1	Aug 2	LSU	101							
Horseshoe Cr	1	2.1	Aug 2	CC	66							
Horseshoe Cr	1	2.1	Aug 2	CC	73							
Horseshoe Cr	1	2.1	Aug 2	CC	82							
Horseshoe Cr	1	2.1	Aug 2	CC	57							
Horseshoe Cr	1	2.1	Aug 2	CC	58							
Horseshoe Cr	1	2.1	Aug 2	CC	62							
Horseshoe Cr	1	2.1	Aug 2	CC	67							
Horseshoe Cr	1	2.1	Aug 2	CC	67							
Horseshoe Cr	1	2.1	Aug 2	CC	58							
Horseshoe Cr	1	2.1	Aug 2	CC	39							
Horseshoe Cr	1	2.2	Aug 2	LSU	365							
Horseshoe Cr	1	2.2	Aug 2	DV	305	280.00		A				
Horseshoe Cr	1	2.2	Aug 2	DV	317	325.00		A				11450
Horseshoe Cr	1	2.2	Aug 2	GR	238	150.00		A	1	2		11475
Horseshoe Cr	1	2.2	Aug 2	WF	207	91.00		J	11	2		
Horseshoe Cr	1	2.2	Aug 2	WF	172	54.30		J	12	2		
Horseshoe Cr	1	2.2	Aug 2	WF	219	120.00		J	13	2		
Horseshoe Cr	1	2.2	Aug 2	WF	187	66.90		J	14	1		
Horseshoe Cr	1	2.2	Aug 2	WF	189	83.65		J	15	2		
Horseshoe Cr	1	2.2	Aug 2	WF	169	51.60		J	16	2		
Horseshoe Cr	1	2.2	Aug 2	WF	90	7.20		J	17	1		
Horseshoe Cr	1	2.2	Aug 2	WF	155	37.80		J	18	2		
Horseshoe Cr	1	2.2	Aug 2	LSU	103							
Horseshoe Cr	1	2.2	Aug 2	RB	121	18.75		J	8	1		
Horseshoe Cr	1	2.2	Aug 2	RB	91	8.95		J	9	0		
Horseshoe Cr	1	2.2	Aug 2	RB	83	6.00		J	10	0		
Horseshoe Cr	1	2.2	Aug 2	CC	74							
Horseshoe Cr	1	2.2	Aug 2	CC	71							
Horseshoe Cr	1	2.2	Aug 2	CC	79							
Horseshoe Cr	1	2.2	Aug 2	CC	85							
Horseshoe Cr	1	2.2	Aug 2	CC	66							
Horseshoe Cr	1	2.2	Aug 2	CC	61							
Horseshoe Cr	1	2.2	Aug 2	CC	63							
Horseshoe Cr	1	2.2	Aug 2	LNC	56							

