Subtask 7.10
Phase 1 Final Draft Report
Resident Fish Investigation on the Lower Susitna River
ADF&G / Su Hydro 1981

ALASKA
DEPARTMENT OF FISH AND GAME

ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

Subtask 7.10
Phase 1 Final Draft Report
Resident Fish Investigation on the Lower Susitna River
ADF&G / Su Hydro 1981

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TABLE OF CONTENTS

	Title	Page
1.	SUMMARY	E-1-1
2.	INTRODUCTION	E-2-1
3.	SPECIES REPORTS - RESIDENT FISH	E-3-1
	3.1 RAINBOW TROUT	E-3-1
	3.1.1 Abstract	E-3-1
	3.1.2 Introduction	E-3-2
	3.1.3 Methods	E-3-3
	3.1.4 Results and Discussion	E-3-4
	3.1.4.1 Distribution and Relative Abundance	E-3-4
	3.1.4.2 Age, Length, and Sex Composition	E-3-8
	3.1.4.3 Tagging and Recapture	E-3-11
	3.2 ARCTIC GRAYLING	E-3-16
	3.2.1 Abstract	E-3-16
	3.2.2 Introduction	E-3-16
	3.2.3 Methods	E-3-18
	3.2.4 Results and Discussion	E-3-18
	3.2.4.1 Distribution and Relative Abundance	E-3-18
	3.2.4.2 Age, Length, and Sex Composition	E-3-19
	3.2.4.3 Spawning	E-3-24
	3.2.4.4 Tagging and Recapture	E-3-27
	3.3 BURBOT	E-3-29
	3.3.1 Abstract	E-3-29
	3.3.2 Introduction	E-3-29
	3.3.3 Methods	E-3-31
	3.3.4 Results and Discussion	E-3-31
	3.3.4.1 Distribution and Relative Abundance	E-3-31
	3.3.4.2 Age, Length, and Sex Composition	E-3-38
	3.3.4.3 Spawning	E-3-42
	3.3.4.4 Tagging and Recapture	E-3-45

		Page
3.4	ROUND WHITEFISH	E-3-47
3.4.1	Abstract	E-3-47
3.4.2	Introduction	E-3-47
3.4.3	Methods	E-3-48
3.4.4	Results and Discussion	E-3-49
3.4.4.1	Distribution and Relative Abundance	E-3-49
3.4.4.2	Age, Length, and Sex Composition	E-3-51
3.4.4.3	Spawning	
3.4.4.4	Tagging and Recapture	E-3-55
3.5	HUMPBACK WHITEFISH	E-3-59
3.5.1	Abstract	E-3-59
3.5.2	Introduction	E-3-59
3.5.3	Methods	E-3-62
3.5.4	Results and Discussion	E-3-63
3.5.4.1	Distribution and Relative Abundance	E-3-64
3.5.4.2	Age, Length, and Sex Composition	E-3-71
3.5.4.3	Spawning	E-3-71
3.5.4.4	Tagging and Recapture	E-3-71
3.6	BERING CISCO	E-3-75
3.6.1	Abstract	E-3-75
3.6.2	Introduction	E-3-76
3.6.3	Methods	E-3-77
3.6.4	Results and Discussion	E-3-77
3.6.4.1	Distribution and Relative Abundance	E-3-77
3.6.4.2	Age, Length, and Sex Composition	E-3-79
3.6.4.3	Spawning	E-3-84
3.6.4.4	Tagging and Recapture	E-3-91
3.7	LONGNOSE SUCKER	E-3-95
3.7.1	Abstract	E-3-95
3.7.2	Introduction	E-3-95
3.7.3	Methods	E-3-97
3.7.4	Results and Discussion	E-3-97

Page

3.7.4.1 Distribution and Relative Abundance..... E-3-97
3.7.4.2 Age, Length, and Sex Composition..... E-3-98
3.7.4.3 Tagging and Recapture..... E-3-103

3.8 DOLLY VARDEN..... E-3-107

3.8.1 Abstract..... E-3-107
3.8.2 Introduction..... E-3-107
3.8.3 Methods..... E-3-108
3.8.4 Results and Discussion..... E-3-108

3.8.4.1 Distribution and Relative Abundance..... E-3-108
3.8.4.2 Length Frequency..... E-3-112
3.8.4.3 Tagging..... E-3-112

3.9 THREESPINE STICKLEBACK..... E-3-116

3.9.1 Abstract..... E-3-116
3.9.2 Introduction..... E-3-116
3.9.3 Methods..... E-3-118
3.9.4 Results and Discussion..... E-3-118

3.9.4.1 Distribution and Relative Abundance..... E-3-118
3.9.4.2 Age, Length, and Sex Composition..... E-3-121

3.10 COTTIDS..... E-3-123

3.10.1 Abstract..... E-3-123
3.10.2 Introduction..... E-3-123
3.10.3 Methods..... E-3-124
3.10.4 Results and Discussion..... E-3-124

3.10.4.1 Distribution and Relative Abundance..... E-3-124
3.10.4.2 Age, Length, and Sex Composition..... E-3-127

3.11 ARCTIC LAMPREY..... E-3-129

3.11.1 Abstract..... E-3-129
3.11.2 Introduction..... E-3-129
3.11.3 Methods..... E-3-131
3.11.4 Results and Discussion..... E-3-131

Page

3.11.4.1 Distribution and Relative Abundance..... E-3-131
3.11.4.2 Age, Length, and Sex Composition..... E-3-134

3.12 NORTHERN PIKE..... E-3-136

3.12.1 Abstract..... E-3-136
3.12.2 Introduction..... E-3-136
3.12.3 Methods..... E-3-137
3.12.4 Results and Discussion..... E-3-137

3.12.4.1 Age, Length and Sex Composition..... E-3-138

4. LITERATURE CITED..... E-4-1

5. ACKNOWLEDGEMENTS..... E-5-1

LIST OF FIGURES

		Page
Figure E.2.1	Map of the lower Susitna River study area from Cook Inlet to the proposed Devil Canyon dam site.	E-2-2
Figure E.2.2	Resident and juvenile anadromous study, catch and effort form, fixed gear, 1980-81.	E-2-10
Figure E.2.3	Resident and juvenile anadromous study, catch and effort form, mobile gear, 1980-81	E-2-11
Figure E.2.4	Resident and juvenile anadromous study, biological data form, 1980-81.	E-2-12
Figure E.2.5	Resident and juvenile anadromous study, tag and recapture form, 1980-81	E-2-13
Figure E.3.1.1	Percent incidence for rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-6
Figure E.3.1.2	Percent incidence for rainbow trout captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-7
Figure E.3.1.3	Age and length relationship of rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-10
Figure E.3.1.4	Length frequency composition of rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-12
Figure E.3.2.1	Percent incidence for Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-20
Figure E.3.2.2	Percent incidence for Arctic grayling captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-21

		Page
Figure E.3.2.3	Age and length relationship of Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-23
Figure E.3.2.4	Length frequency composition of Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-25
Figure E.3.3.1	Percent incidence for burbot captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-35
Figure E.3.3.2	Percent incidence for burbot captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-37
Figure E.3.3.3	Age and length relationship of burbot captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-40
Figure E.3.3.4	Length frequency composition of burbot captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-41
Figure E.3.4.1	Percent incidence for round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-50
Figure E.3.4.2	Percent incidence for round whitefish captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-52
Figure E.3.4.3	Age and length relationship of round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-54

		Page
Figure E.3.4.4	Length frequency composition of round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-56
Figure E.3.5.1	Percent incidence for humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-66
Figure E.3.5.2	Percent incidence for humpback whitefish captured at habitat locations sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-67
Figure E.3.5.3	Age and length relationship of humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-68
Figure E.3.5.4	Length frequency composition of humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-69
Figure E.3.6.1	Age and length relationship of Bering cisco captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-83
Figure E.3.6.2	Length frequency composition of Bering cisco captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-85
Figure E.3.6.3	Bering cisco spawning area on the Susitna River at Sunshine, RM 78.0 to Rm 79.0, October 13, 1981.	E-3-88
Figure E.3.6.4	Bering cisco spawning area on the Susitna River at Montana Creek, RM 76.0 to RM 77.5, October 13, 1981.	E-3-90
Figure E.3.6.5	Bering cisco spawning area on the Susitna River at Mainstem West Bank, RM 75.0, October 13, 1981.	E-3-92

		Page
Figure E.3.7.1	Percent incidence for longnose suckers captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-99
Figure E.3.7.2	Percent incidence for longnose suckers captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-100
Figure E.3.7.3	Age and length relationship of longnose suckers captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.	E-3-102
Figure E.3.7.4	Length frequency composition of longnose suckers captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-104
Figure E.3.8.1	Percent incidence for Dolly Varden captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-110
Figure E.3.8.2	Percent incidence for Dolly Varden captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-111
Figure E.3.8.3	Length frequency composition of Dolly Varden captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-114
Figure E.3.9.1	Percent incidence for threespine stickleback captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-119
Figure E.3.9.2	Percent incidence for threespine stickleback captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-120
Figure E.3.9.3	Length frequency composition of threespine stickleback captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-122

		Page
Figure E.3.10.1	Percent incidence for cottids captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-125
Figure E.3.10.2	Percent incidence for cottids captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.	E-3-126
Figure E.3.10.3	Length frequency composition of cottids captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-128
Figure E.3.11.1	Percent incidence of Arctic lamprey captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.	E-3-133
Figure E.3.11.2	Length frequency composition of Arctic lamprey captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to September, 1981.	E-3-135

LIST OF TABLES

		Page
Table E.2.1	Estuary to Little Willow Creek	E-2-5
Table E.2.2	Rustic Wilderness to Montana Creek	E-2-6
Table E.2.3	Mainstem near Parks Highway bridge to Mainstem below Curry	E-2-7
Table E.2.4	Mainstem Susitna (opposite Curry) to Portage Creek	E-2-8
Table E.3.1.1	Rainbow trout, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-9
Table E.3.1.2	Rainbow trout, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-13
Table E.3.1.3	Rainbow trout, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-14
Table E.3.2.1	Arctic grayling, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-22
Table E.3.2.2	Arctic grayling, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-26
Table E.3.2.3	Arctic grayling, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-28
Table E.3.3.1	Burbot catch per trot line day, selected fish habitat sites, Cook Inlet to Talkeetna, November, 1980 to May, 1981.	E-3-33
Table E.3.3.2	Burbot catch per trot line day at selected fish habitat sites, Talkeetna to Devil Canyon, November, 1980 to May, 1981.	E-3-34

		Page
Table E.3.3.3	Burbot, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-39
Table E.3.3.4	Burbot summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-43
Table E.3.3.5	Burbot summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, May to October, 1981.	E-3-46
Table E.3.4.1	Round whitefish, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-53
Table E.3.4.2	Round whitefish, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-57
Table E.3.4.3	Round whitefish, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-58
Table E.3.5.1	Humpback whitefish fishwheel catch on the Susitna River at Sunshine Station (RM 79.0), August to September, 1981.	E-3-65
Table E.3.5.2	Humpback whitefish, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-70
Table E.3.5.3	Humpback whitefish, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-72
Table E.3.5.4	Humpback whitefish, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-74
Table E.3.6.1	Bering Cisco fishwheel catch on the Susitna River at Sunshine Station (RM-79.0), August to September, 1981.	E-3-78
Table E.3.6.2	Bering cisco gill net catch on the Susitna River at Kroto Slough (RM 30.1) and Mainstem Slough (RM 31.0), September, 1981.	E-3-80

		Page
Table E.3.6.3	Bering cisco electrofishing catch on the Susitna River between RM 67.5 and RM 97.9, September 25 to October 15, 1981.	E-3-81
Table E.3.6.4	Bering cisco, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-82
Table E.3.6.5	Bering cisco, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-86
Table E.3.6.6	Bering cisco spawning site evaluation on the Susitna River, October, 1981.	E-3-89
Table E.3.6.7	Bering cisco, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-93
Table E.3.7.1	Longnose sucker, age-length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-101
Table E.3.7.2	Longnose sucker, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-105
Table E.3.7.3	Longnose sucker, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-106
Table E.3.8.1	Dolly Varden catch and catch per unit effort (CPUE) by habitat location sites, upper Indian River and upper Portage Creek, helio surveys, June to October, 1981.	E-3-113
Table E.3.8.2	Dolly Varden, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.	E-3-115
Table E.3.11.1	Arctic lamprey, catch per unit effort at habitat location sites on the Susitna River, January to September, 1981.	E-3-132

LIST OF APPENDIX TABLES

EA	Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.
EB-1	Rainbow trout, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-2	Arctic grayling, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-3	Burbot, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-4	Round whitefish, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-5	Humpback whitefish, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-6	Bering cisco, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-7	Longnose sucker, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-8	Dolly Varden, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-9	Threespine stickleback, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-10	Cottids, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.
EB-11	Arctic lamprey, catch per unit effort at habitat location sites on the lower Susitna River between Cook Inlet and Devil Canyon, November, 1980 to October, 1981.

1. SUMMARY

(1) This study was designed to gather information describing the presence, abundance, geographical and seasonal distribution, age distribution, length distribution, sex ratio, and movement of resident fish species in the Susitna River between Cook Inlet and Devil Canyon as part of a feasibility study regarding the proposed Susitna Hydroelectric project.

(2) Field collection of data on resident fish species took place from November, 1980 to October, 1981. Sampling gear used included variable mesh gillnets, minnow traps, trotlines, hook and line, beach seines, electrofishing units, and dip nets.

(3) Twelve resident species were captured during the course of this study.

(4) Rainbow trout were captured throughout the study area, with the mouths of tributary streams producing higher catches per unit effort than mainstem river locations. The mean fork length of the 395 rainbow trout captured was 285 mm. Fork lengths of rainbow trout in the Cook Inlet to Talkeetna reach was consistently 20 to 40 mm longer in each age class than those recorded in the Talkeetna to Devil Canyon reach. The most prevalent age classes captured were Age III, Age IV and Age V.

(5) Peak catches of Arctic grayling occurred in May and September. Cache Creek slough, Montana Creek and Portage Creek had the largest catches per

unit effort. The mean fork length of fish captured was 202 mm and the most prevalent age classes were Age V and Age VI.

(6) Burbot were captured at 43 of the 44 habitat locations between Alexander Creek and Portage Creek with peak catch rates recorded in late August and early September. The mean length of 457 burbot measured was 428 mm. The most prevalent age classes were Age III, Age V, and Age VIII.

(7) Round whitefish occurred throughout the study area but the more productive sites tended to be upstream of Talkeetna. Age IV fish were the most common and had a mean length of 261 mm.

(8) Humpback whitefish were captured at approximately half the habitat locations throughout the study area but were generally more abundant at sites downstream of Talkeetna. The mean fork length of 344 fish measured was 284 mm. Age IV and Age VI were the most prevalent age classes.

(9) Eight hundred, thirty four Bering cisco were captured at sites ranging from Kroto Slough to a site just upstream of Talkeetna in the late summer and early fall. This species was not know to occur in the Susitna River drainage prior to this study. The mean fork length of measured fish was 332 mm and Age IV was the most prevalent age class. Spawning was observed at three sites between river mile 74 and mile 79. Peak spawning occurred during the second week of October.

(10) Longnose suckers occurred throughout the study area. The mean fork length of 532 suckers measured was 259 mm and the most prevalent age class was Age VI.

(11) Dolly Varden were captured at sites ranging from Alexander Creek to Portage Creek with the highest catches per unit effort recorded at the mouths of tributary streams. The mean fork length was 196 mm. Dolly Varden captured in minnow traps on upper Indian River and upper Portage Creek had a mean fork length of 94 mm.

(12) Threespine stickleback were widespread and abundant in the Susitna River below Devil Canyon during the early summer. The catch in minnow traps at habitat locations generally declined after late June. Threespine sticklebacks were caught at a site two miles below the confluence of Portage Creek, approximately 50 miles further upriver than previously reported. The mean total length of fish measured was 79 mm. Three age classes (0+, I+, II+) were present during the summer.

(13) The slimy sculpin was present at almost all habitat locations between Cook Inlet and Devil Canyon. The mean total length of 476 fish measured was 70 mm.

(14) Forty Arctic lamprey were captured at sites in the lower 100 miles of the Susitna River.

(15) One Age IX female northern pike measuring 715 mm fork length was captured in Kroto Slough on September 11, 1981. Northern pike are expanding their range from the Bulchitna Lake area; this is the first record of one captured in the mainstem Susitna River.

(16) Information obtained to date has described the geographic and seasonal distribution, relative abundance, length distribution and age distribution of adult residents during the period June through September. The data on male/female ratios are less complete.

(17) Relatively small numbers of juvenile resident fish were collected in 1980-1981. Sampling scheme bias imposed by gear types and by location of effort can account for the limited numbers of juvenile residents encountered. Further seasonal distribution, relative abundance, and biological information on juvenile residents is needed to evaluate their life histories.

(18) Spawning sites were located for the round whitefish and Bering cisco. More information is needed on location of mainstem and slough spawning sites and on spawning habits and timing for all species. More information is also needed on the incubation of embryos.

(19) Further information is needed on the winter distribution and habits of all species.

(20) Although many fish were tagged during this study, there have been few recaptures to date. As more recaptures are made, the migrations and movement of the various species can be better described.

2. INTRODUCTION

The lower Susitna River extends 152 River Miles (RM) from Cook Inlet upstream to the proposed Devil Canyon dam site (Figure E.2.1). The study area for the 1980-81 field work was limited to the mainstem Susitna River, its sloughs and side channels, and those reaches of tributary streams directly influenced by Susitna River stage fluctuations. Over its course from Devil Canyon to Cook Inlet, the Susitna River loses nearly 950 feet of vertical elevation and undergoes numerous morphological changes.

From Cook Inlet to Talkeetna, the first 98 river miles, the Susitna rises 350 feet in elevation and combines with three major tributaries; the Yentna (RM 30), Talkeetna (RM 98) and Chulitna (RM 98.5), all glacial rivers. The Cook Inlet to Talkeetna reach includes the Susitna River Delta, the relatively stable Susitna Station (RM 29) area, the Delta Islands (RM 40-61), and an extensively braided area from the Kashwitna River (RM 61) upstream to Talkeetna (RM 97).

Major salmon and resident fish producing tributary streams such as Alexander Creek, Willow Creek, Deshka River and Montana Creek flow into the Susitna River in the Cook Inlet to Talkeetna reach. These streams provide a substantial contribution to Susitna River fish production and account for over one hundred thousand man days of sport fishing effort annually in their multi-species fisheries (Mills, 1980).

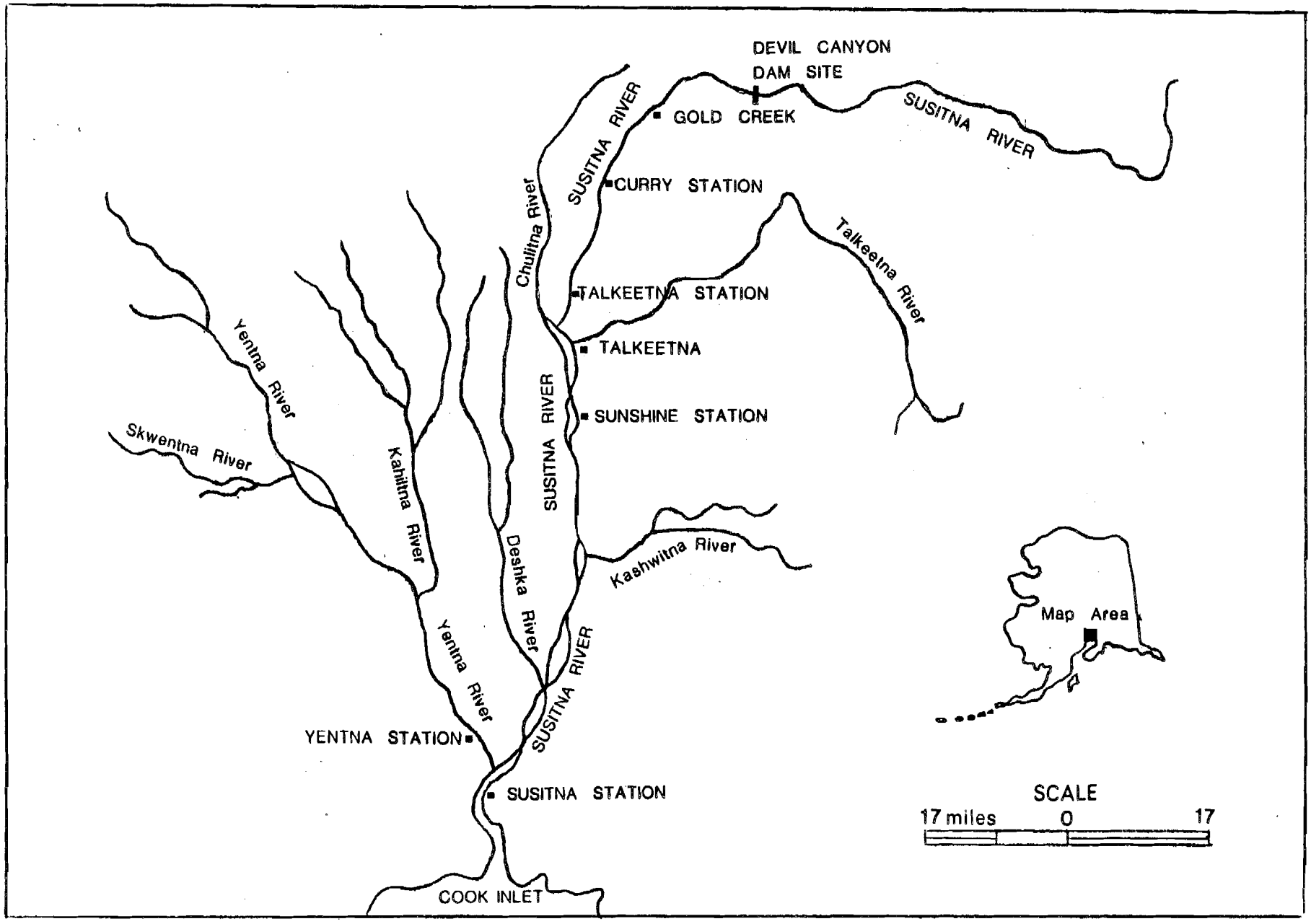

Figure E.2.1. Map of the lower Susitna River study area from Cook Inlet to the proposed Devil Canyon dam site.

Above Talkeetna, the Susitna river begins to gain elevation more rapidly as it enters the foothills of the Talkeetna mountains. The river channel is relatively stable restricted by the surrounding hills. However, numerous islands, sloughs and braided areas still exist.

Streams tributary to the Susitna River in the Talkeetna to Devil Canyon reach include Whiskers Creek, Lane Creek, Fourth of July Creek, Gold Creek, Indian River and Portage Creek in addition to numerous smaller streams draining the surrounding hillsides. These streams together with the mainstem Susitna River, its side channels and sloughs combine to sustain substantial resident and anadromous fish populations.

Access to the fisheries resources of the lower Susitna River may be gained by various means including road, railroad, riverboat, and aircraft.

Prior to the initiation of 1980-81 Susitna Hydroelectric Aquatic Studies, resident and juvenile anadromous fisheries data describing species composition, seasonal distribution, relative abundance, migrational movement patterns and aspects of species life history within the lower Susitna River study area, consisted of various studies conducted within individual tributary streams and preliminary Susitna Hydro environmental assessments. Engel and Watsjold (1978) and Delaney, Hepler and Roth (1981) researched juvenile salmon populations in Willow Creek and the Deshka River. Barrett (1975a,b,c) and Riis and Friese (1978), in documents prepared for the United States Fish and Wildlife Service, reported preliminary environmental assessments of hydroelectric development on the Susitna River.

For the purposes of this study, the lower Susitna River was divided into two reporting reaches: Cook Inlet (RM 0) to Talkeetna (RM 98) and Talkeetna to Devil Canyon (RM 152.0). Studies were conducted from November, 1980 to October, 1981. The data collected beginning November, 1980 and extending through May, 1981 will be reported as winter studies. This time period included exploratory sampling as well as project development. In June, 1981, 39 specific areas hereafter referred to as habitat locations were selected for study along the Susitna River from Cook Inlet to Devil Canyon to represent the available aquatic habitat. Habitat locations consisted of one to three sampling sites and included many of the areas examined during the winter studies. Additional areas identified in earlier studies and areas selected to provide additional representation of unique aquatic habitats were also included. These areas are referred to as selected fish habitat sites. Tables E.2.1 to E.2.4 list the 39 habitat locations, 44 sampling sites included within these, and the corresponding river miles and geographic codes for each. A sampling scheme was devised whereby each habitat location site would be examined twice each month using standard fisheries sampling gear such as wire mesh minnow traps, trotlines, variable mesh gillnets, hook and line, beach seine, electrofishing units, drift gill nets, dip nets and fish traps. Appendix Table EA presents a summary of sampling effort by habitat location, sampling period, and gear type on the lower Susitna River for the 1980-1981 season.