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
									#	age	recovery	release
Horseshoe Cr	1	2.2	Aug 2	GR	131	22.00		J	2	1		
Horseshoe Cr	16	1.1	Aug 3	RB	223	132.70		A	1	2		
Horseshoe Cr	16	1.1	Aug 3	DV	162	49.10						
Horseshoe Cr	16	1.1	Aug 3	CC	77							
Horseshoe Cr	16	1.1	Aug 3	CC	56							
Horseshoe Cr	16	1.1	Aug 3	CC	57							
Horseshoe Cr	16	1.1	Aug 3	CC	52							
Horseshoe Cr	16	1.2	Aug 3	CC	92							
Horseshoe Cr	16	1.2	Aug 3	CC	78							
Horseshoe Cr	16	1.2	Aug 3	CC	53							
Horseshoe Cr	16	1.2	Aug 3	CC	67							
Horseshoe Cr	16	1.3	Aug 3	CC	58							
Horseshoe Cr	16	1.3	Aug 3	CC	50							
Horseshoe Cr	16	1.3	Aug 3	CC	50							
Horseshoe Cr	16	1.3	Aug 3	CC	58							
Horseshoe Cr	16	1.3	Aug 3	CC	48							
Horseshoe Cr	16	1.3	Aug 3	CC	47							
Horseshoe Cr	16		Aug 3	RB	168	69.15		J	2	1		
Horseshoe Cr	16		Aug 3	DV	151	38.35		J				
Horseshoe Cr	16		Aug 3	RB	119	23.75		J	3	1		
Horseshoe Cr	16		Aug 3	RB	153	52.70		J	4	1		
Horseshoe Cr	16		Aug 3	RB	152	42.25		J	5	1		
Horseshoe Cr	16		Aug 3	RB	134	32.85		J	6	1		
Horseshoe Cr	16		Aug 3	DV	153	39.90		J				
Horseshoe Cr	16		Aug 3	RB	140	35.30		J	7	1		
Horseshoe Cr	16		Aug 4	RB	182	80.85		J	8	2		
Horseshoe Cr	16		Aug 4	RB	154	58.75		J	9	1		
Bluegrave Cr	15		Aug 4	DV	339	390.00		A				
Bluegrave Cr	15	1.1	Aug 4	CC	61							
Bluegrave Cr	15	1.2	Aug 4	CC	107							
Bluegrave Cr	15	1.2	Aug 4	CC	90							
Bluegrave Cr	15	1.2	Aug 4	CC	57							
Bluegrave Cr	15	2.1	Aug 4	DV	167	43.30		J				
Bluegrave Cr	15	2.1	Aug 4	DV	87	7.10		J				
Bluegrave Cr	15	2.1	Aug 4	RB	143	42.70		J	1	1		
Bluegrave Cr	15		Aug 4	DV	377	575.00		A				
Bluegrave Cr	15		Aug 4	DV	148	33.80		J				
Bluegrave Cr	15		Aug 4	DV	148	31.45		J				
Bluegrave Cr	15		Aug 4	DV	92	8.05		J				
Bluegrave Cr	15		Aug 4	DV	86	7.50		J				
Bluegrave Cr	15		Aug 4	DV	93	9.40		J				
Bluegrave Cr	15		Aug 4	RB	142	34.60		J	2	1		
Bluegrave Cr	15		Aug 4	RB	164	58.00		J	3	1		
Bluegrave Cr	15		Aug 4	RB	136	37.85		J	4	1		
Bluegrave Cr	15		Aug 4	DV	322	405.00		A				
Bluegrave Cr	15		Aug 4	DV	159	40.35		J				
Bluegrave Cr	15		Aug 4	DV	146	33.45		J				

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
									#	age	recovery	release
Bluegrave Cr	15		Aug 4	DV	88	7.50		J				
Bluegrave Cr	15		Aug 4	RB	151	51.00		J	5	1		
Bluegrave Cr	15		Aug 4	RB	166	53.05		J	6	1		
Bluegrave Cr	15		Aug 4	RB	155	43.40		J	7	1		
Bluegrave Cr	15		Aug 4	CC	86							
Bluegrave Cr	15		Aug 4	CC	98							
Bluegrave Cr	15		Aug 4	CC	85							
Bluegrave Cr	15		Aug 4	CC	68							
Bluegrave Cr	15		Aug 4	CC	68							
Chowade R.	5	3	Aug 5	WF	180	65.05		J	1	2		
Chowade R.	5	3	Aug 5	WF	197	89.70		J	2	2		
Chowade R.	5	3	Aug 5	WF	135	20.80		J	3	2		
Chowade R.	5	3	Aug 5	WF	98	8.75		J	4	1		
Chowade R.	5	3	Aug 5	WF	96	7.90		J	5	1		
Chowade R.	5	3	Aug 5	WF	142	27.40		J	6	2		
Chowade R.	5	3	Aug 5	WF	45	0.75		J				
Chowade R.	5	3	Aug 5	WF	45	0.80		J				
Chowade R.	5	3	Aug 5	WF	38	0.50		J				
Chowade R.	5	3	Aug 5	WF	43	0.65		J				
Chowade R.	5	3	Aug 5	WF	93	7.85		J	7	1		
Chowade R.	5	3	Aug 5	GR	146	31.65		J	1	1		
Chowade R.	5	4-5	Aug 5	MW	291	255.00		A	8	3		11477
Chowade R.	5	4-5	Aug 5	MW	293	315.00		A	9	3		11478
Chowade R.	5	4-5	Aug 5	MW	257	220.00		A	10	3		11479
Chowade R.	5	4-5	Aug 5	MW	196	97.80		A	11	2		
Chowade R.	5	4-5	Aug 5	MW	258	235.00		A	12	3		11480
Chowade R.	5	4-5	Aug 5	MW	48	0.85		J				
Chowade R.	5	4-5	Aug 5	MW	105	9.90		J	13	1		
Chowade R.	5	4-5	Aug 5	MW	46	0.90		J				
Chowade R.	5	4-5	Aug 5	MW	123	14.00		J	14	2		
Chowade R.	5	4-5	Aug 5	MW	122	18.15		J	15	2		
Chowade R.	5	4-5	Aug 5	RB	282	265.00		A	1			
Chowade R.	5	6-9	Aug 5	DV	425	625.00		A				11481
Chowade R.	5	6-9	Aug 5	MW	113	15.05		J	16	1		
Chowade R.	5	6-9	Aug 5	MW	89	5.50		J	17	1		
Chowade R.	5	6-9	Aug 5	MW	91	6.90		J	18	1		
Chowade R.	5	6-9	Aug 5	MW	89	6.35		J	19	1		
Chowade R.	5	6-9	Aug 5	MW	86	5.40		J	20	1		
Chowade R.	5	6-9	Aug 5	MW	44	0.80		J				
Chowade R.	5	6-9	Aug 5	MW	48	1.10		J				
Chowade R.	5	6-9	Aug 5	MW	48	0.95		J				
Chowade R.	5	6-9	Aug 5	MW	38	0.50		J				
Chowade R.	5	6-9	Aug 5	MW	46	0.90		J				
Chowade R.	5	6-9	Aug 5	MW	44	0.85		J				
Chowade R.	5	6-9	Aug 5	MW	51	1.25		J				
Chowade R.	5	6-9	Aug 5	MW	43	0.75		J				
Chowade R.	5	6-9	Aug 5	MW	40	0.60		J				