Minnow traps, trotlines and set variable mesh gill nets were considered "fixed gear" and fished for two consecutive 18 to 24 hour periods. The remaining gear types including electrofishing, beach seine, hook and line and drift

Table E.2.1. Estuary to Little Willow Creek

Habitat Location	Site	R.M.	Geographic Location
Alexander Creek	A	10.1	15N 07W 06 DCA
Alexander Creek	B	10.1+2.0	16N 07W 32 CCB
Alexander Creek	C	10.1+4.0	16N 07W 30 ACD
Anderson Creek		23.8	17N 07W 29 DDD
Kroto Slough Mouth		30.1	17N 07W 01 DBC
Mainstem Susitna Slough		31.0+2.5	17N 06W 05 CAB
Mid Kroto Slough		36.3	18N 06W 16 BBC
Deshka River	A	40.6	19N 06W 35 BDA
Deshka River	B	40.6+1.0	19N 06W 26 BCB
Deshka River	C	40.6+3.5	19N 06W 14 BCA
Delta Islands		44.0	19N 05W 19 ACB
Little Willow Creek		50.5	20N 05W 27 AAD

Total - 12

Table E.2.2. Rustic Wilderness to Montana Creek

Habitat Location	Site	R.M.	Geographic Location
Rustic Wilderness		58.1	21N 05W 25 CBD
Kashwitna River		61.0	21N 05W 13 AAA
Caswell Creek		63.0	21N 04W 06 BDD
Slough West Bank		65.6	22N 05W 27 ADC
Sheep Creek Slough		66.1	22N 04W 30 BAB
Goose Creek	1	72.0	23N 04W 31 BBC
Goose Creek	2	73.1	23N 04W 30 BBB
Mainstem Susitna West Bank		74.4	23N 05W 13 CCD
Montana Creek		77.0	23N 04W 07 ABA

Total - 9

Table E.2.3. Mainstem near Parks Highway bridge to mainstem below Curry

Habitat Location	Site	R.M.	Geographic Location
Mainstem 1		84.0	24N 05W 10 DCC
Sunshine Creek		85.7	24N 05W 14 AAB
Birch Creek Slough		88.4	25N 05W 25 DCC
Birch Creek		89.2	25N 05W 25 ABD
Cache Creek Slough		95.5	26N 05W 35 ADC
Cache Creek		96.0	26N 05W 26 DCB
Whiskers Creek Slough		101.2	26N 05W 03 ADB
Whiskers Creek		101.4	26N 05W 03 AAC
Slough 6A		112.3	28N 05W 13 CAC
Lane Creek		113.6	28N 05W 12 ADD
Mainstem 2		114.4	28N 04W 06 CAB

Total - 11

Table E.2.4. Mainstem Susitna (opposite Curry) to Portage Creek

Habitat Location	Site	R.M.	Geographic Location
Mainstem Susitna - Curry		120.7	29N 04W 10 BCD
Susitna Side Channel		121.6	29N 04W 11 BBB
Mainstem Susitna - Gravel Bar		123.8	30N 04W 26 DDD
Slough 8A		125.3	30N 03W 30 BCD
Fourth of July Creek		131.1	30N 03W 03 DAC
Slough 10		133.8	31N 03W 36 AAC
Slough 11		135.3	31N 02W 19 DDD
Mainstem Susitna Gold Creek		136.9	31N 02W 17 CDA
Indian River		138.6	31N 02W 09 CDA
Slough 20		140.1	31N 02W 11 BBC
Mainstem Susitna - Island		146.9	32N 01W 27 DBC
Portage Creek		148.8	32N 01W 25 CDB

Total - 12

gillnet were considered mobile gear and were utilized as river condition or gear availability permitted. Fish traps were experimental in nature and were only fished occasionally. Catch by species and effort by gear type was recorded on field catch data collection forms illustrated in Figures E.2.2 and E.2.3.

Biological data including date and location of catch, fork length, sex, and a scale or otolith sample for age analysis were collected from a subsample of all fish captured. The biological data collection form is illustrated in Figure E.2.4.

All resident fish species over 200 mm in length and in good condition after capture were tagged using Floy anchor tags inserted well above the lateral line just posterior of the dorsal fin. Data collected at the time of tagging included: tag number, date, species, fork length, method of capture and location. Information recorded at the time of recapture included: tag number, date, method of capture, location and the fate of the fish. The tag and recapture form is illustrated in Figure E.2.5.

Winter field studies were carried out by three crews of three biologists each operating from lodging facilities at Alexander Creek, Deshka River, Montana Creek, Talkeetna and Gold Creek. Transportation was provided by pickup truck, snow machine, helicopter, and fixed-wing ski plane.

The winter studies were considered to be an exploratory phase of the Resident and Juvenile Anadromous project. A large number of sites were visited in an

File No. 03-81-7.10-2.71 Page 1 of _____

SUSITNA HYDRO RESIDENT & JUVENILE ANADROMOUS STUDY
FIXED GEAR CATCH DATA RJ 81-01

Habitat Location _____ Sampling Site _____ River Mile _____ __/__/__/__/__/__

DATE: Gear Set _____ Gear Pulled _____ Collector(s) _____

gear type code	PSN	net length	mesh size	hook size	bait type	TIME set	TIME pulled	TIME total	CATCH - SPECIES CODE NO.	REMARKS
1										
5										
10										

GEAR TYPE CODE

gillnet	1
minnow trap	6
trot line	10
burbot set	10a

SPECIES CODE

burbot	590
chinook 0+	410
chinook 1+	411
chum salmon	460
coho 0+	430
coho 1+	431
coho 2+	432
cottid	910
dolly varden	530
grayling	810
humpback whitefish	682
lake trout	550
longnose sucker	920
pink salmon	440
rainbow trout	541
round whitefish	686
smelt/eulachon	511
sockeye 0+	420
sockeye 1+	421
stickleback	860

BAIT CODE

artificial	1
fish	2
eggs	3
other (specify in remarks)	4

Figure E.2.2. Resident and juvenile anadromous study, catch and effort form, fixed gear, 1980-1981.

File No. 03-81-7.10-2.74 Page 1 of ____

SUSITNA HYDRO RESIDENT & JUVENILE ANADROMOUS STUDY
MOBILE GEAR CATCH DATA RJ 81-04

Habitat Location _____ Sampling Site _____ River Mile _____ __ __/__ __/__ __/__ __/__

DATE: Gear Set _____ Gear Pulled _____ Collector(s) _____

gear type code	PSN	net length	mesh size	bait type	hook size	TIME set	TIME pulled	TIME total*	CATCH - SPECIES CODE NO.										REMARKS

* total time for beach seine haul, electroshock and hook & line

GEAR TYPE CODE

drift gillnet	1*
electroshock	2
beach seine	3
hook & line	9
other (specify)	0

SPECIES CODE

burbot	090	humpback whitefish	082
chinook 0+	410	lake trout	050
chinook 1+	411	longnose sucker	020
chum salmon	450	pink salmon	440
coho 0+	430	rainbow trout	041
coho 1+	431	round whitefish	088
coho 2+	432	smelt/eulachon	011
cottid	010	sockeye 0+	420
dolly varden	030	sockeye 1+	421
grayling	010	slickleback	060

BAIT TYPE CODE

artificial	1
fish	2
eggs	3
other	4

Figure E.2.3 Resident and juvenile anadromous study, catch and effort form, mobile gear, 1980-1981.

File No. 03-81-7.10-2.72 Page ____ of ____

SUSITNA HYDRO RESIDENT & JUVENILE ANADROMOUS STUDY
BIOLOGICAL DATA RJ 81-02

Habitat Location _____ Sampling Site _____ River Mile _____ __/__/__/__/__/__

Date(s) Collected _____ Collector(s) _____

	species code	length (mm)	sex	age	scale card #	gear type code	PSN	mesh size	remark on back		species code	length (mm)	sex	age	scale card #	gear type code	PSN	mesh size	remark on back
1										26									
2										27									
3										28									
4										29									
5										30									
6										31									
7										32									
8										33									
9										34									
10										35									
11										36									
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15										40									
16										41									
17										42									
18										43									
19										44									
20										45									
21										46									
22										47									
23										48									
24										49									
25										50									

GEAR TYPE CODE

beach seine	3
burbot set	10
drift gillnet	1
electroshock	2
gillnet	1
hook & line	9
minnow trap	5
trot line	10

SPECIES CODE

burbot	590	humpback whitefish	582
chinook 0+	410	lake trout	550
chinook 1+	411	longnose sucker	920
chum salmon	450	pink salmon	440
coho 0+	430	rainbow trout	541
coho 1+	431	round whitefish	586
coho 2+	432	smelt/eulachon	511
cottid	910	sockeye 0+	420
dolly varden	530	sockeye 1+	421
arayling	610	stickleback	860

Figure E.2.4. Resident and juvenile anadromous study, biological data form, 1980-1981.

File No. 03-81-7.10-2.73

SUSITNA HYDRO RESIDENT & JUVENILE ANADROMOUS STUDY
TAG AND RECAPTURE DATA RJ 81-03

TAGGING DATA						RECAPTURE DATA					
tag no.	gear code	date	species code	length (mm)	Habitat Location	date	recap code	gear code	length (mm)	Habitat Location	released

SPECIES CODE	
burbot	080
dolly varden	630
grayling	610
humpback whitefish	662
rainbow trout	641
round whitefish	666
lake trout	650

GEAR TYPE CODE	
beach seine	3
burbot set	10a
drift gillnet	1a
electroshock	2
gillnet	1
hook & line	9
minnow trap	5
trot line	10

RECAPTURE CODE	
Su Hydro staff	1
ADF&G (other)	2
Sport Fishermen	3

Figure E.2.5. Resident and juvenile anadromous study, tag and recapture form, 1980-1981.

attempt to achieve wide coverage and identify representative aquatic habitat. This period from November, 1980 to May, 1981 was also used to obtain project equipment and hire and train project personnel.

A total of eleven biologists, seven from the Resident and Juvenile Anadromous project and four from the Aquatic Habitat project operated as four distinct crews to accomplish the objectives of the summer (June - September) field program. The crews were based in semi-permanent tent camps located at the Yentna, Sunshine and Talkeetna fishwheel stations and at Gold Creek. Each crew utilized a pickup truck, outboard jet powered riverboat and helicopter for transportation and provided their own logistical support (i.e. gas, food). The number of habitat location sites assigned to each crew consisted of: Yentna-12, Sunshine-9, Talkeetna-11, and Gold Creek-12.

3. SPECIES REPORTS - RESIDENT FISH

3.1 RAINBOW TROUT

3.1.1 Abstract

During November, 1980, through October, 1981, 395 rainbow trout, Salmo gairdneri Richardson, were collected from 40 habitat locations along the Susitna River from Alexander Creek (R.M. 10.1) to Portage Creek (R.M. 148.8). Peak rainbow trout catches occurred from late June to early July and in September. The largest catch per unit efforts for rainbow trout were made at Lane Creek (R.M. 113.6), Mainstem 2 (R.M. 114.4), and Anderson Creek (R.M. 23.8). Habitat locations at the mouths of tributary streams produced higher catches per unit effort than did mainstem river locations. Fork lengths ranged from 48 mm to 541 mm with a mean length of 285 mm. Lengths of rainbow trout in the Cook Inlet to Talkeetna reach were consistently 20-40 mm larger in each age class than those recorded in the Talkeetna to Devil Canyon reach. The most prevalent age classes captured were Age III, Age IV, and Age V. The sex of 71 rainbow trout were determined of which, 30.9 percent were male and 69.1 percent were female. Two hundred and eleven rainbow trout were tagged with Floy anchor tags and released in the area of their capture. Data collected from seven recaptures indicate that movements of the rainbow trout observed to date appear to be random.

3.1.2 Introduction

The original native range of the rainbow trout Salmo gairdneri Richardson extended along the west coast of North America from near Curdad, Mexico to the Kuskokwim River drainage in western Alaska.

Native rainbow trout inhabit the coastal rivers of Southeast Alaska, the Copper River, Bristol Bay drainages, and the lower Kuskokwim River as well as streams of the Kenai Peninsula and the Susitna River. In addition to their native range, rainbow trout have been introduced into numerous lakes, ponds and gravel pits in the Fairbanks region.

Portage Creek, a clearwater tributary of the Susitna River at RM 148.8, supports the northernmost population of rainbow trout in the Susitna drainage and also represents one of the northernmost boundaries of the native range in North America.

Native stream dwelling rainbow trout under clear water conditions appear blue green on the back, silver grading to white on the sides and underbelly, and have a red lateral band. They tend to be heavily spotted on the body, dorsal fin and tail.

The general life history of rainbow trout has been extensively discussed by Morrow (1980) and Scott and Crossman (1973). Basically, there are three life history variations of rainbow trout: resident stream, resident lake, and anadromous steelhead. Rainbows are basically spring spawners, with the majority of spawning occurring from mid April to late June. Spawning takes

place only in streams, and typically in a riffle with a bed of fine gravel located upstream of a pool. Preferred spawning temperatures are between 10°-13°C, but in Alaska spawning may occur at temperatures as low as 5.5°C after spring breakup.

Sexual maturity is attained as early as age II for males or as late as age VI in females. In general, maturity occurs at age III to V, with males usually maturing a year earlier than females.

Rainbow trout feed on a variety of invertebrates, preferring the larvae and adult forms of dipteran insects, and crustaceans such as Gammarus sp. Adult fishes are opportunistic and will feed on salmon eggs, snails, and other fish species.

Rainbow trout are one of the most prized and sought after sport fishes in North America. Susitna River sport harvest and effort levels have increased steadily over the past five years. Mills (1980) estimates that over 12,000 rainbow trout were harvested from the Susitna River and its primary tributaries in 1980, accounting for 17 percent of the state's harvest of native rainbow trout.

3.1.3 Methods

Rainbow trout were collected in the summer and fall of 1981 with variable mesh gillnets (four 7.5 ft. panels with 1 to 2-1/2 inch stretch mesh (1/2 to 1-1/4" bar mesh), fishwheels, boat mounted electrofishing units, hook and line, trot lines and minnow traps.

All fish captured were measured to fork length in millimeters (mm). Sex was determined by necropsy or by discharge of sex products during handling. Age determinations were made by scale analysis. Upon recovery from the effects of capture, fish in good condition were tagged with Floy anchor tags and released.

3.1.4 Results and Discussion

3.1.4.1 Distribution and Relative Abundance

Rainbow trout were collected at seven tributary and four mainstem habitat location sites along the Susitna River from Alexander Creek (RM 10.1) to Slough 10 (RM 133.8) during November, 1980 to May, 1981. Appendix Table EB-1 lists rainbow trout catch rate by various sampling gear types and locations. This species did not appear consistently in catches from any of the locations sampled, however low densities of rainbow trout appear to be present throughout the winter months.

Rainbow trout were captured at a total of 91 percent of the habitat locations in the Cook Inlet to Devil Canyon reach, from Alexander Creek (RM 10.1) to Portage Creek (RM 148.8) during June to September 1981. The percent incidence of catches in the Cook Inlet to Talkeetna and the Talkeetna to Devil Canyon reaches was 81 percent and 100 percent, respectively.

In the Cook Inlet to Talkeetna reach, the percent incidence of catches at habitat location sites ranged from a high of 50 percent during the first two weeks of September, to a low of 7 percent during the first two weeks of August (Figure E.3.1.1).

The incidence of rainbow trout in habitat locations sampled remained in the 20 to 30 percent range from the first of June through July 30 and again from August 15 to August 30. The low percentage of incidence which occurred from August 1 to August 14 was probably due to coinciding high water levels and the resultant ineffectiveness of the sampling gear.

Habitat locations associated with tributary streams produced higher catches per unit effort than did the mainstem locations. Consistent catches of rainbow trout were recorded at Anderson Creek, Alexander Creek, and Deshka River habitat location sites. Catch per gillnet at Anderson Creek rose to 9.0 in late September, while highs of 1.0 and 0.8 fish per trot line were reached at Alexander Creek and the Deshka River, respectively, during the last two weeks of August.

In the Talkeetna to Devil Canyon reach, the percent incidence of rainbow trout catches at habitat locations ranged from 77 percent during late June and again in early September to a low of 18 percent during early August (Figure E.3.1.2). The June peak is probably due to the presence and movements of spawning fish, while the high in September reflects movement downstream into winter habitat. The low percent incidence in early August, the same as in the Cook Inlet to Talkeetna reach, was probably caused by high, flood stage waters and associated factors.

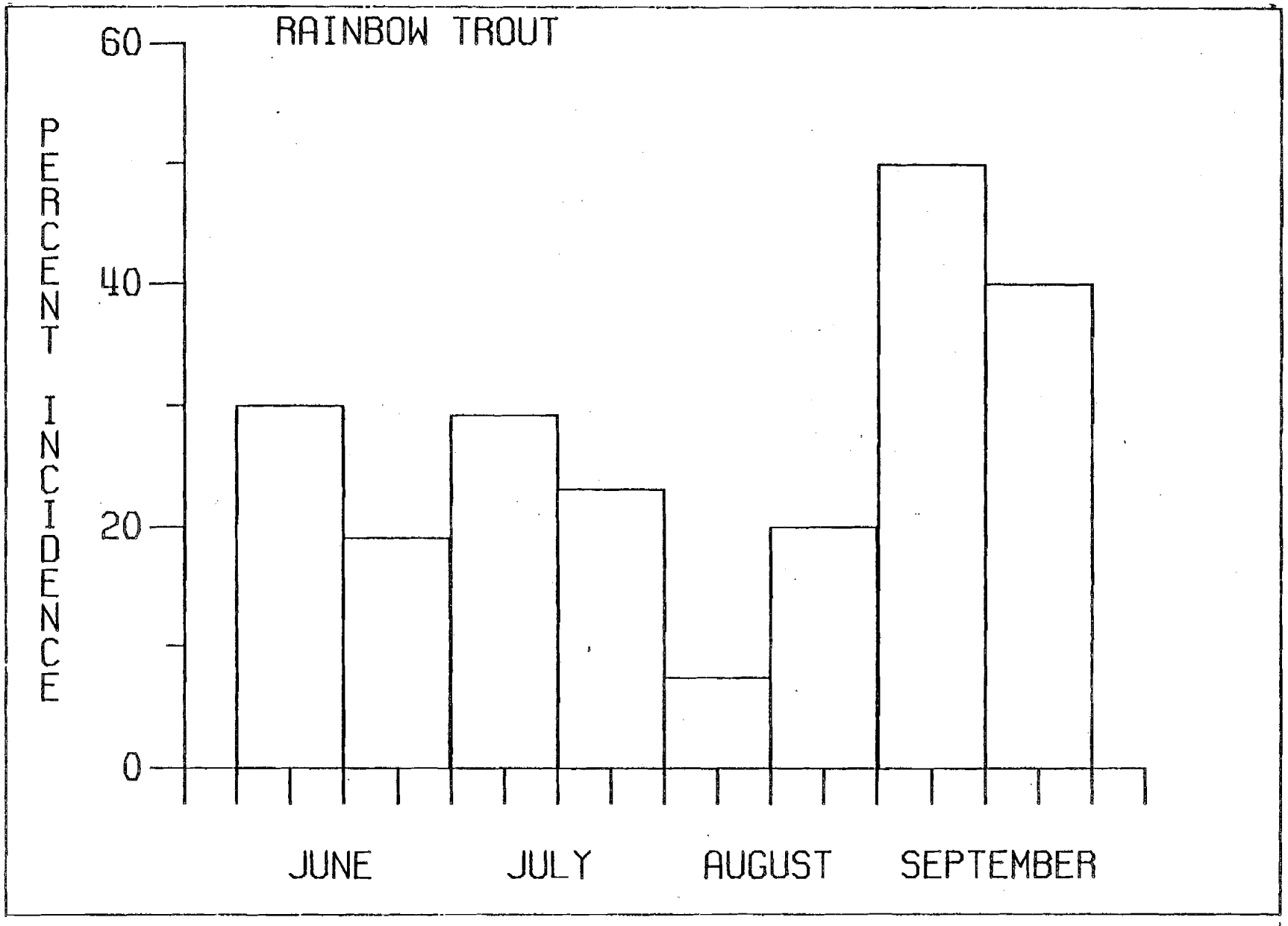

Figure E.3.1.1. Percent incidence of rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

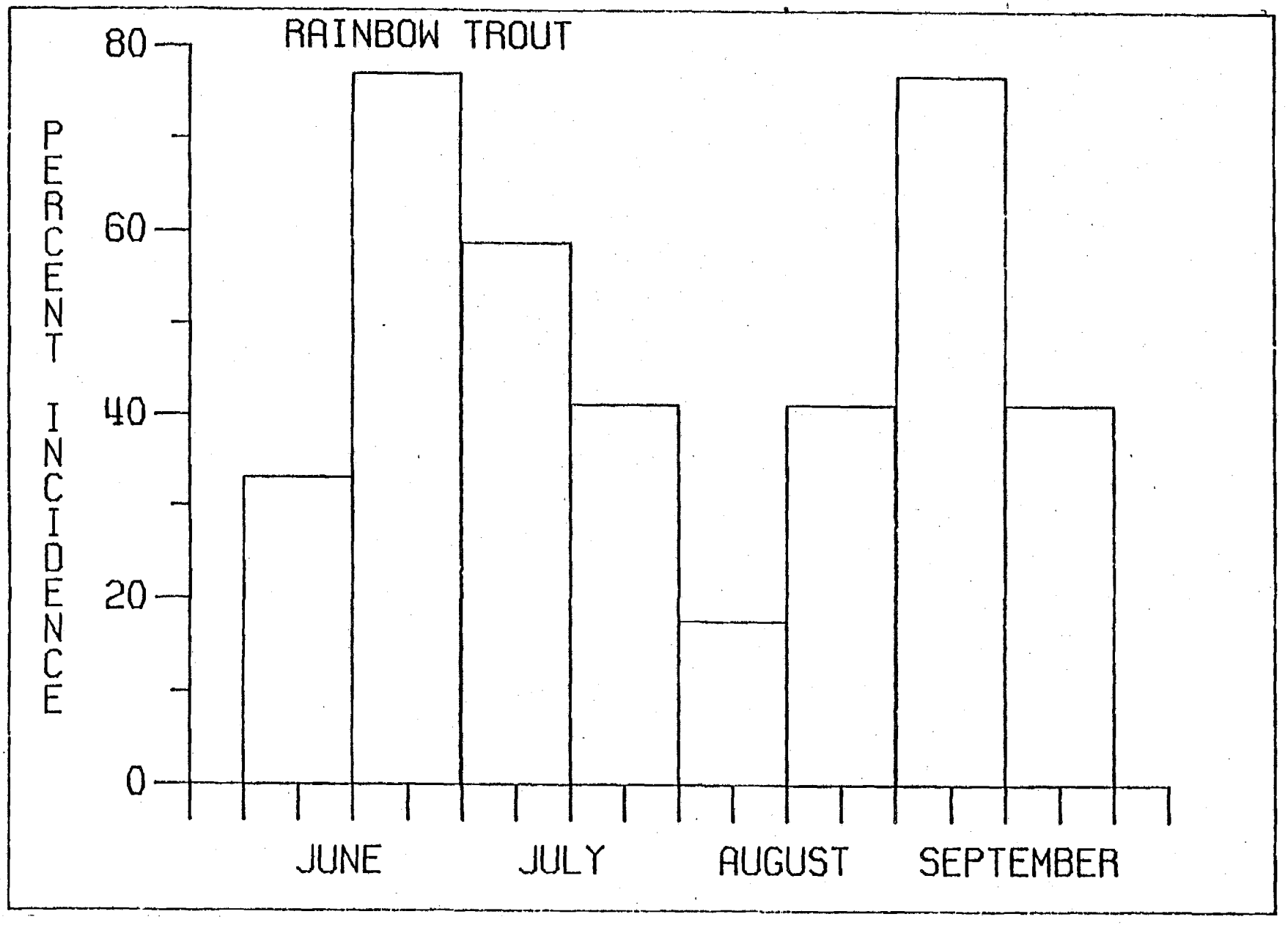

Figure E.3.1.2. Percent incidence of rainbow trout captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

The most consistent catches of rainbow trout occurred at tributary mouth and slough habitat locations.

Catches per gillnet ranged from 0.0 to 6.0 per day at tributary and slough locations, with the high of 6.0 rainbows per day recorded at Whiskers Creek Slough during late June. Hook and line catches produced highs of 2.0 and 7.0 rainbows per hour at Portage Creek and Whiskers Slough, respectively. High catches per unit effort at Whiskers Creek and Whiskers Slough in June are believed to be the result of rainbows passing through this area on their way to spawning in Whiskers Creek.

3.1.4.2 Age, Length, and Sex Composition

One hundred eighty four Susitna River rainbow trout collected by fishwheel, trot line, electrofishing and hook and line from Cook Inlet to Devil Canyon were aged using scale analysis. Age class distribution data should be reviewed with the understanding that the sampling design and gear was not equally efficient for all age classes. This holds true for all species discussed in this report. Table E.3.1.1 illustrates that age classes III, IV and V made up a majority of the fish at 30.8 percent, 32.0 percent and 19.0 percent of the total sample respectively. The age class composition was similar for each reporting reach of the lower Susitna River. Rainbow trout in the age sample ranged from age I to age VII.

Figure E.3.1.3 illustrates the mean length and the range of lengths found for each age class of lower Susitna River rainbow trout.