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex Maturity	Scale		Tag	
								#	age	recovery	release
Chowade R.	5	6-9	Aug 5	CC	36						
Chowade R.	5	6-9	Aug 5	CC	60						
Chowade R.	5	6-9	Aug 5	LSU	315						
Chowade R.	15	1	Aug 5	WF	195	83.25	J	21	2		
Chowade R.	15	1	Aug 5	WF	154	40.40	J	22	1		
Chowade R.	15	1	Aug 5	WF	145	34.60	J	23	1		
Chowade R.	15	1	Aug 5	WF	173	58.60	J	24	2		
Chowade R.	15	1	Aug 5	WF	152	38.80	J	25	2		
Chowade R.	15	1	Aug 5	WF	183	73.20	J	26	2		
Chowade R.	15	1	Aug 5	WF	152	41.05	J	27	1		
Chowade R.	15	1	Aug 5	WF	147	36.85	J	28	2		
Chowade R.	15	1	Aug 5	WF	135	24.85	J	29	2		
Chowade R.	15	1	Aug 5	WF	138	25.55	J	30	2		
Cypress Cr.	1	1-3	Aug 6	LSU	384		A				
Cypress Cr.	1	1-3	Aug 6	LSU	318		A				
Cypress Cr.	1	1-3	Aug 6	LSU	372		A				
Cypress Cr.	1	1-3	Aug 6	MW	123	18.40	J	1	1		
Cypress Cr.	1	1-3	Aug 6	MW	121	16.80	J	2	2		
Cypress Cr.	1	1-3	Aug 6	MW	126	19.25	J	3	1		
Cypress Cr.	1	1-3	Aug 6	MW	53	1.20	J				
Cypress Cr.	1	1-3	Aug 6	MW	40	0.65	J				
Cypress Cr.	1	1-3	Aug 6	MW	42	0.70	J				
Cypress Cr.	1	1-3	Aug 6	MW	43	0.75	J				
Cypress Cr.	1	1-3	Aug 6	MW	50	1.10	J				
Cypress Cr.	1	1-3	Aug 6	MW	48	1.00	J				
Cypress Cr.	1	1-3	Aug 6	CC	45						
Cypress Cr.	1	4	Aug 6	MW	140	27.25	J	4	2		
Cypress Cr.	1	4	Aug 6	MW	202	82.10	J	5	3		
Cypress Cr.	1	4	Aug 6	MW	98	8.65	J	6	1		
Cypress Cr.	1	4	Aug 6	MW	99	9.00	J	7	1		
Cypress Cr.	1	4	Aug 6	MW	102	9.70	J	8	1		
Cypress Cr.	1	4	Aug 6	MW	49	1.05	J				
Cypress Cr.	1	4	Aug 6	MW	45	0.85	J				
Cypress Cr.	1	4	Aug 6	MW	46	0.85	J				
Cypress Cr.	1	4	Aug 6	MW	44	0.80	J				
Cypress Cr.	1	4	Aug 6	MW	46	0.95	J				
Cypress Cr.	1	4	Aug 6	MW	50	1.05	J				
Cypress Cr.	1	4	Aug 6	MW	54	1.45	J				
Cypress Cr.	1	4	Aug 6	MW	51	1.25	J				
Cypress Cr.	1	4	Aug 6	MW	46	0.75	J				
Cypress Cr.	1	4	Aug 6	MW	43	0.75	J				
Cypress Cr.	1	4	Aug 6	MW	51	1.05	J				
Cypress Cr.	1	4	Aug 6	MW	42	0.70	J				
Cypress Cr.	1	6	Aug 6	GR	192	80.85	J	1	2		
Cypress Cr.	1	6	Aug 6	MW	103	10.15	J	9	1		
Cypress Cr.	1	6	Aug 6	MW	139	26.50	J	10	2		
Cypress Cr.	1	6	Aug 6	MW	117	16.00	J	11	1		

APPENDIX X

Size and age of fish caught in streams of the upper Halfway system.

Tributary name	Site (km)	Set or Pass #	Date	Species	Fork length (mm)	Weight (g)	Sex	Maturity	Scale		Tag	
									#	age	recovery	release
Cypress Cr.	1	6	Aug 6	MW	113	13.50	J	12	1			
Cypress Cr.	1	6	Aug 6	MW	125	17.15	J	13	1			
Cypress Cr.	1	6	Aug 6	MW	98	8.90	J	14	1			
Cypress Cr.	15	1	Aug 6	MW	423	810.00	A	15	5			11482
Cypress Cr.	15	1	Aug 6	MW	203	95.85	A	16	2			
Cypress Cr.	15	1	Aug 6	MW	135	24.35	J	17	2			
Cypress Cr.	15	1	Aug 6	MW	103	10.35	J	18	1			
Cypress Cr.	15	1	Aug 6	MW	230	150.00	A	19				
Cypress Cr.	15	1	Aug 6	MW	46	0.80	J					
Cypress Cr.	15	1	Aug 6	MW	268	225.00	A	20	4			11483
Cypress Cr.	15	1	Aug 6	MW	327	410.00	A	21	4			11484
Cypress Cr.	15	1	Aug 6	GR	270	250.00	A	2	3			11485
Cypress Cr.	15	1	Aug 6	MW	98	8.80	J	22	1			
Cypress Cr.	15	1	Aug 6	MW	113	12.85	J	23	1			
Cypress Cr.	15	1	Aug 6	MW	133	24.55	J	24	1			
Cypress Cr.	15	1	Aug 6	MW	102	10.15	J	25	1			
Cypress Cr.	15	1	Aug 6	MW	98	8.90	J	26	1			
Cypress Cr.	15	1	Aug 6	MW	46	0.85	J					
Cypress Cr.	15	1	Aug 6	MW	259	260.00	A	27	3			11486
Cypress Cr.	15	3	Aug 6	MW	317	345.00	A	28	4			11487
Cypress Cr.	15	3	Aug 6	MW	223	250.00	A	29	2			
Cypress Cr.	15	3	Aug 6	MW	160	43.70	J	30	2			
Cypress Cr.	15	3	Aug 6	MW	111	14.10	J	31	1			
Cypress Cr.	15	3	Aug 6	MW	177	53.65	J	32	2			