Table E.3.1.1. Rainbow trout, age - length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	-	-	-	-	-	-	-	-	-
I	3	150	128-172	-	-	-	3	150	128-172
II	9	226	160-228	5	184	163-195	14	211	160-228
III	27	264	203-335	30	248	198-350	57	256	198-350
IV	28	323	255-400	31	302	225-415	59	312	225-415
V	17	388	209-480	18	361	297-440	35	374	297-480
VI	6	481	341-545	7	382	286-449	13	428	286-545
VII	2	507	505-510	1	378	378	3	464	378-510
VIII	-	-	-	-	-	-	-	-	-
IX	-	-	-	-	-	-	-	-	-
X	-	-	-	-	-	-	-	-	-
TOTALS	92	317	128-545	92	296	163-449	184	307	128-545

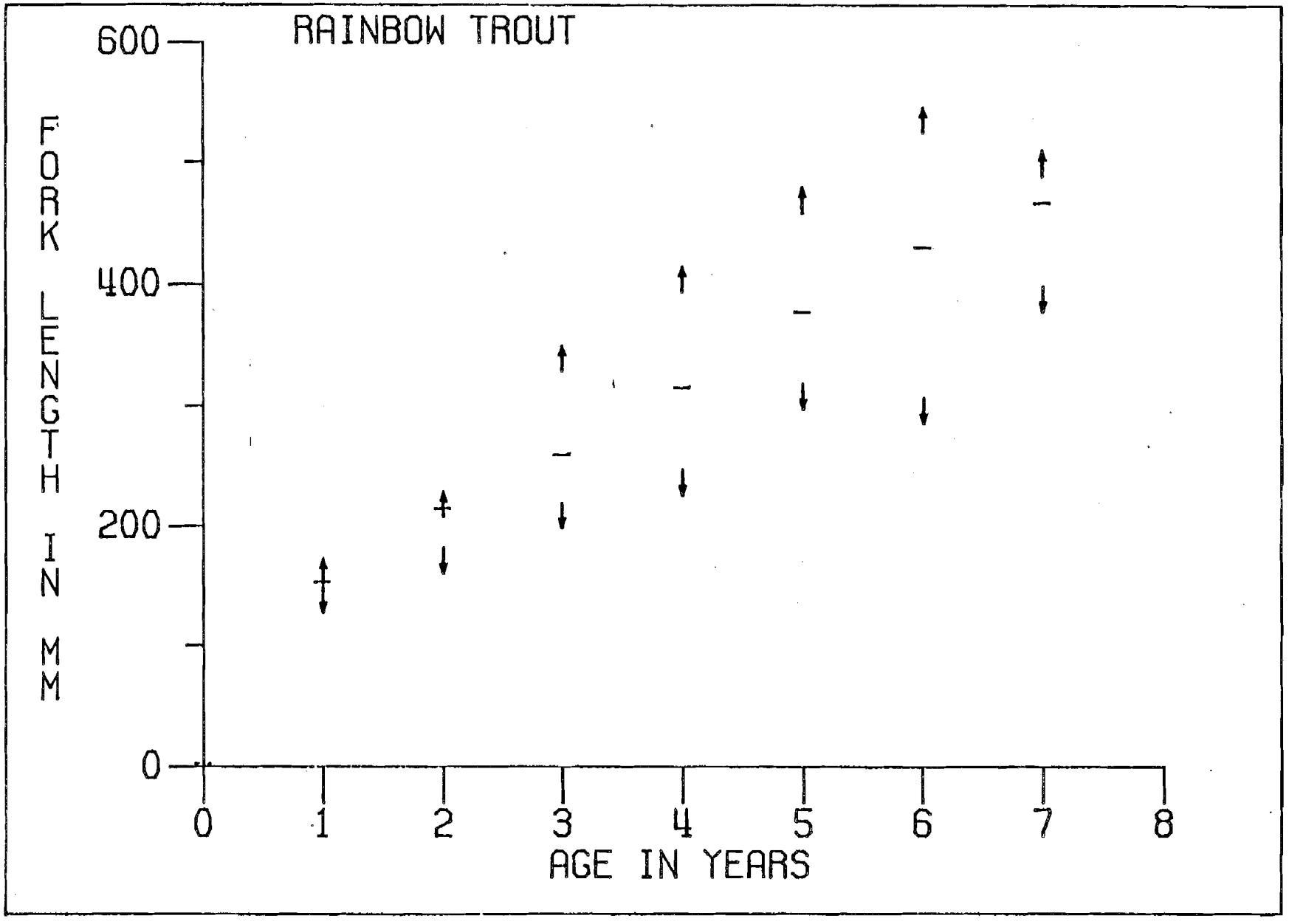

Figure E.3.1.3. Age and length relationship for rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

Fork length measurements to the nearest millimeter (mm) were taken from a total of 273 rainbow trout collected during June to September, 1981. Lengths ranged from 48mm to 541mm with a mean of 285mm. Seventy five percent of the recorded lengths were in the 220-375mm range (Figure E.3.1.4), which includes, age III, IV and V rainbow.

Lengths of rainbow trout in the Cook Inlet to Talkeetna reach were consistently 20-40mm larger in each age class than the lengths recorded in the Talkeetna to Devil Canyon reach.

Sex was determined on a total of 71 rainbow trout, indicating 22 males (30.9 percent) and 49 females (69.1 percent). Males comprised 27.2 percent of the Age III fishes for which sexual determinations were made and 33.3 percent of the Age IV fish (Table E.3.1.2).

3.1.4.3 Tagging and Recapture

Two hundred eleven rainbow trout were tagged with Floy anchor tags and released in the area of their capture (Table E.3.1.3). Seven tagged rainbows were subsequently recaptured from 2 to 52 days after tagging. The range of travel by these fish was from 0 to 34.5 miles.

Four of the tagged rainbow trout were recaptured at or within one quarter (0.25) mile of their tagging site. Of the three remaining recaptures, one, tagged at Slough 10 (RM 133.8) on July 6, was recaptured August 3rd, 2.8 miles down the Susitna River at the mouth of Sherman Creek (RM 131.0). Another

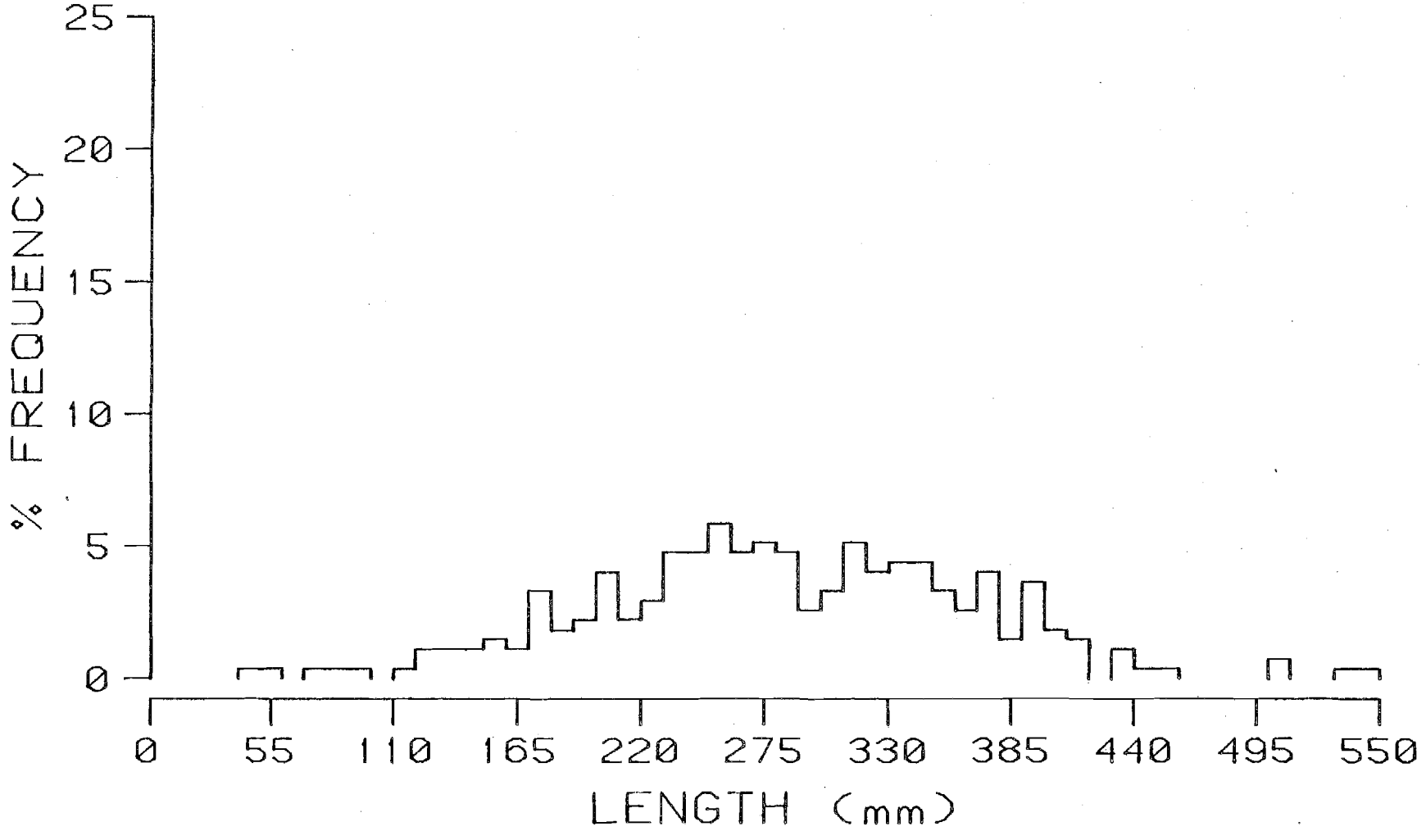

Figure E.3.1.4. Length frequency composition of rainbow trout captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.1.2. Summary of sex determination data for rainbow trout on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	2 (66.7)	1 (33.3)	3	1 (50.0)	1 (50.0)	2	3 (60.0)	2 (40.0)	5
III	2 (14.3)	12 (85.7)	14	4 (50.0)	4 (50.0)	8	6 (27.2)	16 (72.8)	22
IV	5 (62.5)	3 (37.5)	8	3 (18.8)	13 (81.2)	16	8 (33.3)	16 (66.7)	24
V	1 (20.0)	4 (80.0)	5	2 (18.2)	9 (81.8)	11	3 (18.8)	13 (81.2)	16
VI	1 (50.0)	1 (50.0)	2	1 (100.0)	-	1	2 (66.7)	1 (33.3)	3
VII	-	-	-	-	1 (100.0)	1	-	1 (100.0)	1
VIII	-	-	-	-	-	-	-	-	-
IX	-	-	-	-	-	-	-	-	-
X	-	-	-	-	-	-	-	-	-
TOTALS	11 (34.4)	21 (65.6)	32	11 (28.2)	28 (71.8)	39	22 (30.9)	49 (69.1)	71

Table E.3.1.3. Summary of the rainbow trout tagging data on the Susitna River between Cook Inlet and Devil Canyon, May to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
		Sunshine			
Cook Inlet to Talkeetna	5/1-5/15		10	2	12
	6/1-6/15		1		1
	7/1-7/15		3	1	4
	7/16-7/31		4		4
	8/1-8/15		1	1	2
	8/16-8/31	3	6		9
	9/1-9/15	16	3		19
	9/16-9/30	13	18	3	34
	10/1-10/15		6	28	34
	Subtotal	32	52	35	119
		Talkeetna			
Talkeetna to Devil Canyon	6/1-6/15		12		12
	6/16-6/30		12		12
	7/1-7/15		9	1	10
	7/16-7/31		3		3
	8/1-8/15		3		3
	8/16-8/31		23		23
	9/1-9/15	2	10		12
	9/16-9/30		15		15
	10/1-10/15			2	2
	Subtotal	2	87	3	92
	TOTALS	34	139	38	211

rainbow trout, tagged May 10 at the mouth of Caswell Creek (RM 63.0), was recaptured May 20 near the mouth of Goose Creek at River Mile 72.0. The final fish, tagged at Cache Creek Slough (RM 95.5) on May 6, was recaptured May 17 at the mouth of Kashwitna River (RM 61.0), a movement of 34.5 river miles downstream.

3.2 ARCTIC GRAYLING

3.2.1 Abstract

From February to October, 1981, 498 Arctic grayling, Thymallus arcticus Pallus, were captured on the lower Susitna River. Arctic grayling were collected at 29 habitat locations between Alexander Creek (R.M. 10.1) and Portage Creek (R.M. 148.8). Peak grayling catches occurred during May and September. The largest catch per unit efforts for grayling were made at Cache Creek Slough (R.M. 95.5), Montana Creek (R.M. 77.0), and Portage Creek (R.M. 148.8).

The mean fork length for all fish sampled was 202 mm. The most prevalent age classes captured were Age V and Age VI. The sex of 57 Arctic grayling was determined and of these, 37 percent were male and 63 percent were female. Three hundred one Arctic grayling were tagged with Floy anchor tags. Of the three recaptures made to date, two Arctic grayling tagged in early May at the mouth of the Deshka River (R..M. 40.6) migrated upstream and were recaptured in late May and mid-September respectively at the mouths of tributary streams 9.9 miles and 32.5 miles from the initial point of capture.

3.2.2 Introduction

The distribution of the Arctic grayling Thymallus arcticus Pallas is holarctic, encompassing much of northwestern North America and northeastern Siberia (Scott and Crossman 1973). In Alaska, native populations of Arctic grayling are found in freshwater drainages throughout interior and Arctic

Alaska and on the Alaska Peninsula south to approximately Port Heiden (ADF&G et al. 1978). Large numbers of grayling inhabit the Susitna River and its clearwater tributary systems i.e. Alexander Creek, Deshka River, Willow Creek, Montana Creek and Portage Creek.

Adult Arctic grayling have a strikingly large dorsal fin, small mouth, and fine teeth in both jaws. Juveniles can be distinguished by the presence of narrow, vertically elongated parr marks.

Grayling are freshwater residents which are largely found in clear, cold streams, and lakes (Scott and Crossman 1973). Silt laden glacial systems, such as the Susitna River, are believed to support fewer graylings year round; however, such systems are believed to provide essential migratory channels and over wintering habitat (ADF&G et al. 1978). The Arctic grayling is characterized by Reed (1964), as a migratory species. During spring breakup, from April to June, adults migrate from ice-covered lakes and large rivers into clear gravel-bottomed tributaries to spawn (Morrow 1980). Arctic grayling reach sexual maturity in Alaska, at Age II to VII years and are capable of spawning several times during their life time. After spawning, the adults move away from the spawning areas to spend the rest of the summer feeding on aquatic and terrestrial insects taken from the aquatic drift (Vascotto 1970). A downstream migration back to overwintering areas in large rivers and deep lakes occurs in late August to mid-September (Pease 1974).

The Arctic grayling is one of the most important sport fishes of Alaska and northern Canada. Twenty percent of the estimated 69,462 grayling harvested in

southcentral Alaska in 1980 were taken in Alexander Creek, the Deshka River, and the other Susitna River drainages along the Parks Highway between Willow and the Parks Highway bridge (Mills 1980). Grayling are also utilized by subsistence fishermen in some areas for dog food and personal consumption.

3.2.3 Methods

Arctic grayling were captured in the Susitna River from the mouth of Alexander Creek (R.M. 10.1) to the mouth of Portage Creek (R.M. 148.8) just below Devil Canyon, from February to October of 1981. Set and drift gill nets, hook and line, trot lines, boat mounted electrofishing units, beach seines, and minnow traps were used to collect samples of Arctic grayling.

Each fish captured was measured for fork length in millimeters. Age was determined by scale analysis. Uninjured fish were tagged with numbered Floy anchor tags and released. All dead and seriously injured fish were dissected to determine sex and sexual maturity.

3.2.4 Results and Discussion

3.2.4.1 Distribution and Relative Abundance

Arctic grayling were first captured and observed at R.M. 93.5, one mile southwest of the head of Birch Creek Slough, on February 19, 1981. Grayling were gill netted under the ice infrequently throughout the winter months. Gill net catches of adult grayling increased sharply from May 1 to 15 at the mouths of the Deshka River (R.M. 40.6) and Cache Creek Slough (R.M. 95.5).

After May 15 catches declined at all habitat locations on the Susitna River between Cook Inlet and Devil Canyon, however the incidence of grayling, principally juvenile and immature Arctic grayling ranged from 10 to 20 percent of the 44 habitat location sites sampled during each two week period throughout the summer months (Figure E.3.2.1 and E.3.2.2). In September, catches of adult grayling at tributary mouthes increased. Utilizing set gill nets, hook and line, and a boat mounted electroshocking unit, relatively large numbers of Arctic grayling were located on the Susitna River in September at Kashwitna River (R.M. 61.0), Montana Creek (R.M. 77.0), Birch Creek Slough (R.M. 88.4), Lane Creek (R.M. 113.6), Indian River (R.M. 138.6) and Portage Creek (R.M. 148.8) (Appendix Tables EB-2).

3.2.4.2 Age, Length, and Sex Composition

Age determinations were made on 274 Arctic grayling caught on the Susitna River between Alexander Creek (R.M. 10.1) and Portage Creek (R.M. 148.8). These fish ranged in age from Age 0+ to Age X. The most prevalent age classes captured were Age V (17.9%) and Age VI (23.4%) (Table E.3.2.1).

Figure E.3.2.3 illustrates the mean length and range of lengths for each age class of lower Susitna River Arctic grayling. The Age V Arctic grayling had an average fork length of 318 mm (range 270 - 370 mm) and the Age VI averaged 342 mm (range 311 - 369 mm). The largest grayling captured and analyzed for age composition was 450 mm in fork length at Age VII.

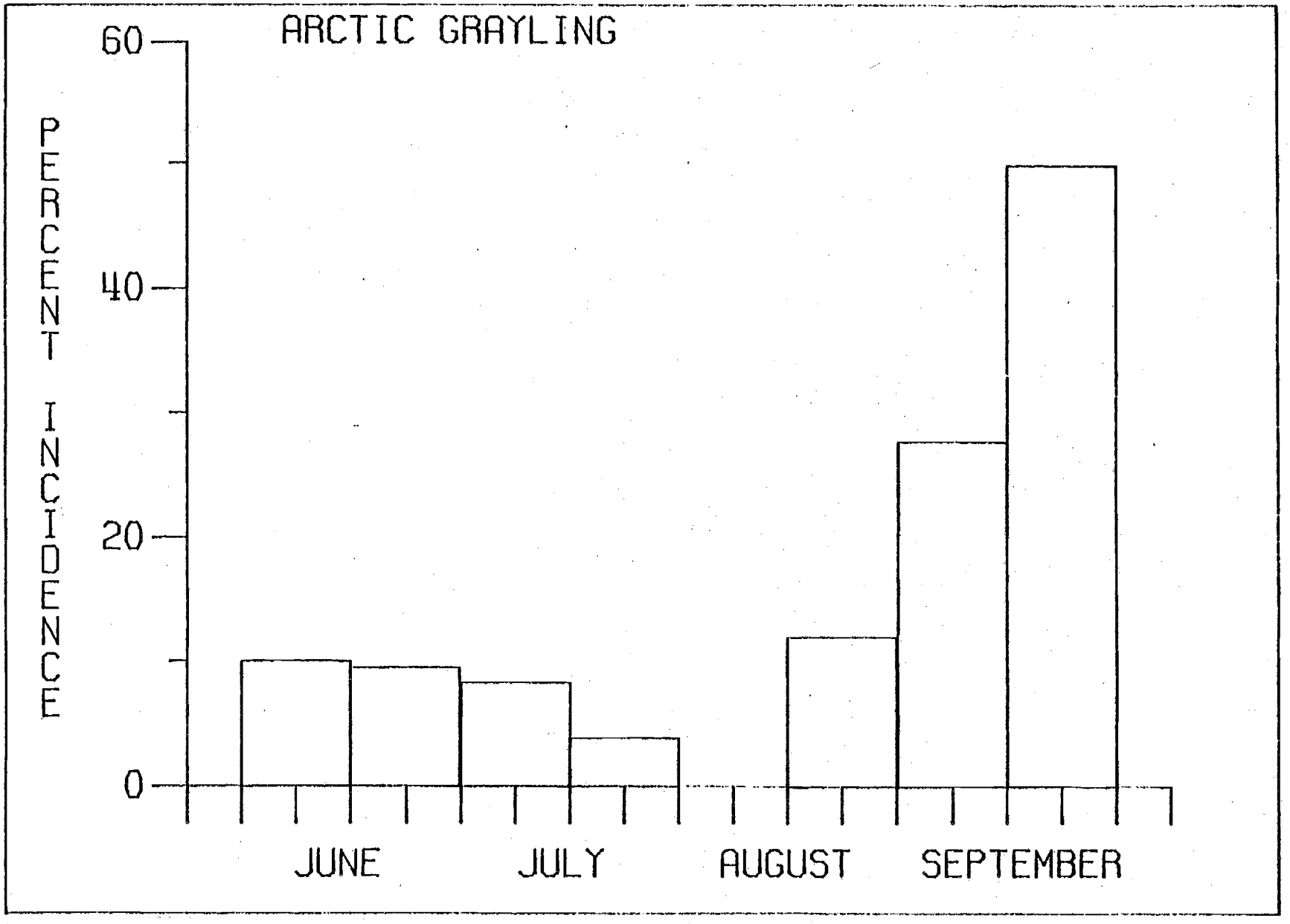

Figure E.3.2.1. Percent incidence of Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

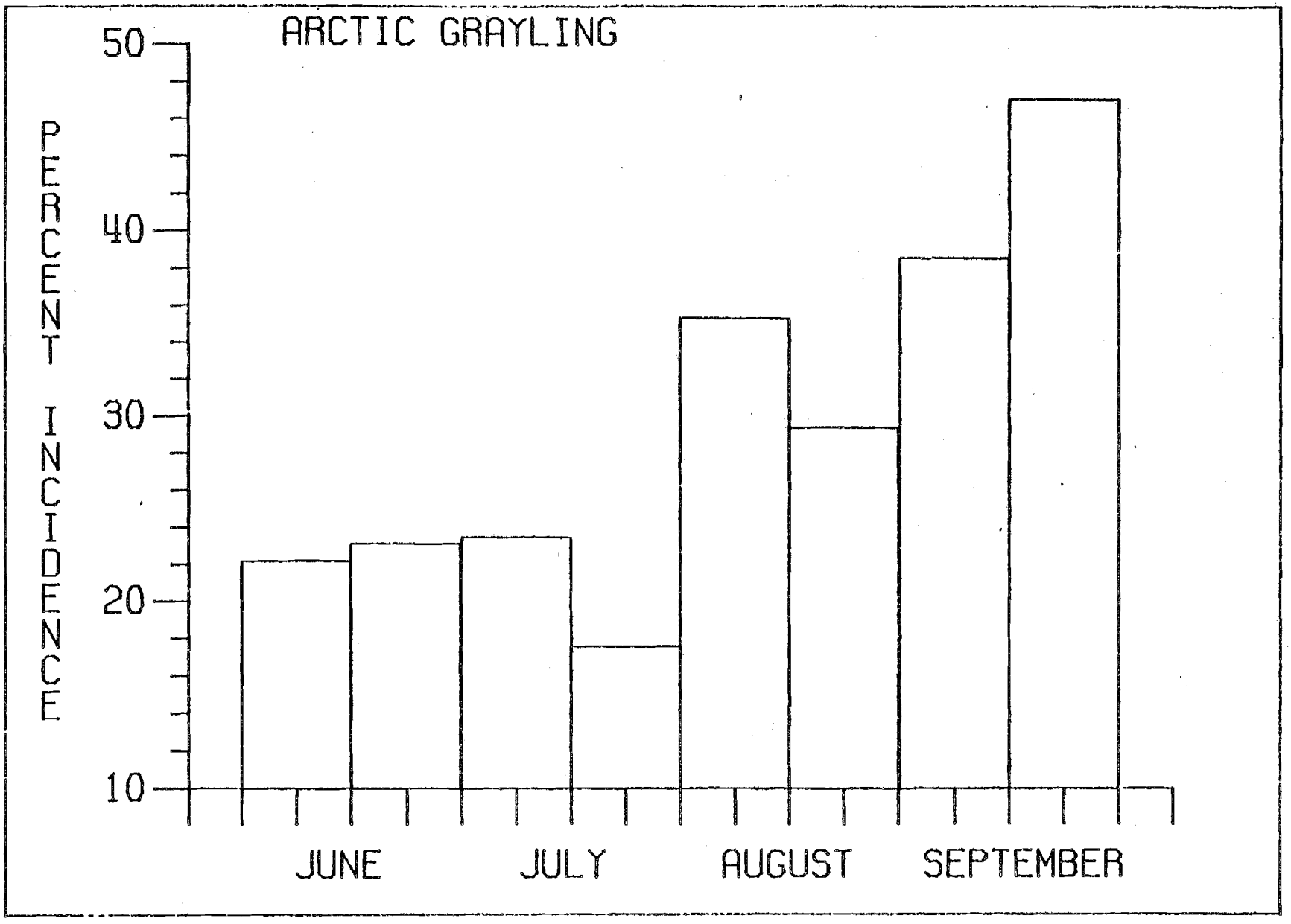

Figure E.3.2.2. Percent incidence of Arctic grayling captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Table E.3.2.1. Arctic grayling, age-length frequency composition on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	5	90	84-95	-	-	-	5	90	84-95
I	1	105	105	9	134	119-180	10	131	105-180
II	5	176	158-192	13	189	172-214	18	186	158-214
III	19	227	206-255	10	244	214-176	29	233	206-276
IV	23	283	246-330	16	297	254-337	39	289	246-337
V	35	320	290-370	14	312	270-355	49	318	270-370
VI	62	341	311-365	2	367	364-369	64	342	311-369
VII	38	369	335-450	1	382	382	39	369	335-450
VIII	17	392	346-420	-	-	-	17	392	346-420
IX	3	406	405-406	-	-	-	3	406	405-406
X	1	426	426	-	-	-	1	426	426
TOTALS	209	320	84-426	65	252	119-382	274	304	84-426

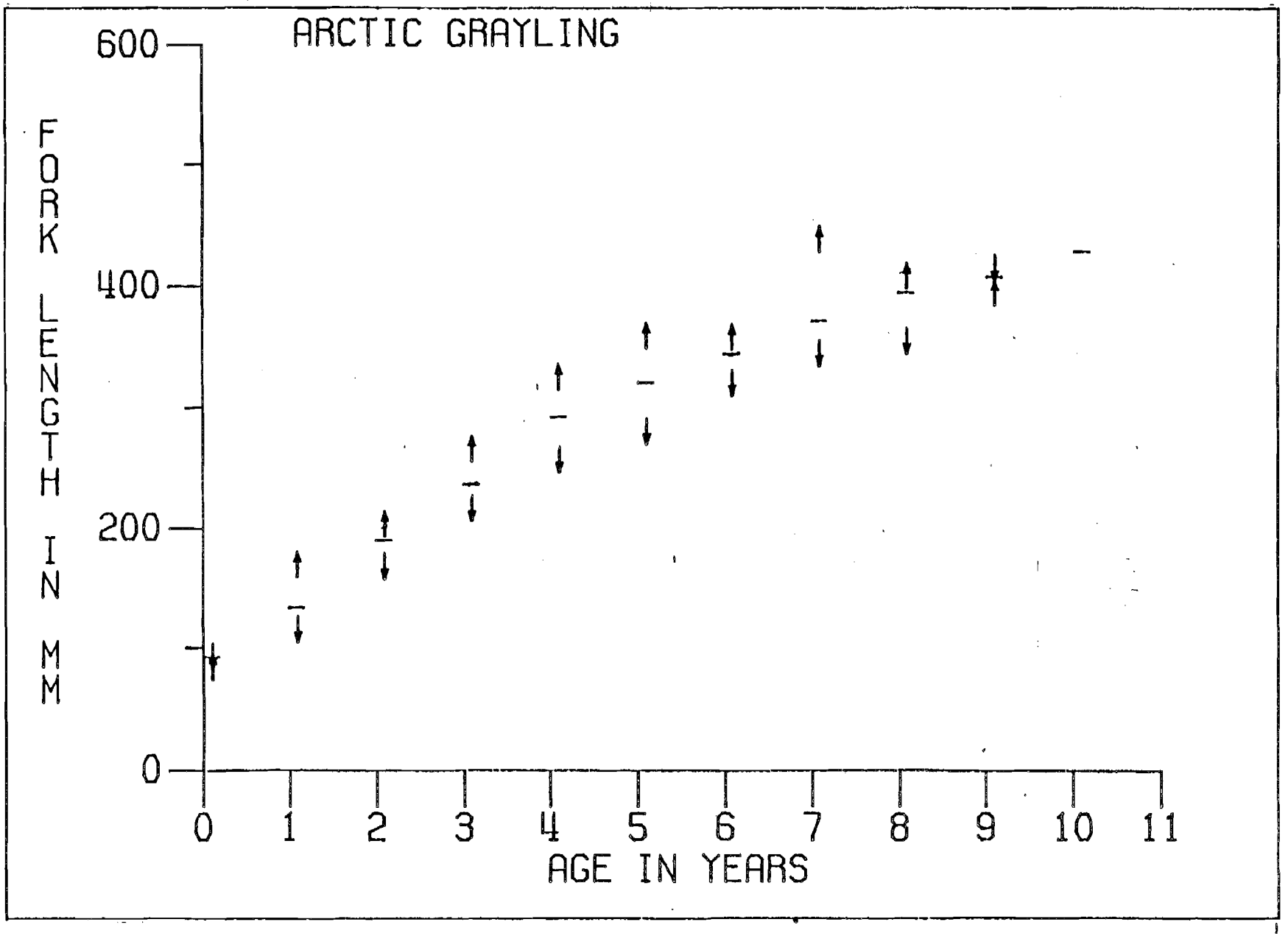

Figure E.3.2.3. Age and length relationship for Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June - October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

Figure E.3.2.4 illustrates the size frequency distribution of all Arctic grayling collected. The fork lengths of the 498 fish that were captured ranged from 41mm to 450mm with a mean length of 202.2mm.