APPENDIX XI

Fish catches made at sites on upper Halfway River tributaries, August, 1990.

System	Date	Set #	km upstream	Habitat type	Area (m <sup>2</sup> )	Depth (m)		Velocity mean (m/s)	Substrate	Visibility (m)	Cover %	Temp (C)	Method	Species	Catch			
						max	mean								1	2	3	4
Graham	Aug 2	1	33.0	glide	375	2.5	1.5	2.0	B	3	0	12	float	AG (ad)	5			
Graham	Aug 2	1	33.0	glide	375	2.5	1.5	2.0	B	3	0	12	float	MW (ad)	2			
Graham	Aug 2	1	33.0	glide	375	2.5	1.5	2.0	B	3	0	12	float	DV (ad)	1			
Graham	Aug 2	2	33.0	glide	35	0.6	0.4	0.8	G/C	3	0	12	sm. seine	MW (j)	3			
Graham	Aug 2	3	33.0	glide	35	0.6	0.4	0.8	G/C	3	0	12	sm. seine	MW (j)	1			
Graham	Aug 2	3	33.0	glide	35	0.6	0.4	0.8	G/C	3	0	12	sm. seine	CC	1			
Graham	Aug 2	4	33.0	glide	100	2.0	1.0	0.7	F/B	3	0	12	seine	MW (ad)	2			
Graham	Aug 2	4	33.0	glide	100	2.0	1.0	0.7	F/B	3	0	12	lg. seine	MW (j)	1			
Graham	Aug 2	5	33.0	glide	35	2.5	1.0	0.0	f/b	3	0	12	sm. seine	-	0			
Graham	Aug 2	1	29.0	glide	350	0.8	0.5	0.7	g/c	3	0	14	lg. seine	MW (ad)	2			
Graham	Aug 2	1	29.0	glide	350	0.8	0.5	0.7	g/c	3	0	14	lg. seine	MW (j)	1			
Graham	Aug 2	2	29.0	glide	350	0.8	0.5	0.7	g/c	3	0	14	lg seine	-				
Graham	Aug 2	3	29.0	pool	500	3.0	1.5	0.5	b	3	0	14	float	AG (ad)	1			
Graham	Aug 2	3	29.0	pool	500	3.0	1.5	0.5	b	3	0	14	float	MW (ad)	3			
Graham	Aug 2	3	29.0	pool	500	3.0	1.5	0.5	b	3	0	14	float	RB (ad)	1			
Graham	Aug 2	3	29.0	pool	500	3.0	1.5	0.5	b	3	0	14	float	LSU	1			
Graham	Aug 2	1	28.5	glide	250	2.0	1.5	0.7	g/c	3	0	14	lg seine	AG (ad)	1			
Graham	Aug 2	1	28.5	glide	250	2.0	1.5	0.7	g/c	3	0	14	lg seine	MW (ad)	1			
Graham	Aug 2	2	28.5	pool	60	0.7	0.4	0.0	f	3	0	14	sm seine	MW (j)	2			
Graham	Aug 2	2	28.5	pool	60	0.7	0.4	0.0	f	3	0	14	sm seine	CC	1			
Graham	Aug 2	3	28.5	pool	200	2.0	1.5	0.5	f/b	3	0	14	lg seine	-				
Graham	Aug 2	4	28.5	pool/glide	800	3.0	2.0	0.5	c/g	3	0	14	lg seine	AG (ad)	1			
Graham	Aug 2	4	28.5	pool/glide	800	3.0	2.0	0.5	c/g	3	0	14	lg seine	MW (ad)	4			
Graham	Aug 2	4	28.5	pool/glide	800	3.0	2.0	0.5	c/g	3	0	14	lg seine	MW (j)	1			
Graham	Aug 2	4	28.5	pool/glide	800	3.0	2.0	0.5	c/g	3	0	14	lg seine	LSU	1			
Graham	Aug 2	5	28.5	pool/glide	-	3.0	2.0	0.5	c/g	3	0	14	float	-				
Graham	Aug 2	1	27.0	pool	150	>2.5	1.5	1.5	g/c	3	0	14	lg seine	DV	1			
Graham	Aug 2	1	27.0	pool	150	>2.5	1.5	1.5	g/c	3	0	14	lg seine	RB	1			
Graham	Aug 2	2	27.0	pool	150	>2.5	1.5	1.5	g/c	3	0	14	lg seine	MW (ad)	2			
Graham	Aug 2	2	27.0	pool	150	>2.5	1.5	1.5	g/c	3	0	14	lg seine	MW (j)	2			
Graham	Aug 2	1	25.0	glide	750	3.0	1.5	0.8	c	3	0	14	float	AG (j)	1			
Graham	Aug 4	1	60.0	pool	150	2.5	-	0.3	g/c	8	0	13	sm seine	-				