The sex of 57 Arctic grayling was determined and of these, 37 percent were males and 63 percent were females. Among the two most abundant age classes in this sample, age VI and age VII, females comprised 73.3 percent and 21.1 percent of the fish (Table E.3.2.2).

3.2.4.3 Spawning

Arctic grayling begin their spawning migration in the Susitna River in late April. A substantial increase in grayling catches by gill net was noted at the mouths of the Deshka River and Cache Creek between May 1 to May 15th. Necropsies showed most of the fish were sexually mature, however, manipulation of the fishes abdominal cavities produced no milt or eggs so the fish were not fully ripe.

No evidence of Arctic grayling spawning was collected at any sampling locations between Cook Inlet and Devil Canyon during the 1981 season. Consequently, we can only speculate that the adult Arctic grayling from the Susitna River migrate into non-glacial tributaries to spawn some time in late April or May.

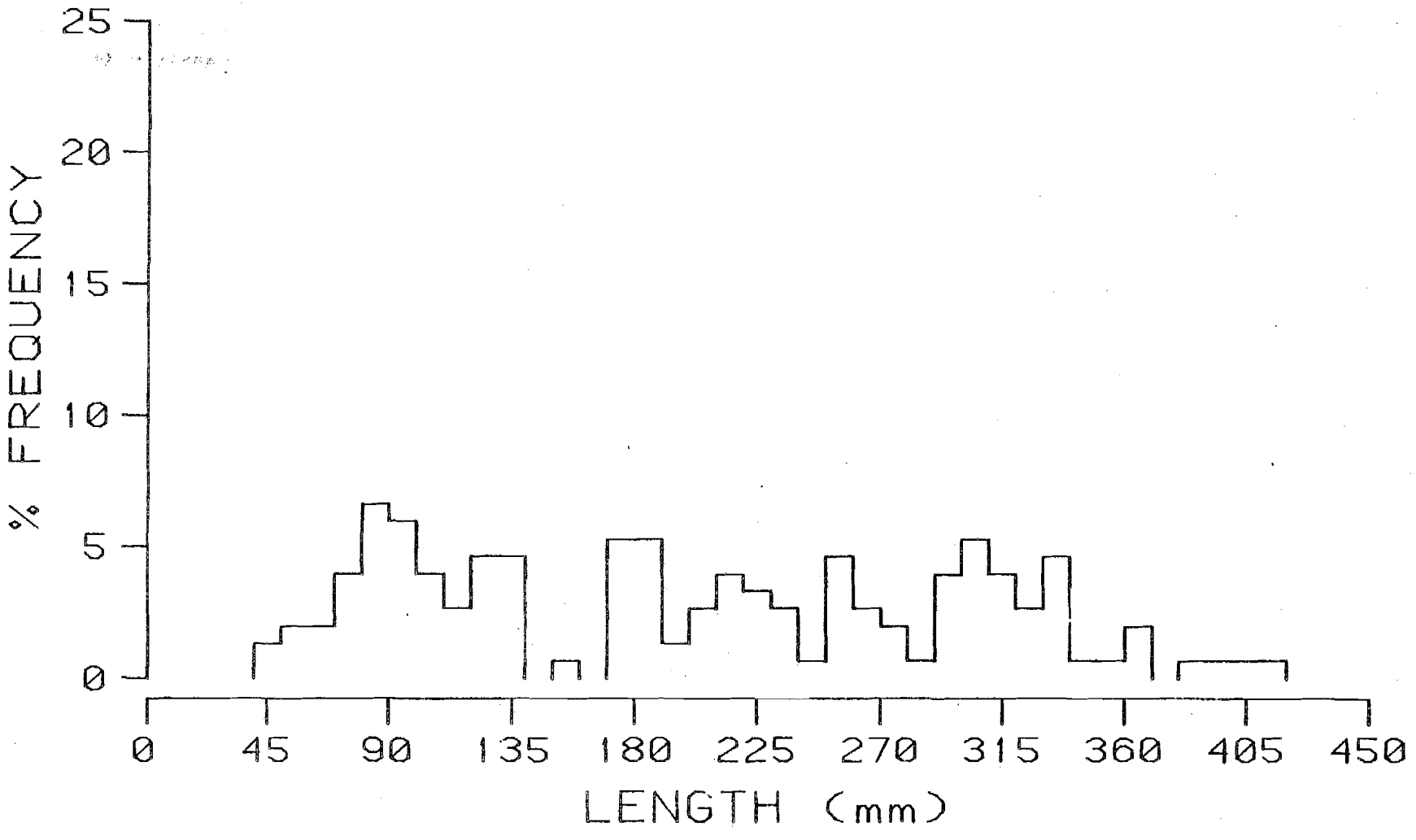

Figure E.3.2.4. Length frequency composition of Arctic grayling captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.2.2. Arctic grayling, summary of sex determination data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	-	-	-	2 (33.3)	4 (66.6)	6	2 (33.3)	4 (66.6)	6
III	0 (0.0)	4 (100.0)	4	1 (50.0)	1 (50.0)	2	1 (16.7)	5 (83.3)	6
IV	0 (0.0)	2 (100.0)	2	4 (80.0)	1 (20.0)	5	4 (57.1)	3 (42.9)	7
V	0 (0.0)	3 (100.0)	3	0 (0.0)	1 (100.0)	1	0 (0.0)	4 (100.0)	4
VI	3 (23.1)	10 (76.9)	13	1 (50.0)	1 (50.0)	2	4 (26.7)	11 (73.3)	15
VII	6 (54.5)	5 (45.5)	11	1 (100.0)	0 (0.0)	1	7 (58.3)	5 (41.7)	12
VIII	3 (42.9)	4 (57.1)	7	-	-	-	3 (42.9)	4 (57.1)	7
TOTALS	12 (30.0)	28 (70.0)	40	9 (53.0)	8 (47.0)	17	21 (37.0)	36 (63.0)	57

3.2.4.4 Tagging and Recapture

A tag and recapture study was initiated to try to monitor seasonal movements and migrations of Arctic grayling. Three hundred one Arctic grayling were tagged with numbered Floy anchor tags between Cook Inlet and Devil Canyon. Table E.3.2.3 summarizes the lower river tagging data by reach. To date, only three tagged grayling have been recaptured. Two of these tagged in early May migrated upstream from the Deshka River mouth, 9.9 miles and 32.5 miles respectively.

The first was recaptured approximately two weeks after tagging at Little Willow Creek near the Parks Highway. The second fish was recaptured in September in the vicinity of Goose Creek. The third fish was tagged and recaptured on the same day in early October with an electroshocking unit. It traveled downstream a distance of 1.5 miles from Sunshine Camp to Montana Creek. With this last fish, it is difficult to determine whether it was migration downstream or if it was disoriented after being shocked.

Table E.3.2.3. Arctic grayling, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
		Sunshine			
Cook Inlet to Talkeetna	5/1-5/15	-	133[a]	2	135
	9/1-9/15	8	-	-	8
	9/16-9/30	7	15	16	38
	10/1-10/15	-	12	59[b]	71
	Subtotal	15	160	77	252
		Talkeetna			
Talkeetna to Devils Canyon	6/16-6/30	-	2	-	2
	7/1-7/15	-	1	-	1
	8/16-8/31	-	2	5	7
	9/1-9/15	1	25	-	26
	9/16-9/30	-	6	-	6
	10/1-10/15	-	-	7	7
	Subtotal	1	36	12	49
TOTAL		16	196	89	301

[a] Two tags recaptured - See discussion in text.
[b] One tag recaptured - See discussion in text.

3.3 BURBOT

3.3.1 Abstract

During November, 1980 through October, 1981, 562 burbot, Lota lota, L. were collected in the lower Susitna River. Burbot were captured at 43 habitat locations and 17 selected fish habitat sites between Alexander Creek (R.M. 10.1) and Portage Creek (R.M. 148.8).

Ninety-five percent of all burbot captured at these sites were collected on baited trotlines. Peak burbot catch rates occurred in late August and early September. The mainstem site location opposite Curry at R.M. 120.7 and the mainstem site located 0.25 miles upstream of Parks Highway bridge (R.M. 84.0) produced the highest catch per unit effort. The mean length of 457 burbot measured was 428 mm. Otoliths collected from 120 burbot were used for age determination. The most prevalent age classes were Age III, Age V, and Age VIII. One hundred and eight burbot were examined for sex, 48 percent were males and 52 percent were females. Two hundred and forty burbot were tagged with Floy anchor tags and 63 were tagged using Disc dangler tags to monitor burbot movements in the lower Susitna River.

3.3.2 Introduction

Burbot, Lota lota Linnaeus, known also as lawyer, ling cod, lush, and mud shark, are the only members of the cod family (Gadidae) which live in fresh water. Their distribution is circumpolar in the northern hemisphere being found in all suitable fresh water habitats in continental Eurasia and North

America southward to approximately 40° N (Scott and Crossman, 1973). In Alaska, burbot are found in the Copper and Susitna rivers, Bristol Bay drainages and throughout the Interior, and Arctic (McLean and Delaney, 1978).

Burbot are elongate, robust and nearly rounded anteriorly while tapering posteriorally with caudal fin flared out and rounded. The mouth is terminal with the upper jaw reaching to just below the eye. A single barbel hangs from the chin. Coloration on the dorsal side ranges from a blotchy yellow to dark olive green while the ventral parts are pale yellow or white (Chen, 1969, Morrow, 1980).

In Alaska, burbot mature between Age III and VI and may live a total of 15 to 20 years. Spawning occurs as early as mid December and may extend through April, taking place at night under the ice in moderately shallow water over a substrate of sand or gravel. Female burbot can deposit up to 1 million eggs. Depending on the temperature, incubation time ranges from 30 to 70 days (Morrow, 1980).

Little is known concerning the movements or migration of burbot, although burbot have been observed migrating during spawning and feeding periods (MacCrimmon, 1959). Burbot are a nocturnal bottom feeding fish. Young burbot (Age I-II) prefer insect larvae (Hanson & Qudri, 1979), while adults will feed on whatever is available but prefer small fish (Hewson, 1955).

Burbot support a limited sport fishery in the lower Susitna River although most are harvested incidentally to salmon and rainbow trout. The Sport Fish

Statewide Harvest Survey (Mills, 1980) estimated that about 550 burbot were harvested out of the Susitna River in 1980.

3.3.3 Methods

Burbot were collected from November, 1980 to September, 1981 with baited trotlines, minnow traps, variable mesh gillnets (four 7.5 foot panels of 1 to 2-1/2 inch stretch mesh) and boat mounted electrofishing units. Since over 95 percent of all burbot were captured on baited trotlines only the results of this method of capture will be used to reflect abundance.

All burbot captured were measured for total length. All burbot uninjured by the sampling gear were initially tagged with Floy anchor tags and with disk dangler tags late in the season. Otoliths were dissected from a representative sample of captured burbot for age determination. Sex was determined by necropsy.

3.3.4 Results and Discussion

3.3.4.1 Distribution and Relative Abundance

From November, 1980 through May, 1981, burbot were captured by various sampling gear placed in the Susitna River from a total of 43 habitat locations and 17 selected fish habitat sites from the mouth of Alexander Creek (RM 10.1) and to the mouth of Portage Creek (R.M. 148.8).

Habitat locations and selected fish habitat sites downstream of Talkeetna, particularly the mouth of the Deshka River (RM 40.6), the mouth of Alexander Creek (RM 10.1), and four mainstem sites located at river mile 10.0, 43.4, 61.0 and 84.0, yielded the highest catch rates (Table E.3.3.1 and Appendix Table EB-3).

Burbot were occasionally encountered in habitat locations or selected sites located upstream of Talkeetna during the winter and those catches were made exclusively at mainstem sites (Table E.3.3.2 and Appendix Table EB-3). The mainstem site opposite Curry at RM 120.7 recorded a catch rate of 0.5 per trot line day, the highest of all sites above Talkeetna.

The distribution of burbot in the Cook Inlet to Talkeetna reach as indicated by the percentage of habitat location sites recording catches of burbot by any gear type, appears to increase as the summer progresses (Figure E.3.3.1). As Appendix Table EB-3 illustrates, burbot catch rates remained low and varied through June and July at most habitat locations with the notable exception of a mainstem location at RM 84.0. This location; comprised of a large, stable, eddy, located just upstream of the Parks Highway bridge recorded the most consistent catches of burbot throughout the year. During August and September, catch rates generally increased and the percentage of habitat locations recording catches of burbot rose to a maximum of 88 percent for the first two weeks of September. In addition to the mainstem location at RM 84.0 burbot were most abundant at the mouth of the Deshka River (RM 40.6), the mouth of Alexander Creek (RM 10.1) and the mouth of Birch Creek Slough (RM 88.4).

Table E.3.3.1. Burbot catch per trotline day at selected fish habitat sites on the Susitna River between Cook Inlet and Talkeetna, November 1980 to May 1981.

River Mile	Burbot per trot line day						
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
10.0	-	-	0.0	-	1.7	-	-
43.4	-	-	-	-	0.6	-	-
60.0	-	-	-	-	-	-	0.0
61.0	-	-	0.1	-	0.5	-	-
93.5	-	-	0.1	0.0	-	-	-

Table E.3.3.2. Burbot catch per trotline day at selected fish habitat sites on the Susitna River between Talkeetna and Devil Canyon, November 1980 to May 1981.

River Mile	Burbot per trot line day						
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
100.2	-	-	-	0.0	0.1	-	-
121.0	-	-	-	-	-	0.0	-
127.1	-	-	-	0.0	0.0	-	-
127.8	-	-	-	-	-	0.0	-
131.0	-	-	-	0.0	0.0	-	-
131.4	-	-	-	0.0	-	-	-
133.6	-	-	0.0	-	-	0.0	-
134.5	-	-	-	-	0.0	0.0	-
135.3	-	-	-	-	-	0.0	-
136.1	-	-	0.0	-	-	-	-
136.7	-	-	0.0	0.2	0.0	0.0	-
142.7	-	-	-	0.7	0.7	-	-

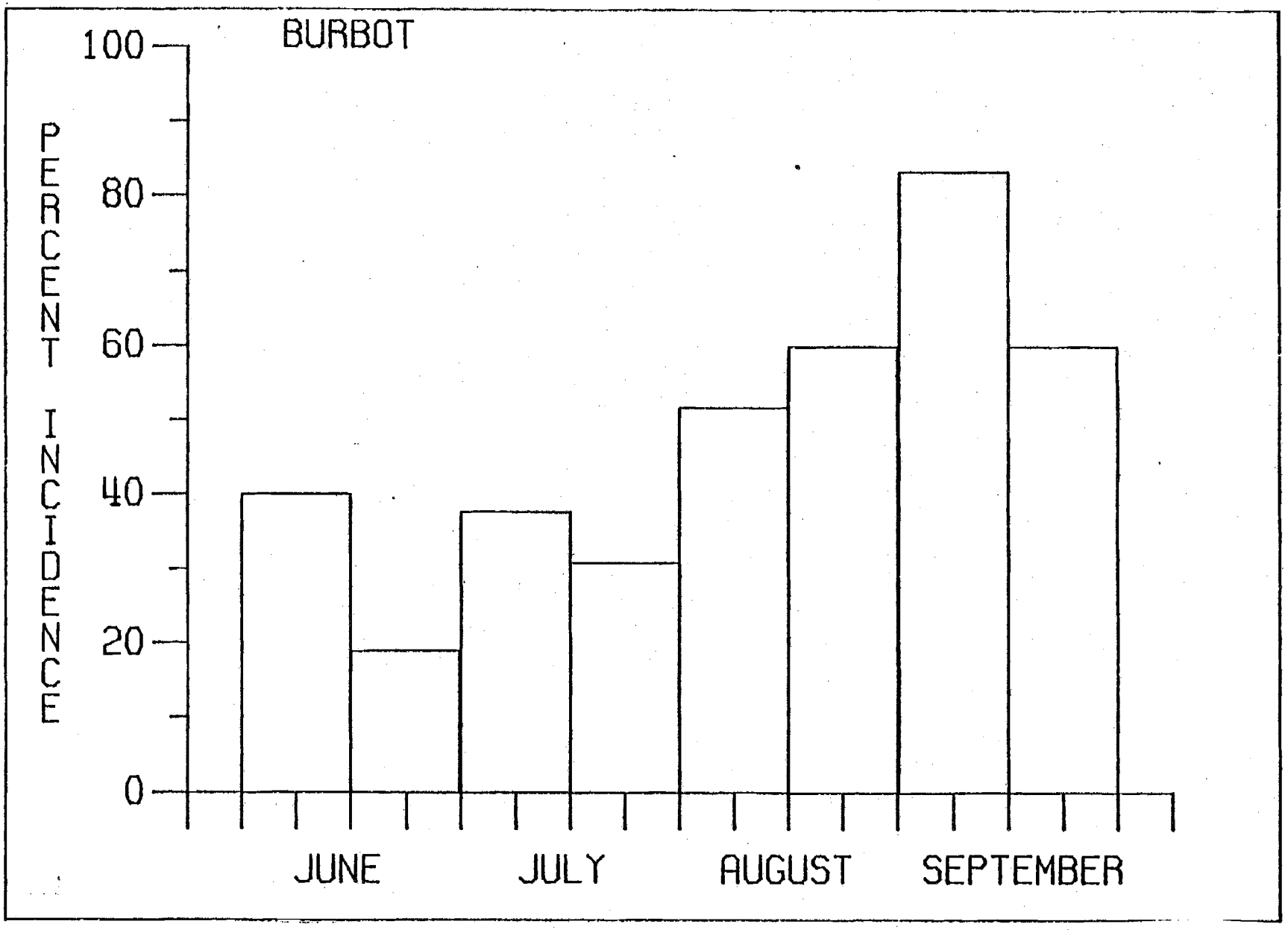

Figure E.3.3.1. Percent incidence of burbot captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

The incidence of burbot catches in the Talkeetna to Devil Canyon reach decreased steadily from early June until mid July when only mainstem sites at river miles 120.7, 123.8, and 146.9 were producing catches. After July 16th, the percentage of habitat location sites recording catches sharply increased and sloughs, creek mouths, and mainstem sites were all recording catches of burbot (Figure E.3.3.2).

The catch per unit effort from June to September varied from 0 to 3.0 burbot per trot line day. Throughout the reach upstream of Talkeetna, the mainstem site 2 miles below Portage Creek (RM 146.9) and a mainstem site at (RM 114.4) were the most productive while Slough 11 (RM 135.3) and the mouth of Whiskers Creek (RM 101.4) recorded the lowest catches (Appendix Table EB-3).

At no time during this period of sampling did a stream mouth site show any consistent catch per unit effort except for Lane Creek (RM 113.5) in late August and September. Lane Creek is a clear cold tributary that flowed straight into the Susitna River, until the last two weeks of August, when the creek mouth changed course and began flowing into a slough channel of the Susitna River. After this the catch per unit effort increased and stayed fairly consistent until the end of September (Appendix Table EB-3).

Small but consistent catches of juvenile burbot were recorded at the mouth of the Deshka River and the mouth of Alexander Creek during late August and September (Appendix Table EB-3). Juvenile burbot were occasionally found at six other locations from Cook Inlet to Devil Canyon during this study.

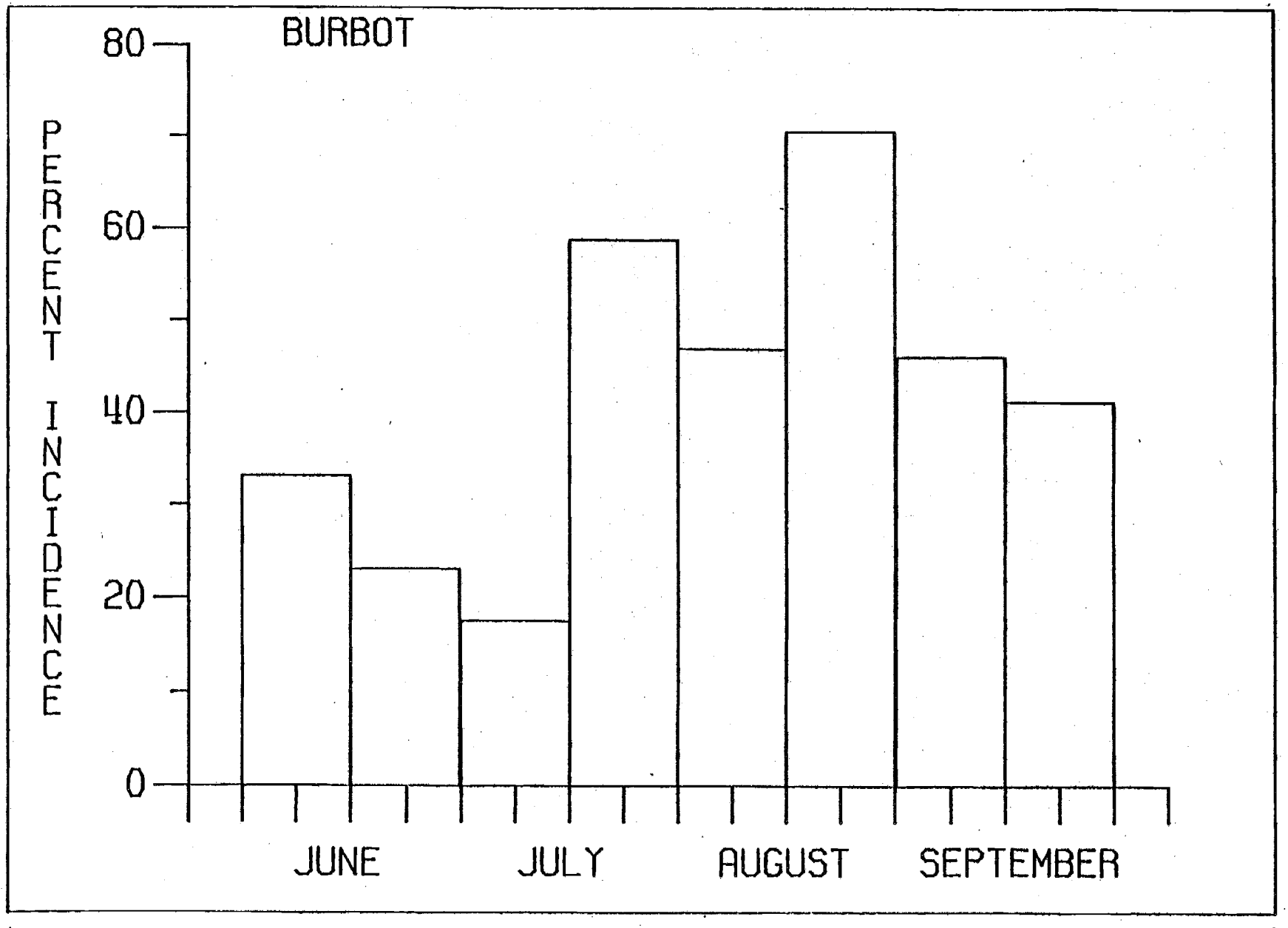

Figure E.3.3.2. Percent incidence of burbot captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Electrofishing surveys designed to locate adult salmon and whitefish and conducted during August, September and October of 1981, succeeded in locating burbot in mainstem and slough channels of the Susitna River from RM 43.5 to RM 100.0 (Appendix Table EB-3). Catch rates varied from 0.0 to 12.8 burbot per hour but as these surveys were not designed to reflect relative abundance of burbot and the results can only be used to further document the distribution.

3.3.4.2 Age, Length, and Sex Composition

Otoliths were removed and analyzed from 120 burbot captured in the Susitna River from Cook Inlet to Devil Canyon for age determination. Age classes IV, V and VIII made up the majority of burbot, comprising 14 percent, 22 percent and 12.5 percent respectively (Table E.3.3.3). Of the burbot used for age determination Age IV averaged 407 mm (range 303-520 mm), Age V averaged 439 mm (range 365-620 mm), and Age VIII averaged 559 mm (range 465-647 mm). The range of lengths for the age classes of burbot sampled on the lower Susitna River are similar to those found in studies conducted by Chen (1969) and Hewson (1955).

Figure E.3.3.3 illustrates the mean length and range of lengths for each age class of burbot caught on the lower Susitna River.

Length determination was made for a total of 457 burbot collected from Cook Inlet to Devil Canyon during the summer of 1981. Burbot 400-450 mm occurred most frequently in the catches. The mean length of burbot encountered was 428 mm and the range was from 55 mm to 900 mm (Figure E.3.3.4).

Table E.3.3.3. Burbot, age-length frequency composition on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	5	99	85-115				5	99	85-115
I	5	189	168-205	1	110	-	6	175	168-205
II	1	180					1	180	
III	6	333	248-400	-	-	-	6	333	238-400
IV	16	412	303-520	1	330	-	17	407	303-520
V	22	432	365-550	4	478	390-620	26	439	365-620
VI	10	487	381-600	4	479	386-575	14	485	381-575
VII	11	529	407-635	3	566	510-600	14	537	407-614
VIII	12	570	465-647	3	516	468-600	15	559	465-647
IX	3	635	556-680	-	-	-	3	635	556-668
X	3	554	456-650	-	-	-	3	554	456=650
XI	2	615	609-611	-	-	-	2	615	609-620
XII	5	685	512-815	-	-	-	5	685	512-815
XIII	2	745	590-900	-	-	-	2	745	590-900
XIV	1	804	-	-	-	-	1	804	-
TOTAL	104	-	-	16	-	-	120	-	-

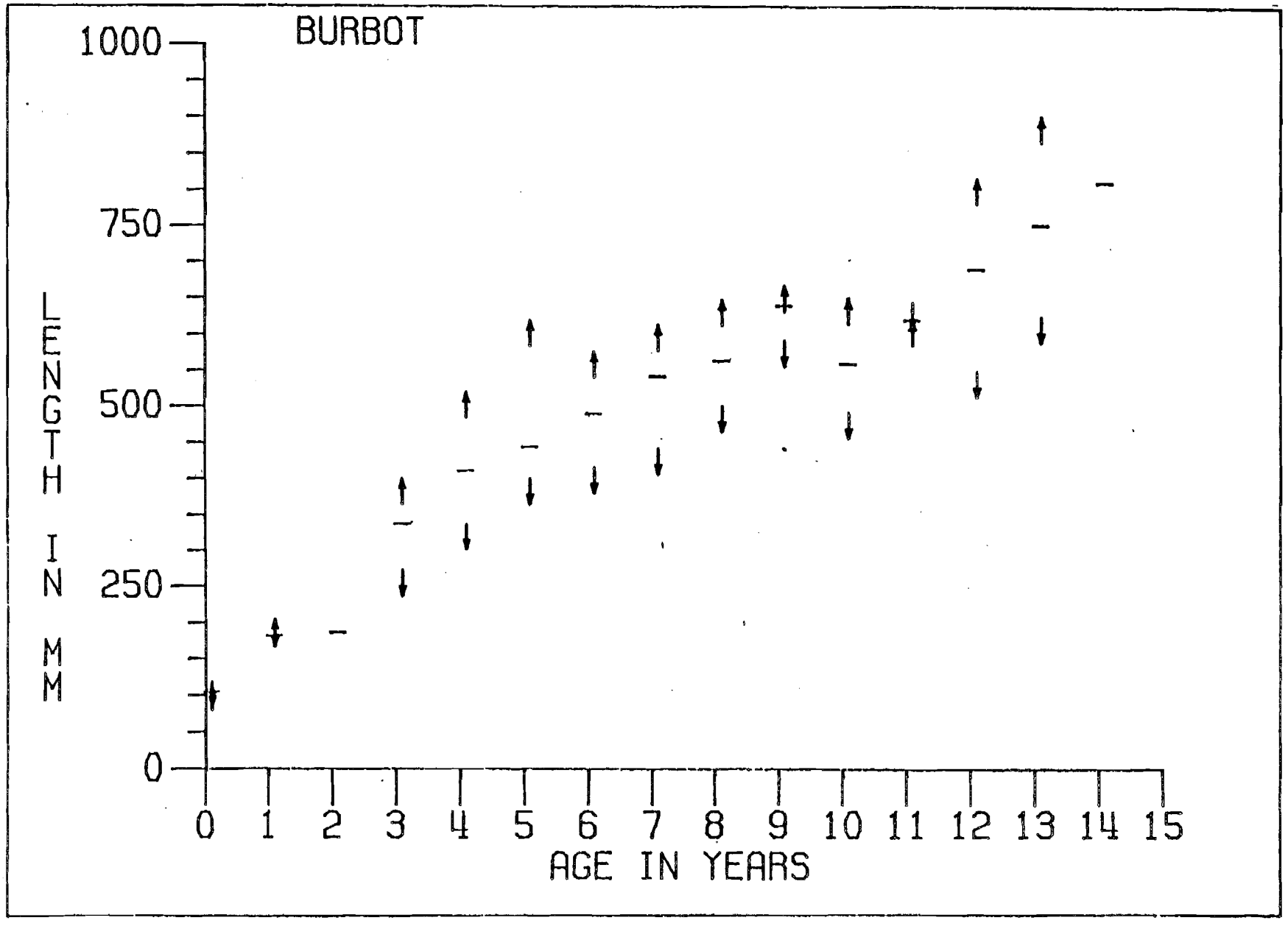

Figure E.3.3.3. Age and length relationship for burbot captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

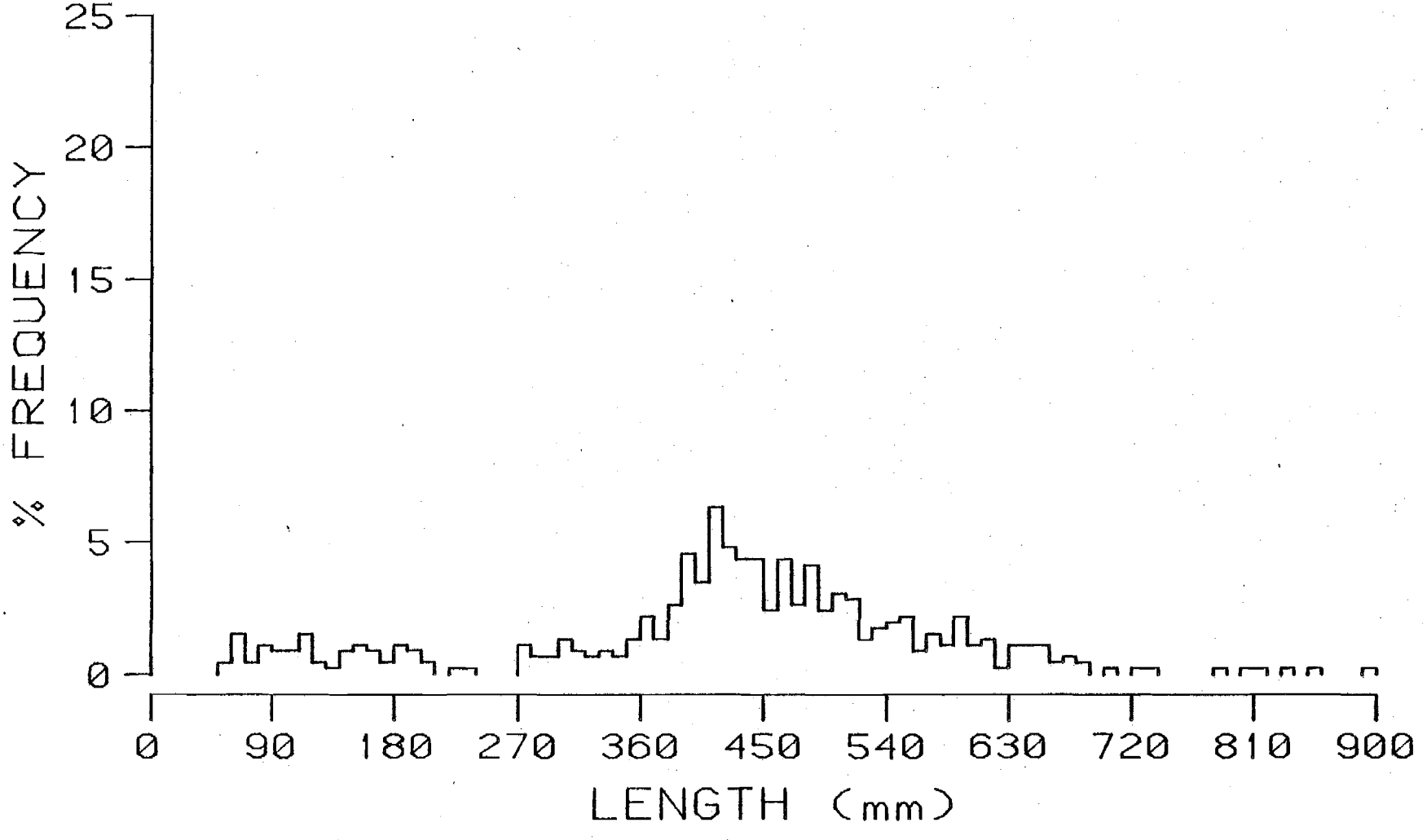

Figure E.3.3.4. Length frequency composition of burbot captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Not all burbot examined for age and sex composition contained mature sex organs. Of the 108 burbot examined, 48 percent were males and 52 percent were females. Males comprised 47 percent of the Age IV fish for which sex determination could be made, and 69 percent and 20 percent for the Age V and Age VIII fish, respectively (Table E.3.3.4).

3.2.4.3 Spawning

Burbot are known to spawn from mid December to early April. Female burbot collected in the Susitna River were observed with well developed eggs beginning in early September. Chen (1969) noticed in his study of burbot in the Interior of Alaska that gonads began to enlarge in August. On the lower Susitna River, both sexually ripe and unripe mature burbot were observed from June through September, indicating non-consecutive spawning for Susitna River burbot.

No observations of spawning burbot were made during the 1980-1981 season. However non spawners and spent burbot captured from November to May suggest that the lower Susitna River burbot may spawn in December and January. Cahn (1936) and Lindsey (1976) observed burbot migrating into shallow water and spawning under the ice. Alexander Creek and the Deshka River were the only study sites at which juvenile burbot were captured consistently.

Table E.3.3.4. Burbot, summary of sex determination data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.
0	Immature	Immature	5	-	-	0	Immature	Immature	5
I	Immature	Immature	5	Immature	Immature	1	Immature	Immature	6
II	Immature	Immature	1	-	-	0	Immature	Immature	1
III	4	2	6	-	-	0	4	2	6
IV	8	8	16	0	1	1	8	9	17
V	15	7	22	3	1	4	18	8	26
VI	5	5	10	2	2	4	7	7	14
VII	3	8	11	2	1	3	5	9	14
VIII	2	10	12	1	2	3	3	12	15
IX	1	2	3	-	-	0	1	2	3
X	1	2	3	-	-	0	1	2	3

Table E.3.3.4. (Continued) Burbot, summary of sex determination data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.	Male No.	Female No.	Total No.
XI	2	0	2	-	-	0	2	0	2
XII	2	3	5	-	-	0	2	3	5
XIII	1	1	2	-	-	0	1	1	2
XIV	0	1	1	-	-	0	0	1	1

3.3.4.4 Tagging and Recapture

Two hundred forty burbot were tagged with Floy anchor tags and sixty-three burbot were tagged with Disc Dangler tags. All burbot tagged were released in the area of their capture (Table E.3.3.5). No tagged burbot were recaptured this field season.

Table E.3.3.3. Burbot, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Susitna River Reach	Tagging Periods	Habitat Locations		Selected Fish Habitats		Totals
		Floy Tags	Dangler Tag	Floy Tag	Dangler Tag	
Cook Inlet to Talkeetna	6/1-15/81	4				4
	6/16-30/81	4				4
	7/1-15/81	6				6
	7/16-31/81	4				4
	8/1-15/81	20				20
	8/16-31/81	37				37
	9/1-15/81	27				27
	9/16-30/81	30	27	1		58
	10/1-15/81	18	18	10	10	56
	Subtotal	150	45	11	10	216
Talkeetna to Devil Canyon	6/1-15/81	5				5
	6/16-30/81	1				1
	7/1-15/81	6				6
	7/16-31/81	8				8
	8/1-15/81	16				16
	8/16-31/81	17				17
	9/1-15/81	8				8
	9/16-30/81	15	6			21
	10/1-15/81	0		3	2	5
	Subtotal	76	6	3	2	87
TOTALS		226	51	14	12	303

3.4 ROUND WHITEFISH

3.4.1 Abstract

Round whitefish, Prospium cylindraceum Pallus were observed throughout the study area from Anderson Creek (R.M. 23.8) to Portage Creek (R.M. 148.8). The gillnet catch per unit effort was generally highest in June and September and the most productive sites were Anderson Creek mouth (R.M. 23.8), Slough 10 (R.M. 133.8), Slough 11 (R.M. 135.3), and Portage Creek mouth (R.M. 148.8). The most prevalent age classes captured were Age III, Age IV, and Age V, with Age IV the most common. Age IV fish ranged from 214 to 325 mm in fork length with a mean of 261 mm. Approximately 80 percent of the 318 fish captured during the study fell in the range of 135 to 365 mm. Males constituted 56 percent and females 44 percent of the 45 round whitefish which were examined to determine their sex. A total of 137 fish were tagged to determine movement. One fish tagged on September 9, 1981 had moved 20.5 miles upstream in 23 days before recapture.

3.4.2 Introduction

Round whitefish, Prosopium cylindraceum Pallus, are distributed across all of Arctic and Interior Alaska. In Southcentral Alaska, their range includes the Copper, the Kenai, and the Susitna rivers. This species also occurs in the large rivers draining into Southeast Alaska from British Columbia (McLean and Delaney, 1978). Round whitefish are abundant in clearwater streams with

gravel-cobble substrate but are also found in large glacial rivers and lakes. Round whitefish prefer freshwater and are not found in an estuarine environment.

Round whitefish are identified by their round cigar-shaped body and small mouth. Adults may reach a length of 500mm and weight to 8.9 kg (McPhail and Lindsey, 1970). There are no obvious external differences between the sexes. Spawning occurs in late September through October over gravel substrate in the shallows of rivers and the inshore areas of lakes (Furniss, 1974) . This whitefish matures and spawns at age IV to VII. For Alaskan round whitefish, consecutive spawning appears to be the rule even in Arctic populations (McCart et al., 1972). Upstream migrations associated with spawning were observed by McCart and are probably characteristic. Alaskan subsistence fishermen harvest round whitefish with gill nets for human consumption and as dog food. Round whitefish also support limited hook and line and spear sport fisheries.

3.4.3 Methods

Round whitefish were collected during the winter and summer field seasons of 1980-81 with variable mesh gillnets (four 7.5 ft. panels of 1 to 2-1/2 inch stretch mesh), fishwheels and boat mounted electrofishing units.

Round whitefish were taken in the Susitna River from Anderson Creek (R.M. 23.8) upstream to R.M. 148.8 at Portage Creek.

All fish captured were measured for fork length in millimeters (mm). Where survival from collection and handling was anticipated, the fish were tagged

with Floy anchor tags and released. Age determinations were made using scale analysis. Sex was determined by necropsy and by abdominal manipulation to obtain the discharge of eggs or milt.

3.4.4 Results and Discussion

3.4.4.1 Distribution and Relative Abundance

A total of 318 round whitefish were caught during the course of this study. Round whitefish were captured at only four habitat locations during winter studies from November, 1980 to May, 1981, all of which were located downstream of Talkeetna. Small numbers of round whitefish were taken in gillnets set at the mouth of Sunshine Creek in March and again in gillnets set at the mouths of the Deshka and Kashwitna rivers and Cache Creek slough during May. The fish were all captured while moving upstream as indicated by the direction from which they hit the nets. The presence of round whitefish near the mouths of tributary streams in March and May after no catches in these same locations during November through February, indicates a general pattern of movement into these areas and on into the various tributaries.

Round whitefish were collected at 30.0 percent of the habitat location sites sampled from Cook Inlet to Talkeetna during the first two weeks of June (Fig. E.3.4.1). The mouth of Sunshine Creek (R.M. 85.7) recorded the highest catch rate of all gear types; 5.5 fish per gill net night (Appendix Table EB-4). After June 15 the incidence of round whitefish in habitat location catches downstream of Talkeetna dropped to between 0.0 and 11.1 percent of location

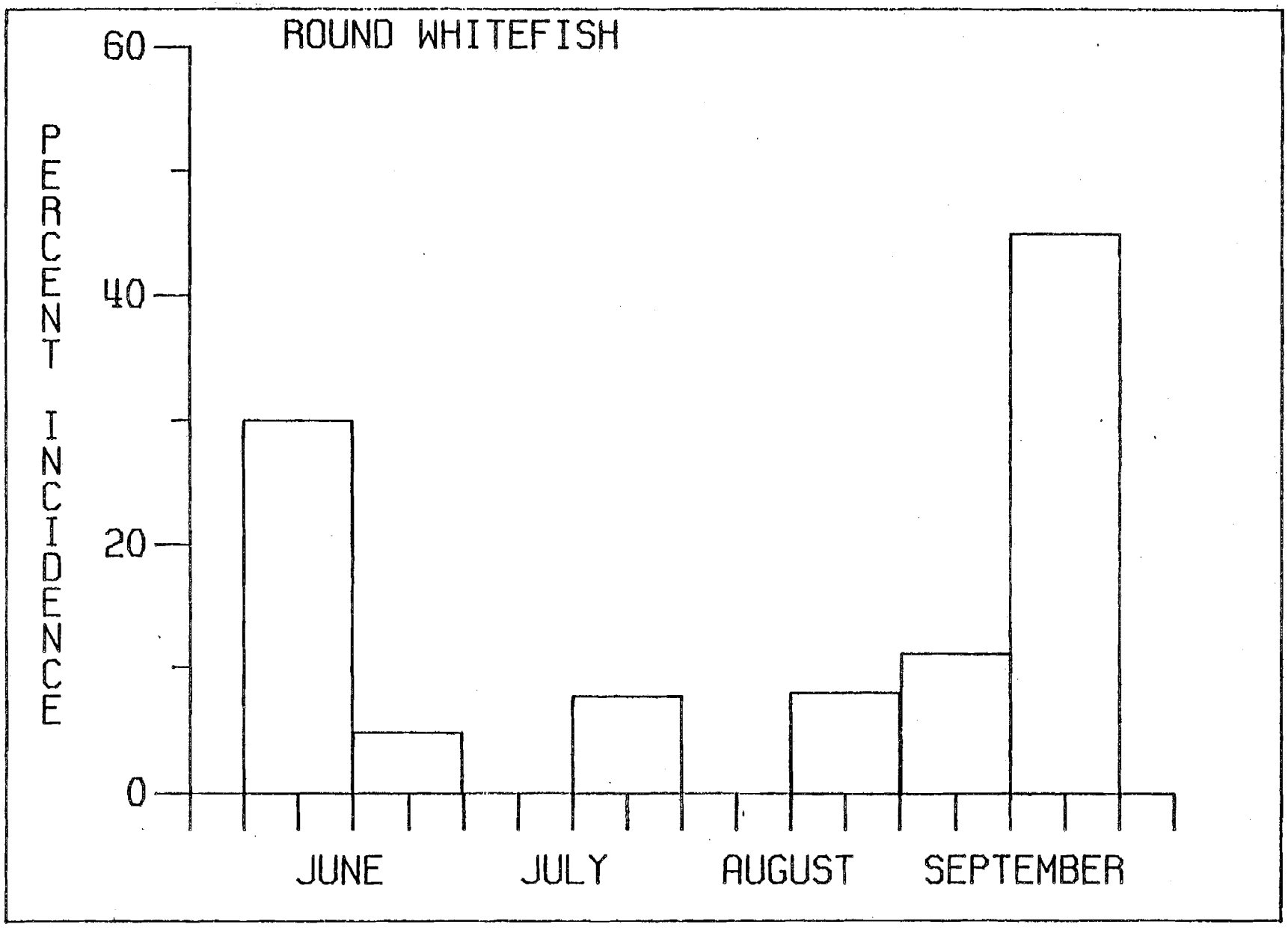

Figure E.3.4.1. Percent incidence of round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

sites sampled until the last two weeks of September when catch incidence rose to 45 percent of all sites sampled. During the last two weeks of September round whitefish were collected at three mainstem sites and six tributary mouth sites downstream of Talkeetna.

Round whitefish were more consistent in sampling gear catches above Talkeetna during June through September. The incidence of round whitefish catches ranged from 17.6 percent to 44.4 percent during June and July then dropped to 0.0 percent in the first two weeks of August (Fig. E.3.4.2). The incidence of round whitefish in catches remained below 10.0 percent of sites sampled until the last two weeks of September when 35.3 percent of sites sampled recorded catches of round whitefish. The highest and most consistent catch rates were recorded at sloughs 6A (RM 112.3), 8A (RM 125.3), and 10 (RM 133.8), and the mouths of both Indian River (RM 138.6) and Portage Creek (RM 148.8) (Appendix Table EB-4).

3.4.4.2 Age, Length and Sex Composition

Forty five Susitna River round whitefish from fishwheel, gillnet and electrofishing catches made from Cook Inlet to Devil Canyon were aged using scale analysis. Table E.3.4.1 illustrates that round whitefish analyzed for age composition ranged from age 0+ to age VIII with age IV being encountered most often.