APPENDIX XI

Fish catches made at sites on upper Halfway River tributaries, August, 1990.

System	Date	Set #	km upstream	Habitat type	Area (m2)	Depth (m)		Velocity mean (m/s)	Substrate	Visibility (m)	Cover %	Temp (C)	Method	Species	Catch			
						max	mean								1	2	3	4
Graham	Aug 4	2	60.0	pool	1,280	8.0	3.0	0.5	b/c/g/f	8	5	13	float	LSU (ad)	5			
Graham	Aug 4	2	60.0	pool	1,280	8.0	3.0	0.5	b/c/g/f	8	5	13	float	RB (ad)	3			
Graham	Aug 4	2	60.0	pool	1,280	8.0	3.0	0.5	b/c/g/f	8	5	13	float	AG (ad)	1			
Graham	Aug 4	2	60.0	pool	1,280	8.0	3.0	0.5	b/c/g/f	8	5	13	float	MW (ad)	8			
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	DV	2	0		
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	LSU	1	0		
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	RB	4	1		
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	LNC	1	1		
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	CC	7	3		
Blue Grave	Aug 3	1	0.5	pool	144	0.9	0.5	0.2	g/c	2	15	17	shocker	NSC	0	1		
Blue Grave	Aug 5	1	16.0	pool	25	0.6	0.4	0.7	g/c/b	clear	0	9	shocker	-				
Blue Grave	Aug 5	2	16.0	glide	83	0.3	0.3	0.8	c/b/g	clear	5	9	shocker	DV	1	0		
Blue Grave	Aug 5	2	16.0	glide	83	0.3	0.3	0.8	c/b/g	clear	5	9	shocker	CC	6	3		
Blue Grave	Aug 5	2	16.0	glide	83	0.3	0.3	0.8	c/b/g	clear	5	9	shocker	RB	2	0		
Horseshoe	Aug 3	1	0.5	riffle	37	0.3	0.2	2.0	c/g/b	2	0	16	shocker	CC	9	13	0	
Horseshoe	Aug 3	1	0.5	riffle	37	0.3	0.2	2.0	c/g/b	2	0	16	shocker	LNC	4	0	1	
Horseshoe	Aug 3	1	0.5	riffle	37	0.3	0.2	2.0	c/g/b	2	0	16	shocker	MW	0	3	4	
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	DV	0	2		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	CC	10	7		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	LNC	0	1		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	MW	3	8		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	LSU	3	2		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	RB	7	3		
Horseshoe	Aug 3	2	0.5	pool	186	1.0	0.4	0.5	c/g/b	2	10	16	shocker	AG	0	2		
Horseshoe	Aug 4	1	15.0	riffle	51	0.4	0.3	1.1	c/b	clear	5	11	shocker	CC	4	10	7	3
Horseshoe	Aug 4	1	15.0	riffle	51	0.4	0.3	1.1	c/b	clear	5	11	shocker	RB	1	0	0	0
Horseshoe	Aug 4	1	15.0	riffle	51	0.4	0.3	1.1	c/b	clear	5	11	shocker	DV	1	0	0	0
Horseshoe	Aug 4	2	15.0	pool	52	0.6	0.4	0.8	g/c/b	clear	15	11	shocker	CC	9	6		
Chowade	Aug 6	1	5.0	pool	36	1.2	0.7	0.3	g/c	clear	0	11	sm seine	-				
Chowade	Aug 6	2	5.0	glide	105	0.6	0.4	0.8	c/g	clear	0	11	sm seine	-				
Chowade	Aug 6	3	5.0	glide/pool	75	>2	1.5	0.8	c/g	5	10	11	sm seine	MW	11			
Chowade	Aug 6	3	5.0	glide/pool	75	>2	1.5	0.8	c/g	5	10	11	sm seine	AG	1			