Figure E.3.4.3 illustrates the average length and range of lengths for each age class of Susitna River round whitefish. The fork lengths of age 0+ round whitefish averaged 89 mm (range 73-100 mm), age I averaged 139 mm (range

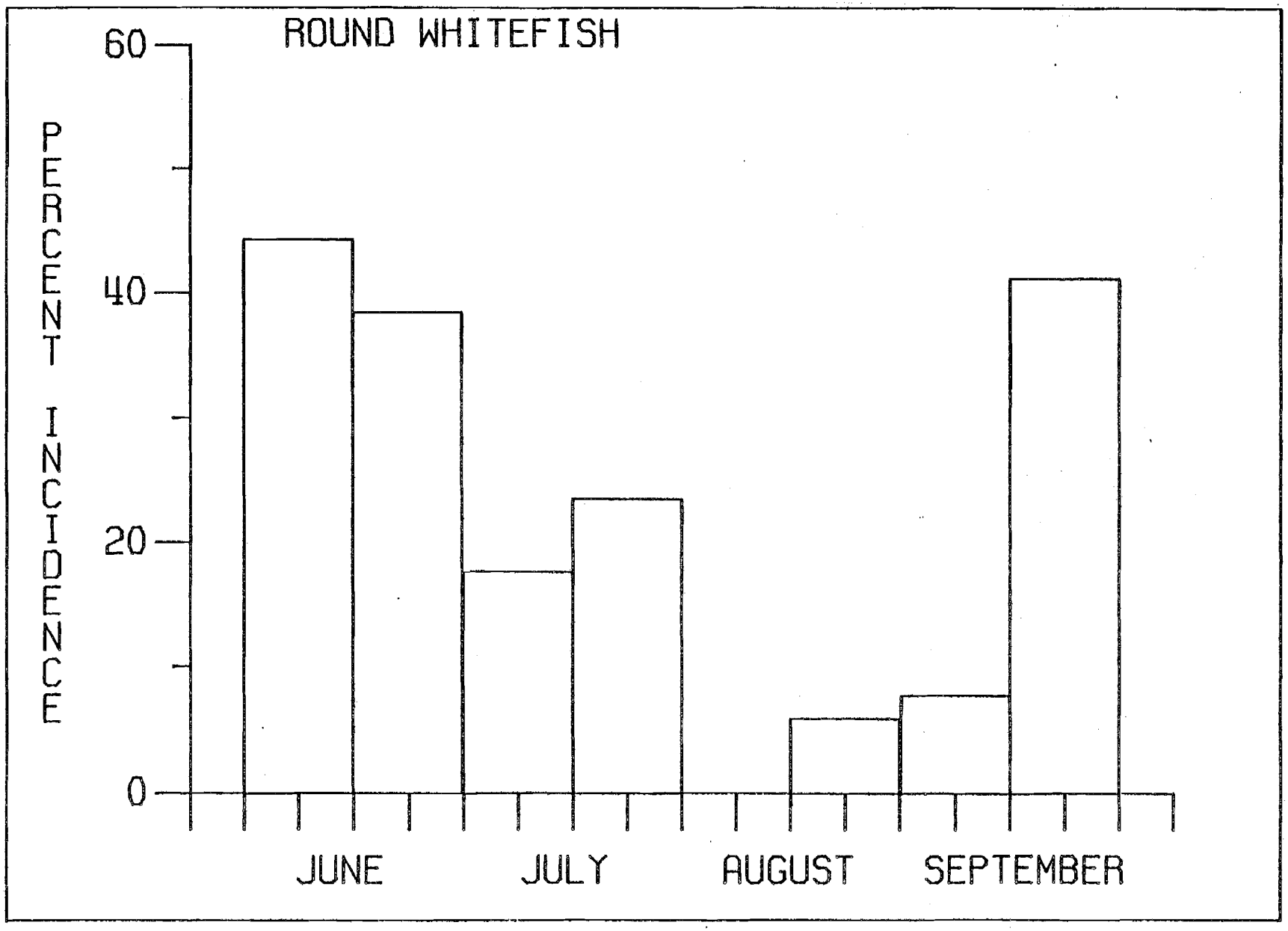

Figure E.3.4.2. Percent incidence of round whitefish captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Table E.3.4.1. Round whitefish age - length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	4	87	73-100	-	-	-	4	87	73-100
I	-	-	-	2	139	130-148	2	139	130-148
II	3	194	185-205	4	170	126-220	7	181	126-220
III	9	229	193-250	10	210	180-245	19	219	180-250
IV	7	281	250-325	27	256	214-320	34	261	214-325
V	8	352	334-360	7	270	251-283	15	314	251-360
VI	1	342	342	12	330	317-365	13	331	317-365
VII	-	-	-	6	354	334-367	6	354	334-367
VIII	-	-	-	1	318	318	1	318	318
IX	-	-	-	-	-	-	-	-	-
X	-	-	-	-	-	-	-	-	-
TOTALS	32	254	73-360	69	265	126-367	101	261	73-367

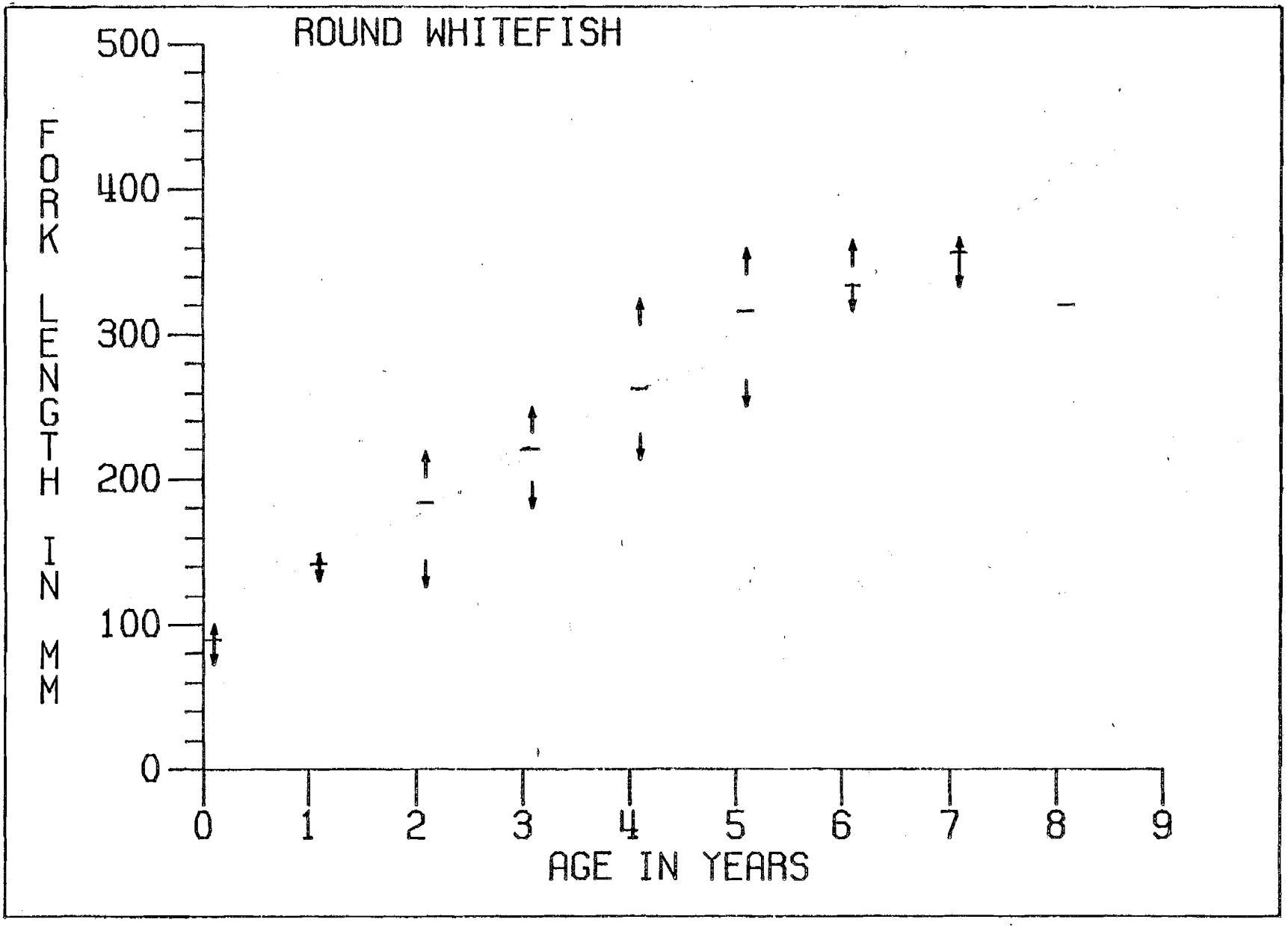

Figure E.3.4.3. Age and length relationship for round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

130-148), Age II averaged 219 mm (range 180-250 mm), age IV averaged 261 mm (range 214-325 mm), age V averaged 314 mm (range 251-360 mm), age VI averaged 331 mm (range 317-365 mm), age VII averaged 354 mm (range 334-367 mm) and one fish of age VIII was 318 mm.

In addition to those fish used for age composition analysis, all round whitefish collected were measured for fork length in millimeters. Figure E.3.4.4 illustrates the length frequency distribution for all round whitefish collected from June to October. Round whitefish between 242 and 250 mm fork length occurred most often followed by those from 270 to 278 mm.

The mean fork length of all round whitefish captured from Cook Inlet to Talkeetna during June through September 1981, was 243 mm with the overall range from 47 to 459. Of the 45 round whitefish examined for sex composition 25 (55.6 percent) were male and 20 (44.4 percent) were female (Table E.3.4.2), for a male to female ratio of 1.25:1.

3.4.4.3 Tagging and Recapture

One hundred thirty seven round whitefish, captured from Anderson Creek (R.M. 23.8) to Portage Creek (R.M. 148.8) were tagged with Floy anchor tags during May through October 1981 and subsequently released in the area of their capture (Table E.3.4.3). Only one tagged fish was recaptured in 1981. This fish was tagged and released on September 9 at the Sunshine Station fishwheel (R.M. 79) and recaptured on October 2 at R.M. 99.5, one mile north of the Chulitna River confluence.

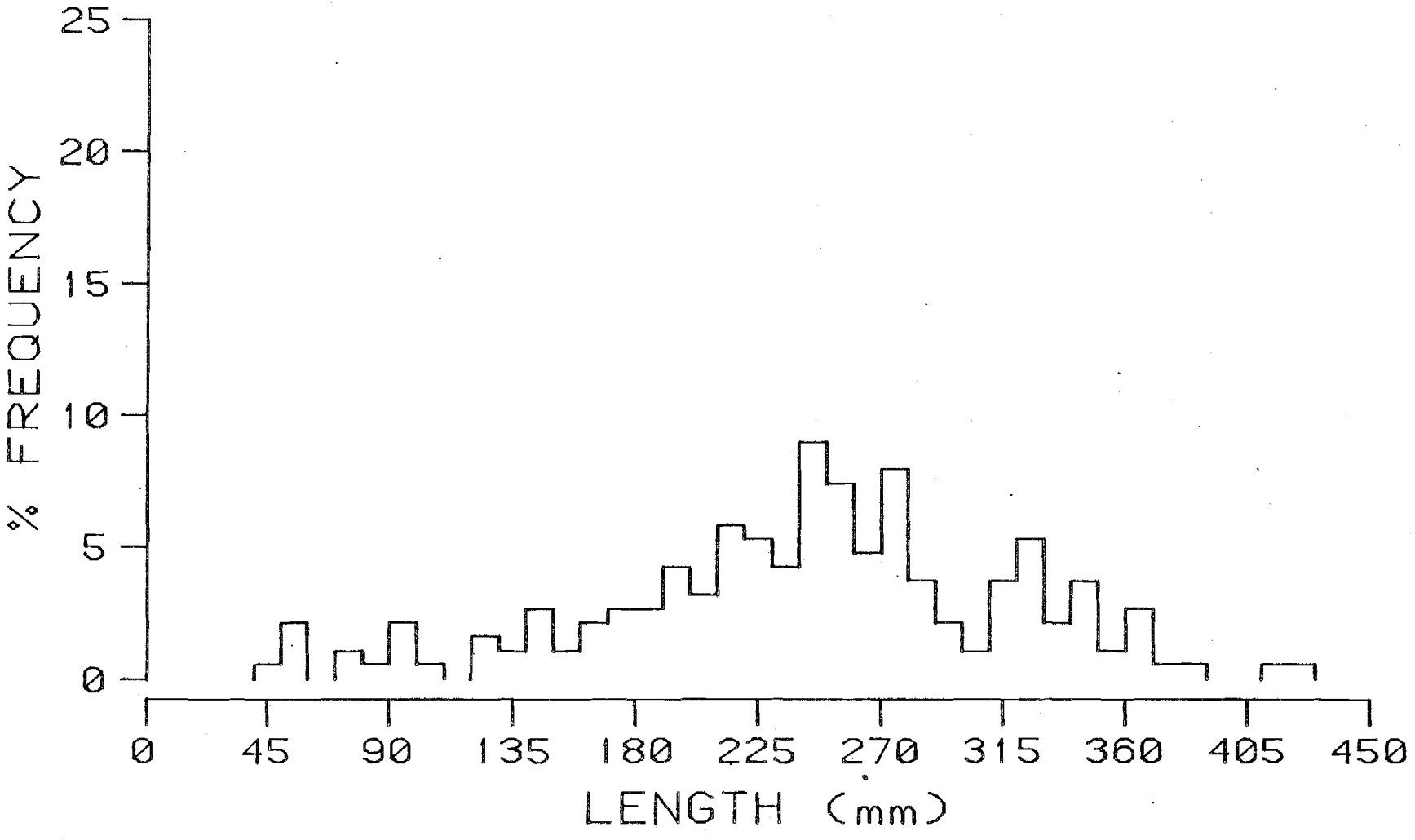

Figure E.3.4.4. Length frequency composition of round whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.4.2. Round whitefish, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	1 (100.0)	0 (0.0)	1	1 (50.0)	1 (50.0)	2	2 (66.7)	1 (33.3)	3
III	3 (75.0)	1 (25.0)	4	2 (50.0)	2 (50.0)	4	5 (62.5)	3 (37.5)	8
IV	0 (0.0)	1 (100.0)	1	10 (62.5)	6 (37.5)	16	10 (58.8)	7 (41.2)	17
V	1 (25.0)	3 (75.0)	4	4 (100.0)	0 (0.0)	4	5 (62.5)	3 (37.5)	8
VI	1 (100.0)	0 (0.0)	1	1 (25.0)	3 (75.0)	4	2 (40.0)	3 (60.0)	5
VII	-	-	-	1 (25.0)	3 (75.0)	4	1 (25.0)	3 (75.0)	4
TOTAL	6 (54.5)	5 (45.5)	11	19 (55.9)	15 (44.1)	34	25 (55.6)	20 (44.4)	45

Table E.3.4.3. Round whitefish, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, May to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
		Sunshine			
Cook Inlet to Talkeetna	5/1-5/15	-	6	-	6
	6/1-6/15	-	4	-	4
	6/16-6/30	-	1	-	1
	7/1-7/15	3	3	-	6
	8/16-8/31	5	1	-	6
	9/1-9/15	1	-	-	1
	9/16-9/30	-	5	12	17
	10/1-10/15	-	6	42	48
	Subtotal	9	26	54	89
		Talkeetna			
Talkeetna to Devil Canyon	6/1-6/15	-	7	-	7
	6/16-6/30	-	3	-	3
	7/16-7/31	-	1	-	1
	9/1-9/15	10	1	-	11
	9/16-9/30	-	15	-	15
	10/1-10/15	-	-	11	11
	Subtotal	10	27	11	48
TOTAL		19	53	65	137

3.5 HUMPBACK WHITEFISHES

3.5.1 Abstract

Three hundred and forty-four humpback whitefish, Coregonus species, were collected on the lower Susitna River from February through September, 1981. Humpback shitefish were collected at 24 habitat locations between Alexander Creek (R.M. 10.1) and Portage Creek (R.M. 148.8). Peak catches of humpback whitefish were made in early June and late September. The largest catch per unit efforts for humpback whitefish were recorded at the mouth of Anderson Creek (R.M. 23.8), the mouth of Portage Creek (R.M. 148.8) and the mainstem slough 2.5 miles upriver from the Yentna River (R.M. 31.0). Generally humpback whitefish were more abundant in the Cook Inlet to Talkeetna reach. The mean fork length for all fish samples was 284 mm. Age IV and Age VI humpbacks were the most abundant age classes encountered. Fifty-eight percent of the 67 humpback whitefish that were examined for sex determination were males and forty-two percent were females. Numbered Floy anchor tags were implanted into 181 humpback whitefish to monitor humpback whitefish movements in the lower Susitna River.

3.5.2 Introduction

In Alaska there are three closely related species of whitefish in the genus Coregonus of which two are often confused with (or often misidentified as) the humpback whitefish Coregonus pidschian. The three species, humpback whitefish Coregonus pidschian, Alaska whitefish Coregonus nelsoni, and the lake white-

fish Coregonus clupeaformis have been distinguished by Alt (1979) using modal gill raker counts. These whitefish are similar in appearance, have no consistent morphological differences, and have distributions which overlap. Therefore, for the purposes of this report, we have combined the data which we collected on these species and grouped it under the general heading of humpback whitefish.

Adult humpback whitefishes can be distinguished by a pronounced hump behind the head and gill rakers that are longer than 20 percent of the interorbital width.

Information on ranges of the three Alaskan species within the Coregonus species complex are somewhat confusing because of problems with species identification. Lake whitefish are reported to be widely distributed in fresh waters throughout the northern half and the northwestern regions of North America (Scott and Crossman 1973). Alaska whitefish have been documented in the Yukon River and its tributary drainages above the village of Nulato, Lake Minchumina, and the Unalakleet and Wulik Rivers. The presently known range of the humpback whitefish in Alaska is restricted to rivers which empty into the Bering, Chukchi, and Beaufort seas (Morrow 1980). Possible occurrence of Alaska whitefish and lake whitefish have been reported in the Susitna River drainage (McPhail and Lindsey 1970; Williams 1968).

Life history information gathered on the Alaska whitefish, C. nelsoni, from studies on the Chatanika and Tanana Rivers indicate that they are largely stream inhabitants and they undertake lengthy upstream and downstream migrations. The fish begin to move upstream in the spring and this movement

intensifies throughout the summer months as increasing numbers of fish become sexually mature. From September through October, Alaska whitefish congregate to spawn in clear, moderately swift streams with moderately clean, gravel bottoms (Kepler 1973). After spawning, the majority of the fish move downstream and apparently disperse widely throughout the system over the winter months. Townsend and Kepler (1974) found that Alaska whitefish generally appear to be nonconsecutive spawners. Alaska whitefish reach sexual maturity at three to five years of age (Alt 1971).

Lake whitefish, C. clupeaformis, are found primarily in lakes. Stream dwelling populations are somewhat less common. However, life history information does indicate that they do spawn in rivers and creeks (Morrow 1980). Spawning sites documented by Morrow had gravel substrates in water which is 1 to 3 meters deep. Adult lake whitefish breed annually in the southern part of their range, however those in arctic and subarctic regions may only spawn every second or third year (Kennedy 1953). Spawning generally occurs between October and December when water temperatures are less than or equal to 6°C. Migration studies conducted on lake populations of lake whitefish showed that they undertake limited seasonal movements between deep and shallow water (Budd 1957).

The humpback whitefish, C. pidschian, is apparently the only truly anadromous form of the humpback whitefishes. Wintering fish have been caught several miles offshore from the mouths of several western Alaska rivers as well as in Kotzebue and Norton Sound (Alt 1979). The migratory habits of humpback whitefish populations in different systems seems to vary substantially. Some populations have extensive upstream spawning migrations, as evidenced by

humpback whitefish movements of over 1,280 km in the Kuskokwim River, and yet others do not appear to enter salt water or travel very far upstream at all (Berg 1948). Spawning migrations generally begin in June, however spawning does not actually occur until October or early November. Humpback whitefish reach sexual maturity at four to six years of age.

The primary utilization of the humpback whitefishes in Alaska are for subsistence. A small spearfishing sport fishery for humpback whitefishes has also developed on the Chatanika and the Slana River. Some attempts have been made to harvest whitefish commercially in some Copper River drainage lakes however with limited success.

3.5.3 Methods

Humpback whitefish were taken in the Susitna River system from Fish Creek (R.M. 7.0), a drainage of Flathorn Lake, upstream to Portage Creek (R.M. 148.8), below Devil Canyon. The months of collection for this species were May to September 1981.

A variety of gear types proved effective for capturing humpback whitefish. Set and drift gill nets (variable mesh - 1.0 to 2.5 inch stretch mesh), fishwheels, hook and line, and boat-mounted electrofishing units successfully captured the adult fish. A few juveniles were also obtained for sampling utilizing beach seines and minnow traps.

Fork lengths of all fish captured were recorded, and scales were taken for subsequent age determination. Uninjured and vigorous fish were tagged with Floy anchor tags and released. Mortalities were necropsied to determine sex; live fish were manipulated to release eggs or milt to aid in sex assessment.

3.5.4 Results and Discussion

3.5.4.1 Distribution and Relative Abundance

Humpback whitefish were first observed in an under-ice gillnet at R.M. 74.4, 2.6 miles below the mouth of Montana Creek, on February 12th. They were also caught at the mouth of Rolly Creek in March. In May, a few humpback whitefish were captured in gill nets at the mouth of the Deshka River (R.M. 40.6). The largest individual catch of humpback whitefishes was made on June 4 and 5 at the mouth of Anderson Creek (R.M. 23.8) utilizing a variable mesh set gill net. During June, relatively large numbers of humpback whitefish were also gill netted at Sunshine Creek (R.M. 85.7), Slough 6A (R.M. 112.3), and Portage Creek (R.M. 148.8). See Appendix Table EB-5.

Humpback whitefish were caught at less than 10 percent of the 44 habitat locations on the Susitna River between Cook Inlet and Devil Canyon between mid-July and late August. Juvenile humpback whitefish were captured with minnow traps at Alexander Ceek (R.M. 10.1), Kroto Slough (R.M. 30.1), Deshka River (R.M. 40.6) and Whiskers Creek (R.M. 101.4) in late August and early September. Humpback whitefish were gill netted at 19 percent of the habitat locations below Devil Canyon between September 1 to 15 and 24 percent

thereafter. However, they were more abundant below Talkeetna at Mainstem Slough (R.M. 33.5), Deshka River (R.M. 40.6) and Sheep Creek (R.M. 66.1). One hundred and fifty four humpback whitefish were also caught at the Sunshine Station fishwheel in September (Table E.3.5.1). The percentage incidence of humpback whitefish at habitat locations on the lower and middle reaches of the Susitna River is presented for each bi-monthly sampling period in Figures E.3.5.1 and E.3.5.2.

3.5.4.2 Age, Length and Sex Composition

The ages of 67 Susitna River humpback whitefish were confirmed via scale analysis. The fish ranged in age from age II to age VII. Age IV fish made up 31.3 percent of the aged catch and this was the predominant age class encountered. Age III, age V, and age VI fish each composed 19.4 percent of the aged fish respectively.

Figures E.3.5.3 illustrate the average length and range of lengths for each age class of humpback whitefish found on the Susitna River.

Fork lengths were measured to the nearest millimeter on all humpback whitefish that were captured. Among the 344 fish that were sampled, the lengths ranged from 38 mm to 489 mm with a mean length of 284 mm (Figure E.3.5.4). The fork lengths of age III humpback whitefish averaged 237 mm (range 178-285 mm), age IV averaged 295 mm (range 225-350 mm), age V averaged 326 mm (range 258-370 mm), and age VI averaged 346 mm (range 308-400 mm) (Table E.3.5.2).

Table E.3.5.1. Humpback whitefish fishwheel catches on the Susitna River Sunshine Station (RM 79.0), August to September, 1981.

Capture Dates	Humpback Whitefish Catch Per Day
8/26	3
8/27	13
--	--
9/5	9
9/6	6
9/7	3
9/8	4
9/9	4
9/10	12
9/11	22
9/12	1
9/13	14
9/14	13
9/15	19
9/16	21
--	--
9/18	5
--	--
9/20	11
9/21	5
9/22	2
--	--
9/24	3
Total	170

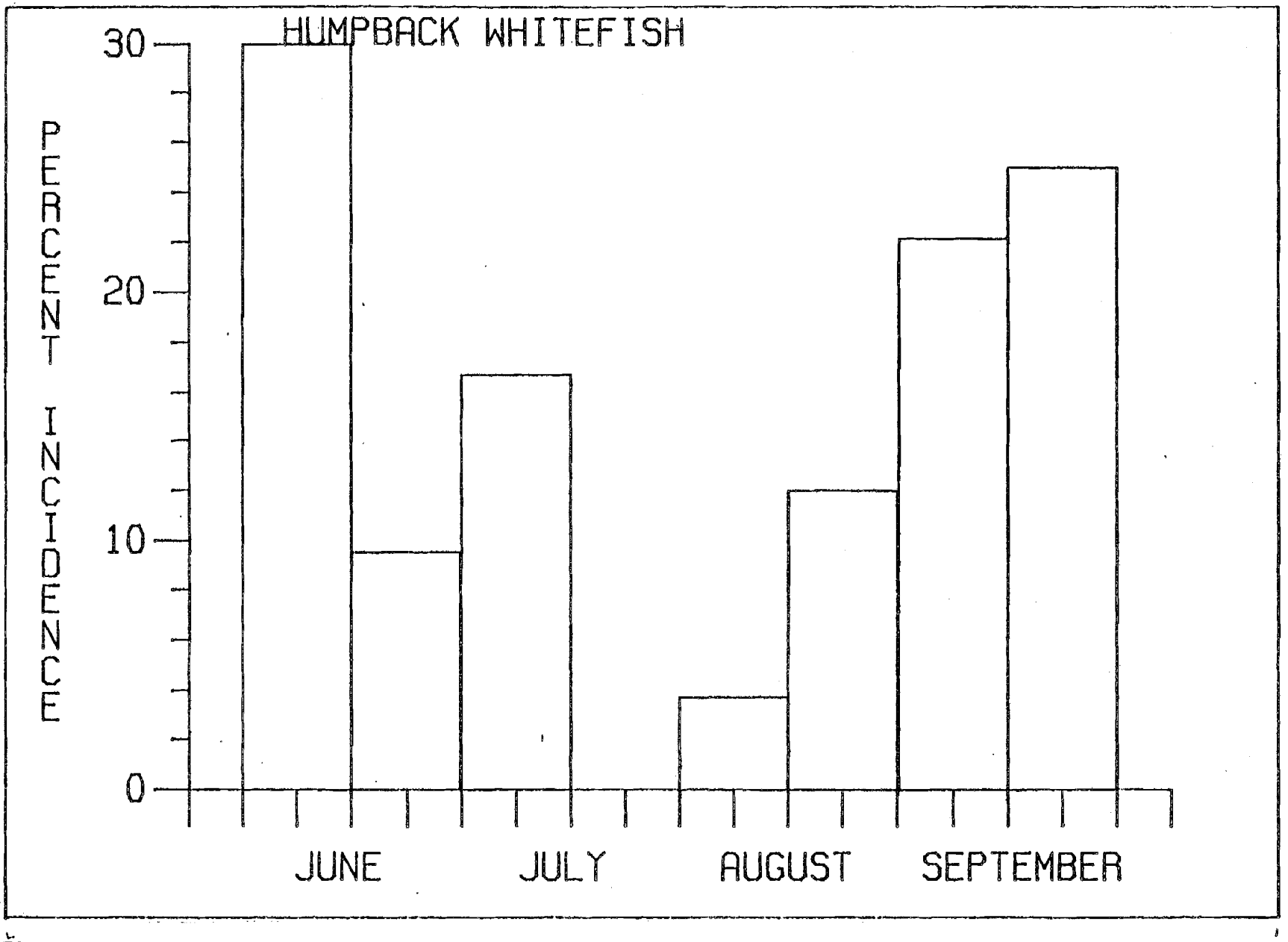

Figure E.3.5.1. Percent incidence of humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