Second draft: subject to revision  
- 44 -

APPENDIX XI

Fish catches made at sites on upper Halfway River tributaries, August, 1990.

System	Date	Set #	km upstream	Habitat type	Area (m <sup>2</sup> )	Depth (m)		Velocity	Substrate	Visibility (m)	Cover %	Temp (C)	Method	Species	Catch			
						max	mean	mean (m/s)							1	2	3	4
Chowade	Aug 6	4	5.0	glide/pool	75	>2	1.5	0.8	c/g	5	10	11	sm seine	MW	1			
Chowade	Aug 6	4	5.0	glide/pool	75	>2	1.5	0.8	c/g	5	10	11	sm seine	RB	1			
Chowade	Aug 6	5	5.0	glide/pool	75	>2	1.5	0.8	c/g	5	10	11	sm seine	MW	9			
Chowade	Aug 6	6	5.0	pool	75	2.0	1.5	0.7	g/c	5	10	11	sm seine	MW	3			
Chowade	Aug 6	7	5.0	pool	75	2.5	1.5	0.5	g/c/f	5	10	11	sm seine	MW	2			
Chowade	Aug 6	8	5.0	pool	75	2.5	1.5	0.5	g/c/f	5	10	11	sm seine	MW (j)	46			
Chowade	Aug 6	8	5.0	pool	75	2.5	1.5	0.5	g/c/f	5	10	11	sm seine	DV	1			
Chowade	Aug 6	9	5.0	glide	25	2.0	0.9	0.7	g/c/f	5	10	11	sm seine	MW	17			
Chowade	Aug 6	1	15.0	glide	125	0.7	0.5	0.7	g/c	8	0		sm seine	MW (j)	13			
Chowade	Aug 6	2	15.0	pool	28	1.2	0.7	0.1	f/g	8	5		sm seine	-				
Chowade	Aug 6	3	15.0	pool	105	2.5	2.0	0.2	f/g	8	5		sm seine	MW (j)	8			
Chowade	Aug 6	4	15.0	pool	36	2.5	2.0	0.1	f/g	8	5		sm seine	MW (j)	1			
Chowade	Aug 6	4	15.0	pool	36	2.5	2.0	0.1	f/g	8	5		sm seine	CC	1			
Chowade	Aug 6	5	15.0	pool	900	3.0	2.0	0.7	g/c/b	8	10		float	MW (j)	10			
Chowade	Aug 6	5	15.0	pool	900	3.0	2.0	0.7	g/c/b	8	10		float	MW (ad)	20			
Chowade	Aug 6	5	15.0	pool	900	3.0	2.0	0.7	g/c/b	8	10		float	RB (ad)	1			
Chowade	Aug 6	5	15.0	pool	900	3.0	2.0	0.7	g/c/b	8	10		float	AG (ad)	1			
Chowade	Aug 6	5	15.0	pool	900	3.0	2.0	0.7	g/c/b	8	10		float	SU (ad)	2			
Chowade	Aug 6	6	15.0	glide	1,440	-	0.5	1.0	b/c	8	20		float	MW (ad)	2			
Chowade	Aug 6	6	15.0	glide	1,440	-	0.5	1.0	b/c	8	20		float	SU (ad)	4			
Chowade	Aug 6	7	15.0	glide	750	1.0	0.5	1.0	c/b	8	5		float	MW (ad)	20			
Chowade	Aug 6	7	15.0	glide	750	1.0	0.5	1.0	c/b	8	5		float	AG (ad)	1			
Cypress	Aug 7	1	1.0	pool	60	1.5	0.8	0.7	g/c/b	2	5	12	sm seine	MW (j)	6			
Cypress	Aug 7	1	1.0	pool	60	1.5	0.8	0.7	g/c/b	2	5	12	sm seine	MW (ad)	2			
Cypress	Aug 7	1	1.0	pool	60	1.5	0.8	0.7	g/c/b	2	5	12	sm seine	LSU (ad)	3			
Cypress	Aug 7	2	1.0	pool	180	1.3	1.1	0.7	g/c	2	5	12	sm seine	-				
Cypress	Aug 7	3	1.0	glide	90	0.8	0.5	0.8	c/g	2	0	12	sm seine	MW (ad)	1			
Cypress	Aug 7	3	1.0	glide	90	0.8	0.5	0.8	c/g	2	5	12	sm seine	CC	1			
Cypress	Aug 7	4	1.0	glide	42	1.1	0.7	0.4	g/c	2	5	12	sm seine	MW (j)	13			
Cypress	Aug 7	4	1.0	glide	42	1.1	0.7	0.4	g/c	2	5	12	sm seine	MW (ad)	5			
Cypress	Aug 7	5	1.0	glide	18	0.9	0.7	0.6	c/g	2	10	12	sm seine	-				
Cypress	Aug 7	6	1.0	back chan.	72	1.2	1.0	0.2	f/g/c	2	0	12	sm seine	MW (ad)	5			