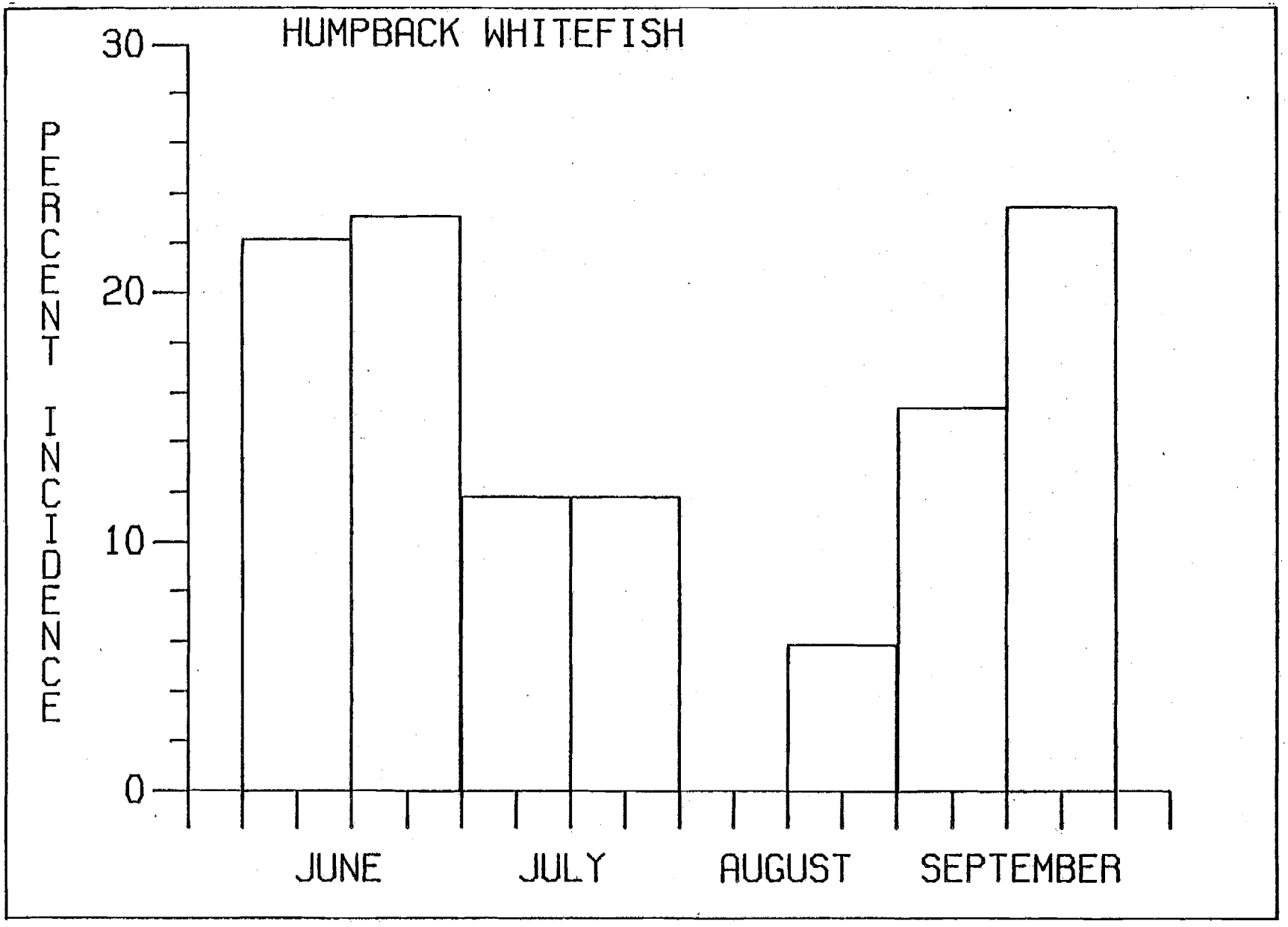

Figure E.3.5.2. Percent incidence of humpback whitefish captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

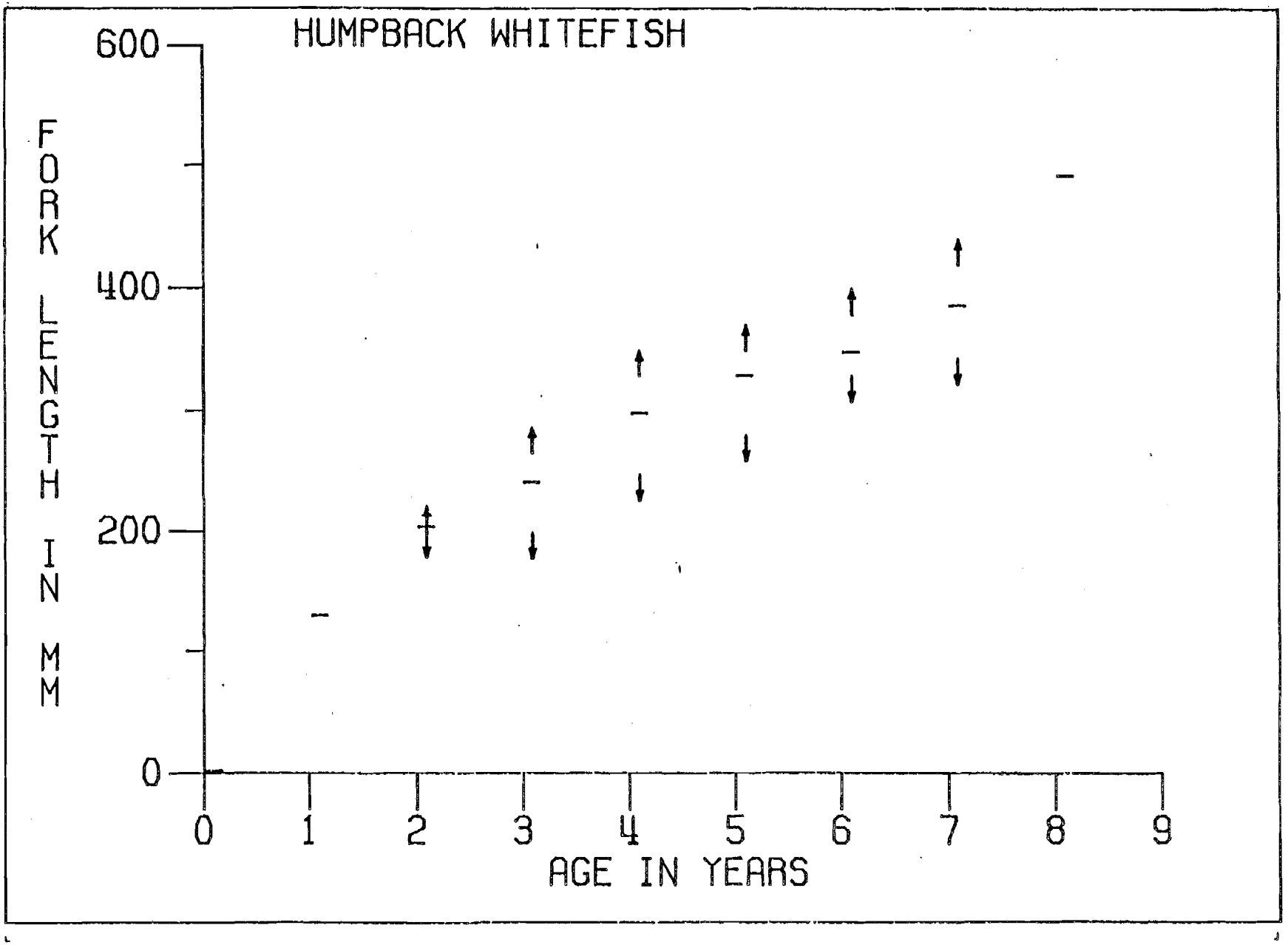

Figure E.3.5.3. Age and length relationship for humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

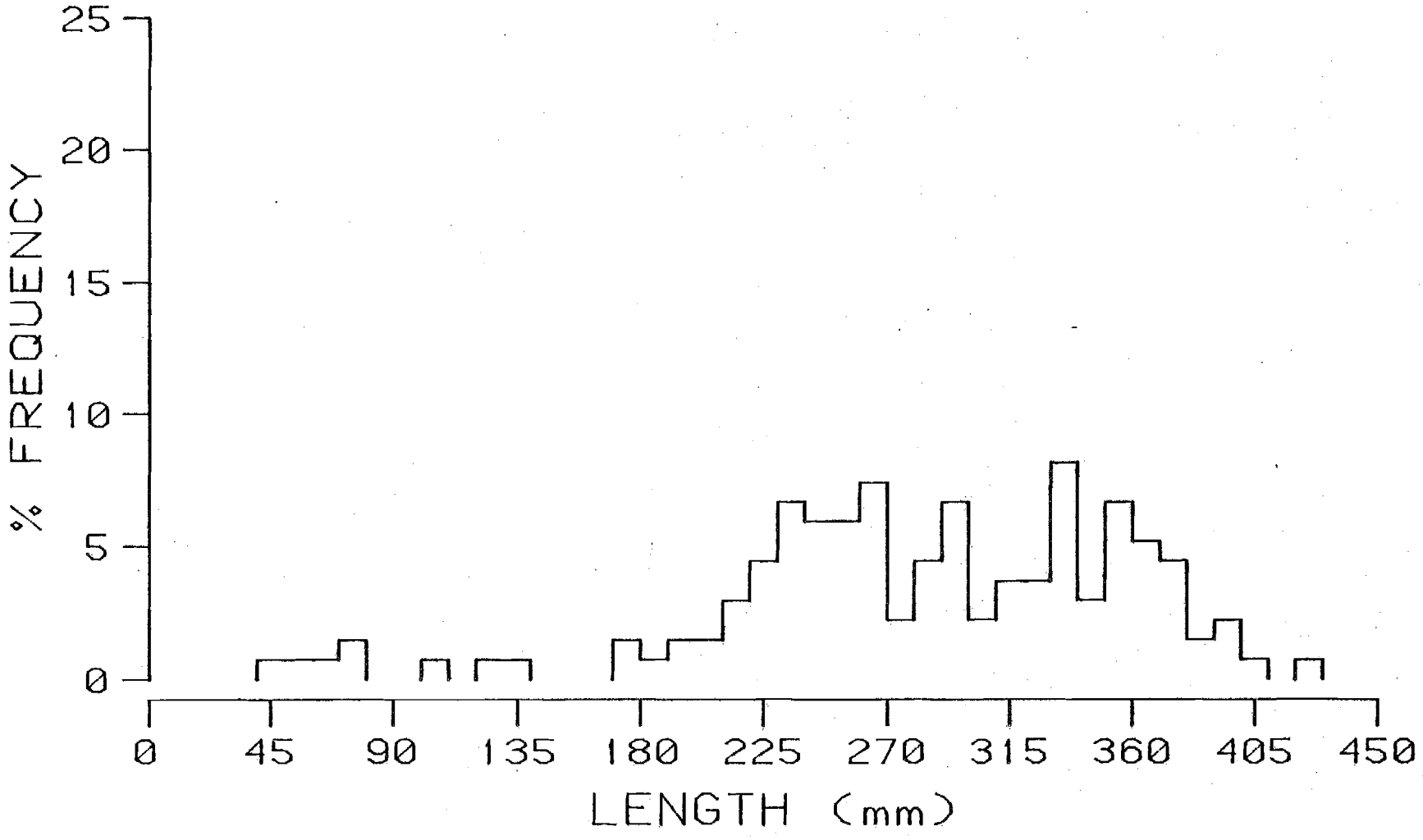

Figure E.3.5.4. Length frequency composition of humpback whitefish captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.5.2. Humpback whitefish, age - length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	-	-	-	-	-	-	-	-	-
I	1	127	127	-	-	-	1	127	127
II	4	201	179-220	-	-	-	4	201	179-220
III	20	241	202-285	4	218	178-242	24	237	178-285
IV	22	301	253-350	8	280	259-314	30	295	225-350
V	26	328	267-370	9	319	258-357	35	326	258-370
VI	34	347	308-400	2	327	320-335	36	346	308-400
VII	18	384	322-441	-	-	-	18	384	322-441
VIII	1	489	489	-	-	-	1	489	489
TOTAL	126	318	127-489	23	289	178-335	149	314	127-489

Of the 67 humpback whitefish that were examined to determine sex, 39 (58%) were males and 28 (42%) were females and the male/female sex ratio was 1.4:1. Among the most abundant age classes, males comprised 54 percent of age III, 67 percent of age IV, 62 percent of age VI (Table E.3.5.3). Age VII and VIII fish had the highest percentage of females.

3.5.4.3 Spawning

Large gill net catches were made on the Susitna at Anderson Creek (R.M. 23.8), Sunshine Creek (R.M. 85.7), Slough 6A (R.M. 112.3), and Portage Creek (R.M. 148.8) between June 1 and June 30th. Examinations of necropsied fish indicated they were sexually mature but not ready to spawn. Between August 26th and September 14th, 170 humpback whitefish were caught at the Sunshine fishwheel (R.M. 79). Inspections of dissected fish caught from mid September to early October showed well developed gonads, but again the fish were not yet ripe. No humpback whitefish were caught or observed after October 7th.

No evidence of humpback whitefish spawning was collected at any sampling location between Cook Inlet and Devil Canyon during the 1981 season. Consequently, we can only speculate that humpback whitefish in the Susitna River spawn some time after October 7th.

3.5.4.4 Tagging and Recapture

Tagging of humpback whitefish was conducted to observe seasonal movements and distribution in the Susitna River system. One hundred eighty nine humpback whitefish from Cook Inlet to Devil Canyon were tagged with numbered Floy

Table E.3.5.3. Humpback whitefish, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	2 (100.0)	0 (0.0)	2	-	-	-	2 (100.0)	0 (0.0)	2
III	6 (50.0)	6 (50.0)	12	1 (100.0)	0 (0.0)	1	7 (53.8)	6 (46.2)	13
IV	12 (92.3)	1 (7.7)	13	2 (25.0)	6 (75.0)	8	14 (66.7)	7 (33.3)	21
V	5 (62.5)	3 (37.5)	8	3 (60.0)	2 (40.0)	5	8 (61.5)	5 (38.5)	13
VI	7 (58.3)	5 (41.7)	12	1 (100.0)	0 (0.0)	1	8 (61.5)	5 (38.5)	13
VII	0 (0.0)	4 (100.0)	4	-	-	-	0 (0.0)	4 (100.0)	4
VIII	0 (0.0)	1 (100.0)	1	-	-	-	0 (0.0)	1 (100.0)	1
TOTALS	32 (61.5)	20 38.5)	52	7 (46.7)	8 (53.3)	15	39 (58.2)	28 (41.8)	67

anchor tags. The tagged fish were caught primarily by fishwheel and electroshocking, with the majority of specimens taken in the reaches of the river below Talkeetna (Table E.3.5.4).

The majority of humpback whitefish tagging was done in September and October with the aid of a boat-mounted electrofishing unit. Only one tagged fish was recaptured. This fish was tagged at the Sunshine fishwheel (R.M. 78.6) in late September, and was recaptured with an electroshocker three weeks later on the opposite side of the river from the point of initial capture.

Table E.3.5.4. Humpback whitefish, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
		Sunshine			
Cook Inlet to Talkeetna	5/1-5/15	-	9	2	11
	6/1-6/15	-	4	-	4
	6/16-6/30	-	1	-	1
	7/1-7/15	-	-	7	7
	8/16-8/31	13	1	-	14
	9/1-9/15	81	2	-	83
	9/16-9/30	41[a]	9	2	52
	10/1-10/15	-	-	2	2
	Subtotal	135	26	13	174
		Talkeetna			
Talkeetna to Devil Canyon	6/1-6/15	-	2	-	2
	9/1-9/15	10	-	-	10
	9/16-9/30	-	3	-	3
	Subtotal	10	5	0	15
	TOTAL	145	31	13	189

[a] One recapture. See discussion in text.

3.6 BERING CISCO

3.6.1 Abstract

Bering cisco, Coregonus laurettae Bean, were collected in the lower Susitna River from the mouth of Kroto Slough (R.M. 30.1) to a selected fish habitat just upstream of Talkeetna (R.M. 100.8) from August to October, 1981. Prior to this study, this anadromous whitefish was not known to inhabit the Susitna River drainage. Ninety-five percent of the Bering cisco collected were captured by a fishwheel at Sunshine Station (R.M. 79.0) and a boat mounted electrofishing unit utilized between (R.M. 70.0) and (R.M. 100.8). The largest catches per unit effort were made at Sunshine Station (R.M. 78.0-79.0), Montana Creek (R.M. 76.0-77.5) and mainstem west bank (R.M. 74.3-74.8).

The mean fork length for all fish sampled was 332 mm. The most prevalent age class of Bering cisco encountered was Age IV. Of 51 Bering cisco examined for sex, 51 percent were male and 49 percent were female. Seven hundred and thirteen Bering cisco were tagged with Floy anchor tags to determine their movement in the lower Susitna River. Bering cisco spawning sites were observed at Sunshine Station (R.M. 78.0-79.0), opposite the mouth of Montana Creek (R.M. 76.0-77.5) and along the west bank of the mainstem Susitna (R.M. 74.3-74.8). Habitat parameters were measured at the spawning sites from October 10 through 13. Velocities varied from 0.5-5.8 ft./sec., depths ranged from 0.5-2.5 ft., and temperatures were recorded at 3.0-3.8°C. The spawning substrates were predominantly composed of 1 to 3 inch gravel. Peak spawning occurred during the second week of October.

3.6.2 Introduction

The Bering cisco, Coregonus laurettae Bean, was not known to inhabit the Susitna River drainage prior to this study, although individuals of the species have been collected from Upper Cook Inlet by Blackburn (1978) and from the Knik Arm (McPhail, 1966). The known distribution of the species is restricted to northwestern North America and northeastern Siberia (McPhail and Lindsey, 1970). It is present in Alaska from Cook Inlet west and north to the Colville River. Bering cisco are believed to be a coastal species but Alt (1973) identified them 966 miles up the Yukon River and in the Porcupine River 840 miles upstream from the mouth of the Yukon.

Little is known about the life history of the Bering cisco. Interior and western Alaskan populations of Bering cisco studied by Alt (1973) appear to be comprised of both anadromous and freshwater resident forms. Anadromous Bering cisco apparently rear in salt or brackish water near river mouths, although Alt suggests that freshwater resident populations overwinter in the middle reaches of the Yukon and Kuskokwim rivers. Spawning is known to take place in the fall, but spawning locations and aquatic habitat requirements had not previously been defined. Spawning migrations begin in the spring and summer and appear to be quite rapid in nature. Bering cisco do not appear to feed during the spawning migration; a condition common to many species of Alaskan whitefish. Western and Interior Alaska spawners examined by Alt ranged from Age III to Age VIII and no evidence of repeat spawning was found.

3.6.3 Methods

Bering cisco were collected in the fall of 1981 with variable mesh gillnets (four 7.5 ft. panels with 1 to 2-1/2 inch stretch mesh), fishwheels and boat mounted electrofishing units.

Bering cisco were taken in the Susitna River at River Mile (RM) 30.1 near the mouth of Kroto Slough and upstream to RM 100.8 just north of Talkeetna.

All fish captured were measured for fork length and, where survival from collection and handling was likely, the fish were tagged with Floy anchor tags and released. Age determinations were made using scale analysis. Sex was determined by autopsy and by abdominal manipulation to obtain the discharge of eggs or milt.

3.6.4 Results and Discussion

3.6.4.1 Distribution and Relative Abundance

A total of 834 Bering cisco were captured during the course of this study. Bering cisco were first captured and observed at RM 79.0 by the lower east bank fishwheel at Sunshine Station on August 25. The fishwheel catch rate on cisco gradually increased until it peaked between September 17 and 21 (Table E.3.6.1). Fishwheel catches declined rapidly after September 28 and the fishwheel was removed from the water for winter storage on September 30. At Mainstem Slough (RM 31.0) and Kroto Slough Mouth (RM 30.1) Bering cisco were

Table E.3.6.1. Bering cisco fishwheel catch on the Susitna River at Sunshine Station (RM 79.0), August to September, 1981.

Date	Catch per day
8-25	3
8-27	4
9-5	2
9-6	5
9-7	2
9-8	3
9-9	1
9-10	8
9-11	11
9-13	9
9-14	3
9-15	2
9-16	11
9-17, 9-18	39
9-19, 9-20	50
9-21	58
9-22	6
9-23	21
9-24	16
9-25	12
9-26	13
9-27	4
9-28	15
9-30	5

taken by gillnet on September 10 (Table E.3.6.2) and again at Mainstem Slough on September 14 and 28.

Electrofishing conducted September 25 through October 15 demonstrated that Bering cisco were dispersed in the Susitna River from RM 70.0 to RM 100.8. Relatively large numbers were located near Sunshine Station (RM 78.0 to 79.0), Montana Creek (RM 76.0 to 77.5), and Mainstem West Bank (RM 74.3 to 74.8) while smaller numbers and individuals were distributed throughout the range of sites listed in Table E.3.6.3.

Susitna River Bering cisco appear to be the anadromous form. The fish captured and identified were evidently undertaking their spawning migration, as no substantiated occurrence of the species was noted prior to August 25, 1981.

3.6.4.2 Age, Length, and Sex Composition

One hundred ninety Susitna River Bering cisco from fishwheel, gillnet and electrofishing catches were aged. Table E.3.6.4 illustrates that the majority of fish were Age IV (88%) with the remaining Age III (9%) and Age V (3%).

Of the Bering cisco used for age determination, Age III Bering cisco averaged 305 mm in fork length (range 277-342 mm) while Age IV averaged 337 mm (range 280-390 mm) and Age V averaged 365 mm (range 336-385 mm). Figure E.3.6.1 illustrates the average length and range of lengths for each age class of Bering cisco caught in the Susitna River.

Table E.3.6.2. Bering cisco gillnet catch on the Susitna River at Kroto Slough mouth (RM 30.1) and Mainstem Slough (RM 31.0), September 1981.

Date(s)	Location	Net Nights	Number Caught	Fish/ net night
9-10, 9-11	Mainstem Slough RM 31.0	2	23	11.5
9-11	Kroto Slough Mouth RM 30.1	1	1	1.0
9-14	Mainstem Slough RM 31.0	1	2	2.0
9-28	Mainstem Slough RM 31.0	1	2	2.0

Table E.3.6.3. Bering cisco electrofishing catch on the Susitna River between RM 67.5 and RM 97.9, September 25 to October 15, 1981.