Second draft: subject to revision  
- 45 -

APPENDIX XI

Fish catches made at sites on upper Halfway River tributaries, August, 1990.

System	Date	Set #	km upstream	Habitat type	Area (m2)	Depth (m)		Velocity mean (m/s)	Substrate	Visibility (m)	Cover %	Temp (C)	Method	Species	Catch			
						max	mean								1	2	3	4
Cypress	Aug 7	6	1.0	back chan.	72	1.2	1.0	0.2	f/g/c	2	0	12	sm seine	AG	1			
Cypress	Aug 7	7	1.0	glide	100	0.8	0.6	2.0	c/b	2	0	12	sm seine	-	0	0		
Cypress	Aug 7	1	15.0	pool	192	1.5	1.0	0.8	f/b/c	2	0	14	shocker	MW	6	6	3	
Cypress	Aug 7	1	15.0	pool	192	1.5	1.0	0.8	f/b/c	2	0	14	shocker	AG	0	1	0	
Cypress	Aug 7	2	15.0	glide	156	1.0	0.6	1.0	c/g/b	2	0	14	seine	MW (j)	1			
Cypress	Aug 7	2	15.0	glide	156	1.0	0.6	1.0	c/g/b	2	0	14	seine	MW (ad)	1			
Cypress	Aug 7	3	15.0	pool	119	2.5	1.7	0.5	c/b	2	0	14	seine	MW (j)	1	3	1	
Cypress	Aug 7	3	15.0	pool	119	2.5	1.7	0.5	c/b	2	0	14	seine	MW (ad)	1	0	3	
Cypress	Aug 7	4	15.0	pool	105	2.5	1.0	0.2	b/c	2	0	14	seine	-				