Date	Location	River Mile	Catch/hr.	Total Catch
10/2	Billion Slough Mouth	97.9	0.0	0
10/2	Mainstem Susitna	97.7	0.0	0
10/3	Mainstem Susitna	95.8	8.0	4
10/3	Cache Creek Slough Mouth	95.5	0.0	0
10/3	Mainstem Susitna	95.3	4.0	1
10/3	Mainstem Susitna	95.0	0.0	0
10/3	Birch Creek Slough Head	92.9	0.0	0
10/3	Mainstem Susitna	91.9	0.0	0
10/4	Birch Creek Slough Mouth	88.4	0.0	0
10/4	Mainstem Susitna	86.0	20.0	10
10/6-7	Mainstem Susitna	84.0	12.0	12
10/6	Mainstem Susitna	83.2	0.0	0
10/4	Rabideux Creek Mouth	83.1	0.0	0
10/6	Mainstem Susitna	80.0	28.0	7
10/5, 6, 7	Mainstem Susitna Sunshine	78.5	52.0	78
10/5, 6, 7	Mainstem Susitna Montana	77.0	33.3	83
10/6	Montana Creek Mouth	76.9	12.0	3
10/6	Mainstem Susitna	74.6	8.0	2
10/5, 6	Mainstem Susitna West Bank	74.5	39.3	59
10/6	Mainstem Susitna	70.0	17.0	17
10/13	Mainstem Susitna	84.0	0.0	0
10/13, 14	Mainstem Susitna Sunshine	78.5	76.0	38
10/13, 15	Mainstem Susitna Montana	77	13.3	10
10/	Montana Creek Mouth	76.9	0.0	0
10/13	Mainstem Susitna	74.5	8.0	2
10/13	Mainstem Susitna	74.0	0.0	0
10/15	Goose Creek Mouth	73.1	0.0	0
10/15	Mainstem Susitna	70.0	0.0	0
10/15	Mainstem Susitna	67.5	4.0	1

Table E.3.6.4. Bering cisco, age-length frequency composition on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	-	-	-	-	-	-	-	-	-
III	17	304.9	284-342	-	-	-	17	304.9	284-342
IV	168	337.5	272-380	-	-	-	168	337.5	272-380
V	5	365.0	336-385	-	-	-	5	365.0	336-385
TOTALS	190	335.3	272-385	0	-	-	190	335.3	272-385

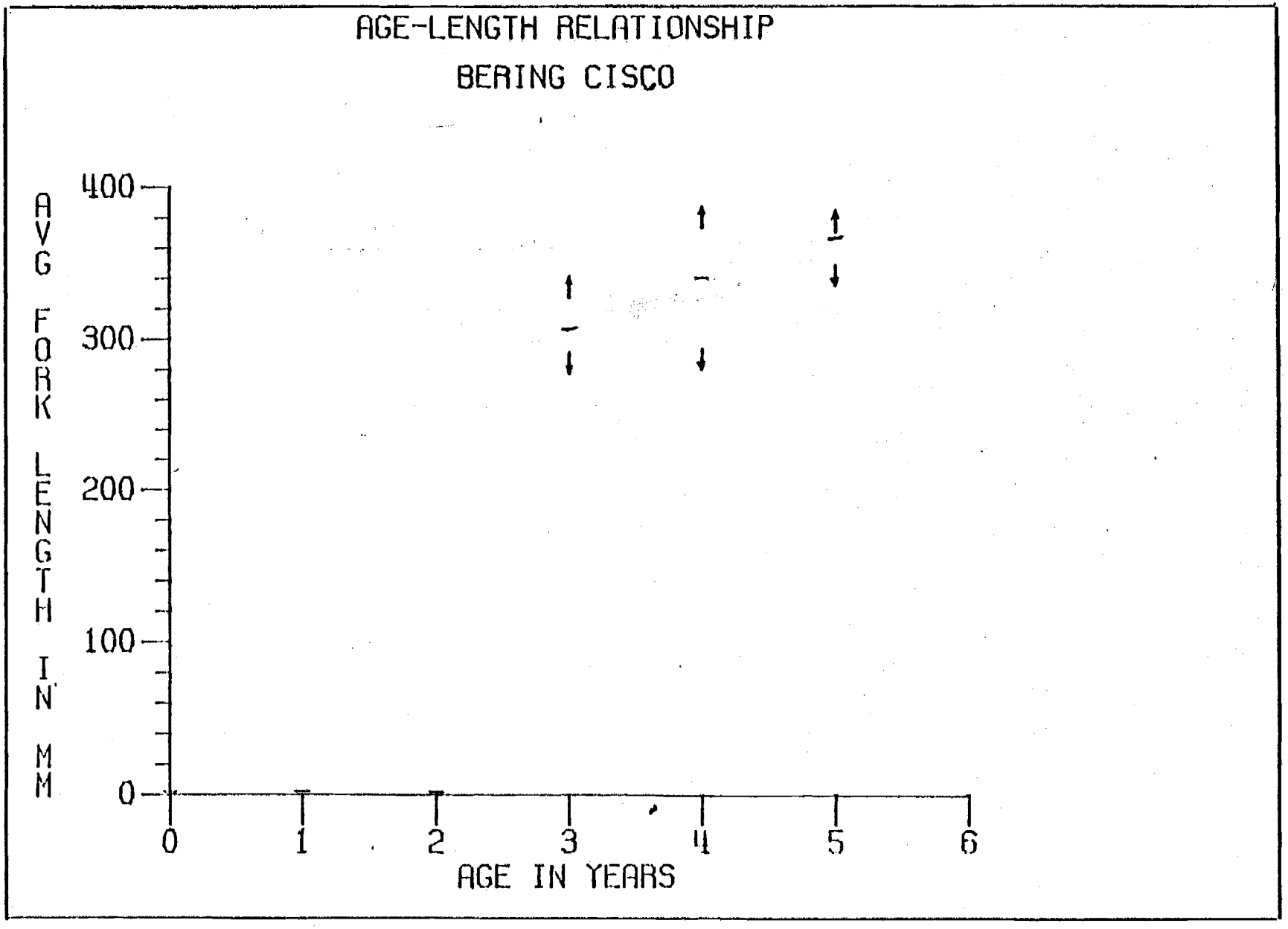

Figure E.3.6.1. Age and length relationship for Bering cisco captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

Six-hundred fifty-eight Bering cisco captured by fishwheel, gillnet and electrofishing were measured to the nearest millimeter (mm) in fork length. Fish 300 mm to 360 mm occurred with the greatest percent frequency. Mean length of ciscos measured was 332 mm in fork length with an overall range of 220 to 430 mm (Figure E.3.6.2).

All fish examined for sex composition were mature. Of the 51 Bering cisco examined 26 (51%) were males and 25 (49%) were female. Males comprised 83 percent of the Age III fish for which sex determination was made, and 49 percent and 100 percent of Age IV and Age V fish respectively (Table E.3.6.5).

3.6.4.2 Spawning

Bering cisco evidently began their spawning migration up the Susitna River from Cook Inlet in August and arrived at the Sunshine Station fishwheel site RM 79 over a five week period from August 25 to September 30. Fish captured by the fishwheel during this time were all bright silver and appeared to be sexually mature. However, normal handling did not produce a discharge of eggs or milt. From October 4 through 7 relatively large numbers of Bering cisco were located by electrofishing in the Montana Creek-Sunshine Station area (RM 74.5 to RM 80.0) dispersed along gradually sloping gravel bars. These fish were amber in color but had not yet spawned. Random necropsies showed all fish to contain mature sex products.

Electrofishing was conducted in the Montana-Sunshine area again October 13 through 15. All fish handled on these dates either expelled eggs or milt

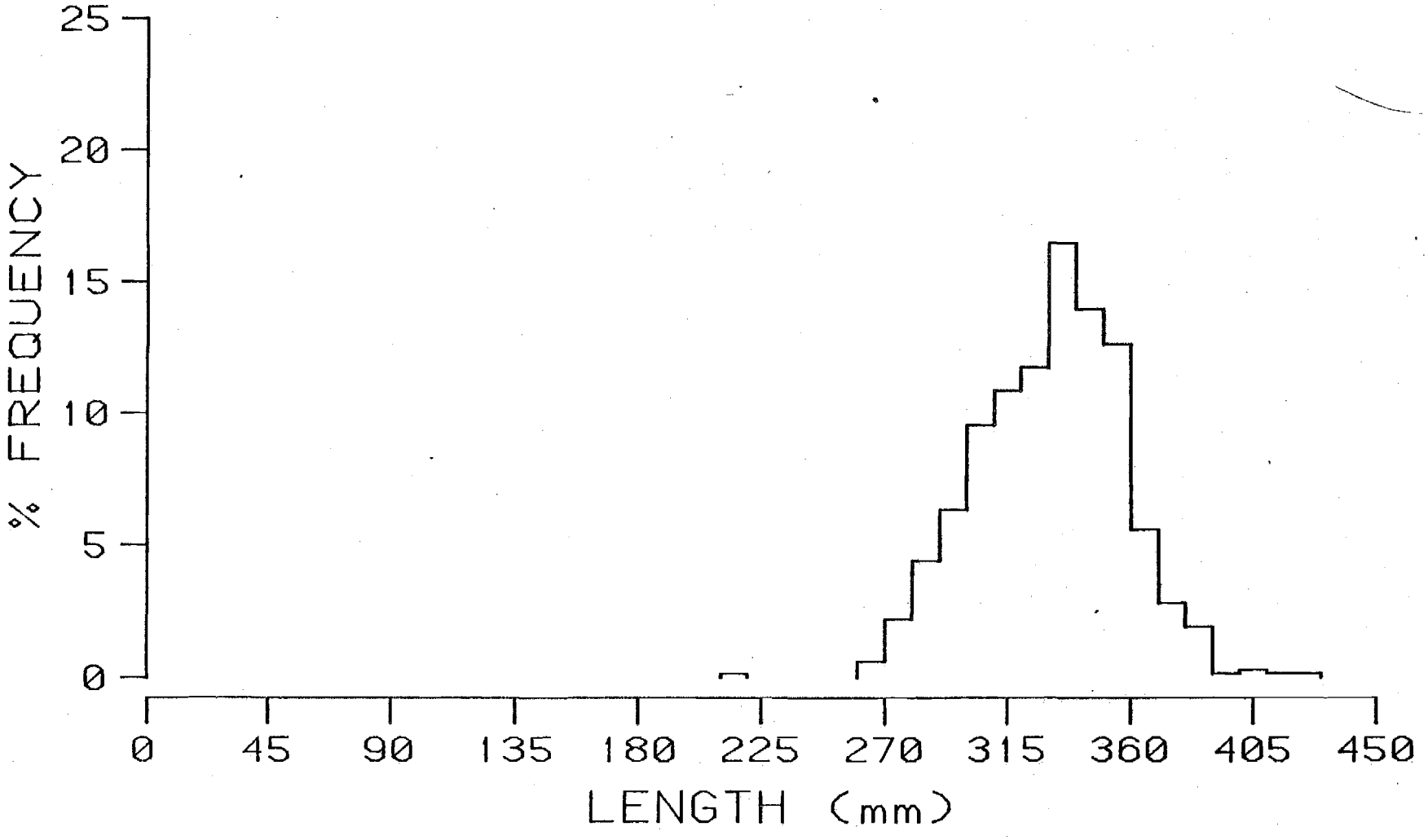

Figure E.3.6.2. Length frequency composition of Bering cisco captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.6.5. Bering cisco, summary of sex determination data on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0+	-	-	-	-	-	-			
I	-	-	-	-	-	-			
II	-	-	-	-	-	-			
III	5 (83.3)	1 (16.7)	6	-	-	-	5 (83.3)	1 (16.7)	6
IV	22 (51.2	21 (48.8)	43	-	-	-	22 (51.2)	21 (48.8)	43
V	0 (0.0)	2 (100.0)	2	-	-	-	0 (0.0)	2 (100.0)	2
TOTALS	27 (52.9)	24 (47.1)	51	0	0	0	27 (52.9)	24 (47.1)	51

freely or were spent. From these observations, spawning appeared to peak during the second week of October.

Sexually mature Bering cisco were captured from habitat locations over a 70 mile reach of the Susitna River. Although spawning sites may generally occur throughout this reach, electrofishing surveys were able to identify three areas of spawning concentrations. These were at RM 78.0 to 79.0 opposite Sunshine Station, RM 76.0 to 77.5 opposite the mouth of Montana Creek and RM 74.3 to 74.8 along the west bank.

The Sunshine Station (RM 78.0 to 79.0) spawning site is a mile-long gradually sloping gravel bar opposite a 100 foot high cut bank. The channel configuration and position of the thalweg are stable at this site. Bering cisco were captured at depths ranging from 0.5 feet to 2.5 feet and at velocities 0.5 feet per second to 3.5 feet per second (Figure E.3.6.3). Substrate ranged from silt to cobble with one to three inch gravel predominating (Table E.3.6.6). Water temperature on October 13 was 3.8°C.

The Montana Creek (RM 76.0 to 77.5) spawning site is a 1.5 mile long gradually sloping gravel bar opposite Montana Creek mouth, with a relatively stable channel. Bering cisco were captured at depths ranging from 0.6 feet to 2.3 feet and at velocities from 0.8 to 4.1 feet per second (Figure E.3.6.4). The substrate ranged from silt to cobble but one inch to three inch gravel and cobble predominated. Water temperature on October 13 ranged from 3.0° to 3.3°C over the length of the spawning site.

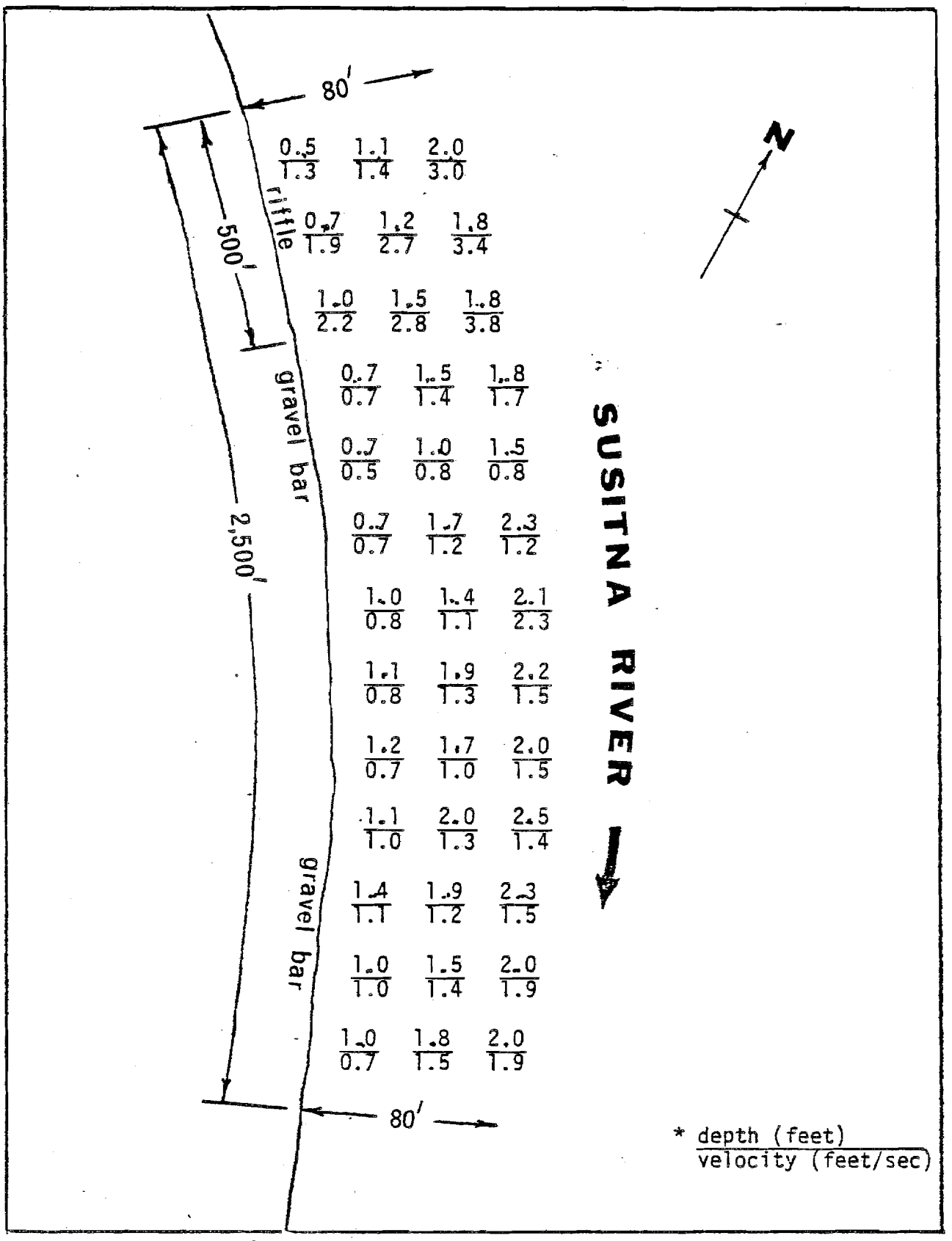

Figure E.3.6.3. Bering cisco spawning area on the Susitna River at Sunshine, RM-78.0 to RM-79.0, October 13, 1981.

Table E.3.6.6. Bering cisco spawning site evaluation on the Susitna River, October, 1981.

Location	Mile	Date	T°C	pH	Cond	DO	Substrate Comp.
Sunshine	78-79	10-13	3.8	7.0	127	12.3	40%:1"-3"gravel 25%:3"-6"cobble 20%:silt & sand 10%:1/4"-1"gravel
Montana	77-77.5	10-13	3.0	7.0	131	13.4	30%:1"-3"gravel 30%:3"-6"cobble 20%:silt & sand 10%:1/4"-1"gravel
	76-77	10-13	3.3	6.8	128	12.6	30%:1"-3"gravel 30%:3"-6"cobble 20%:silt & sand 10%:1/4"-1"gravel
Mainstem West Bank	75	10-13	3.1	7.0	134	13.0	40%:1"-3"gravel 20%:3"-6"cobble 20%:sand & silt 10%:1/4"-1"gravel

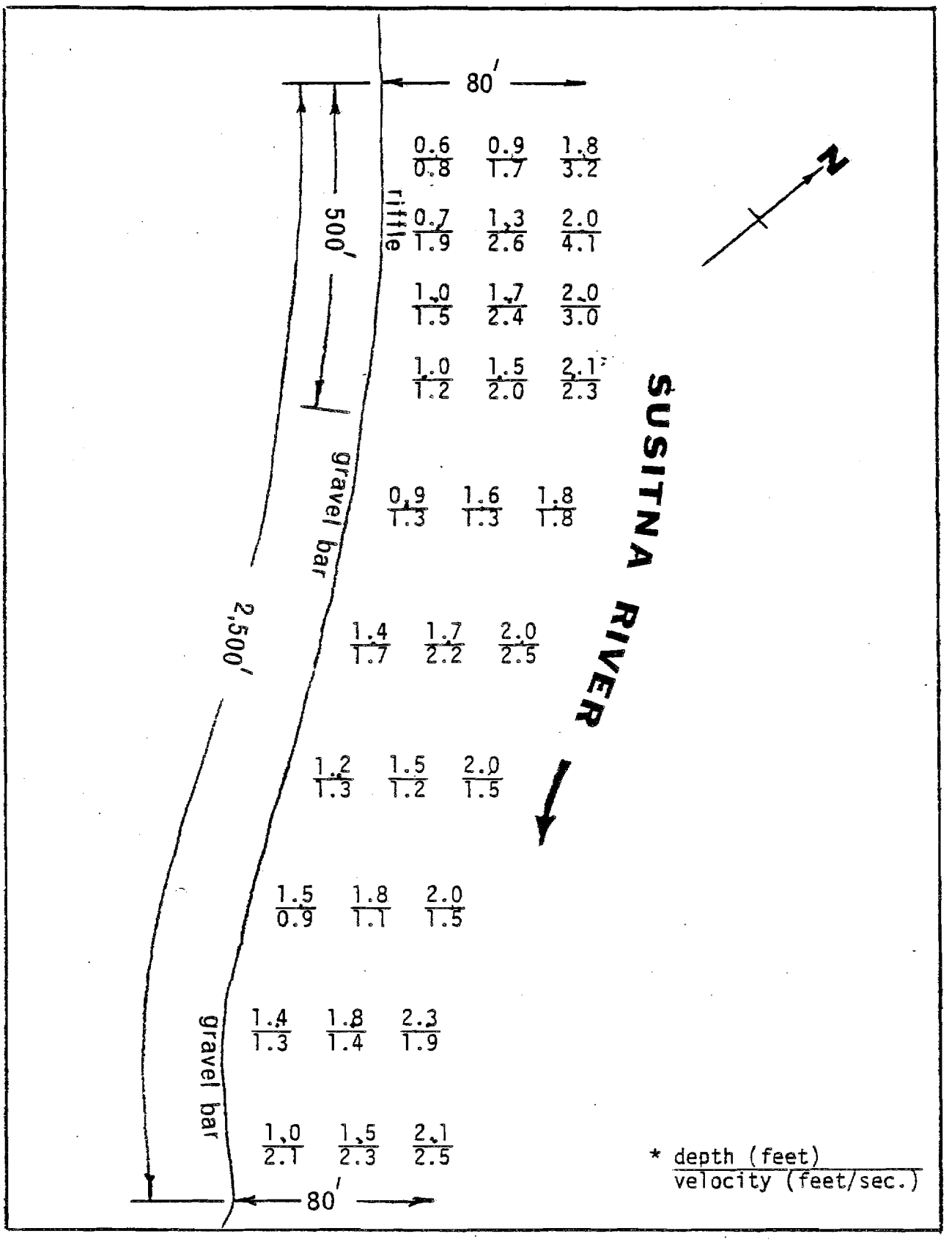

Figure E.3.6.4. Bering cisco spawning area on the Susitna River at Montana Creek, RM-76.0 to RM-77.5, October 15, 1981.

The mainstem westbank (RM 74.3 to 74.8) spawning site differed from the Sunshine and Montana sites because it is located on the outside of a riverbend and has higher water velocities. The channel configuration at this site is also relatively stable. Bering cisco were captured at depths ranging from one foot to 2.5 feet and at velocities 3.6 to 5.4 feet per second (Figure E.3.6.5). Substrate ranged from silt to cobble with one inch to three inch gravel predominating. Water temperature on October 13 was 3.1°C.

3.6.4.3 Tagging and Recapture

Seven-hundred thirteen Bering cisco were tagged with Floy anchor tags and released in the area of their capture (Table E.3.6.7). Thirteen of these fish were recaptured from one to 16 days after tagging. Distance traveled by these fish ranged from zero to four miles.

The majority of tagging for Bering cisco was conducted at or near identified spawning locations. Since subsequent electrofishing recapture efforts took place at these same locations, very little movement was detected.

Susitna River Bering cisco appear to spend 15 to 20 days on their spawning grounds. This reflects the time interval between the peak catches at the Sunshine Station and the peak of spawning. After spawning, these fish probably undertake a rapid downstream migration to sea, as is common with many other anadromous Alaskan whitefish. Cold weather and river icing conditions prevented capture efforts from taking place in the lower reaches of the

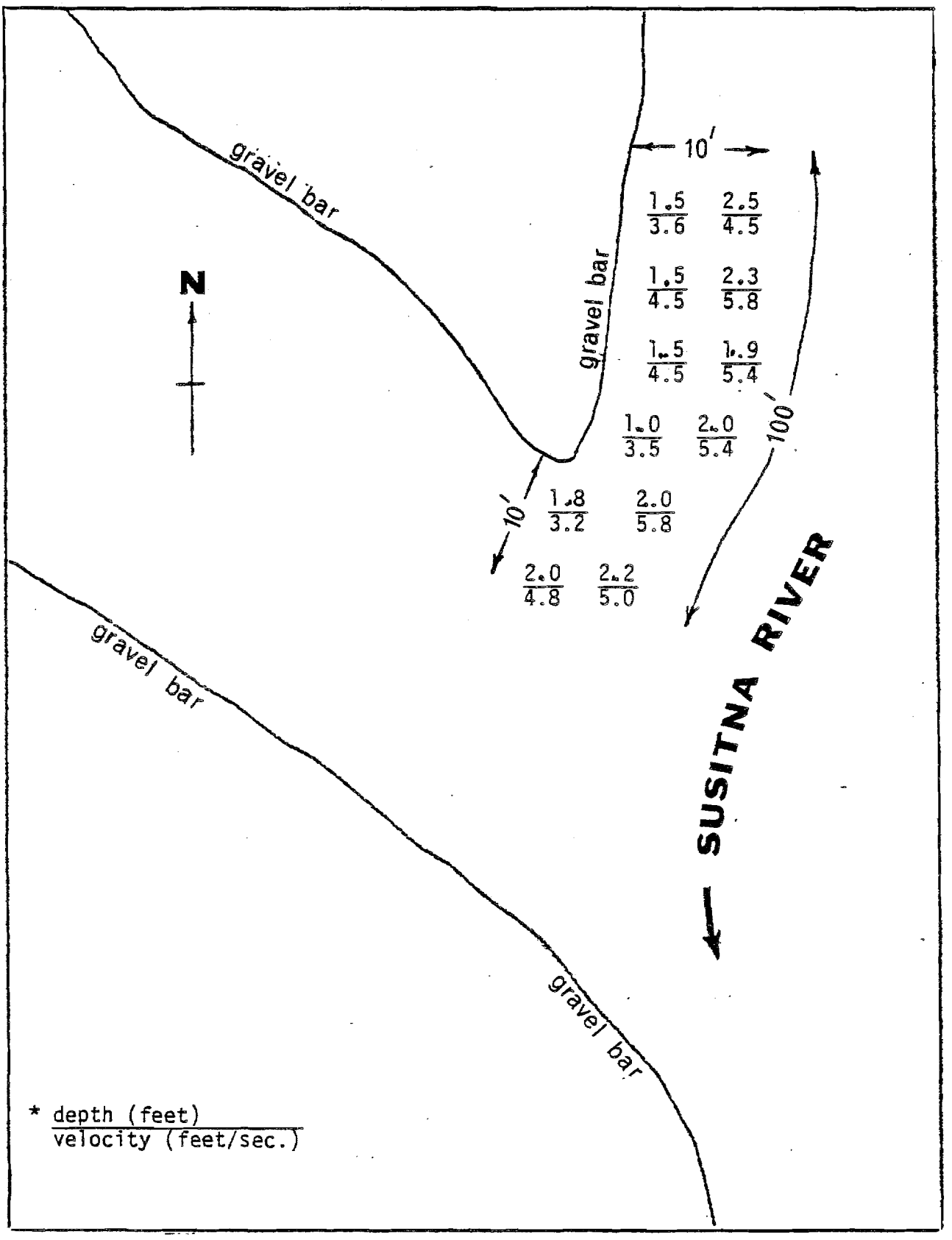

Figure E.3.6.5. Bering cisco spawning area on the Susitna River at Mainstream West Bank, RM-75.0, October 13, 1981.

Table E.3.6.7. Bering cisco, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, August to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
Cook Inlet to Talkeetna	8/16-8/31	7	-	-	7
	9/1-9/15	46	23	-	69
	9/16-9/30	250	11	53	314
	10/1-10/15	-	3	307	310
	Subtotal	303	37	370	710
Talkeetna to Devil Canyon	9/16-9/30	-	-	1	1
	10/1-10/15	-	-	2	2
	Subtotal	0	0	3	3
	TOTAL	303	37	373	713

Note - Recapture data presented in discussion section.

Susitna River in mid October. As Alt (1973) suggests that repeat spawning does not occur in Bering cisco, it is highly unlikely that any of the tagged fish will be recaptured in subsequent years.

3.7 LONGNOSE SUCKER

3.7.1 Abstract

Longnose suckers, Catostomus catostomus, were found throughout the study area from Alexander Creek (R.M. 10.1) to Portage Creek (R.M. 148.8). The catch per unit effort for gillnets at most habitat locations was highest in June and September with lower catches per unit effort recorded during July and August. Anderson Creek (R.M. 23.8), Deshka River (R.M. 40.6), Sunshine Creek (R.M. 85.7), and the mainstem Susitna at river mile 114.4 were the most productive locations. The most prevalent age classes of the 197 fish aged were Age IV, Age V, and Age VI, with Age VI the most common. Age VI fish averaged 324 mm in fork length and ranged from 171 to 374 mm. The 532 longnose suckers captured ranged in fork length from 32 to 455 mm with a mean of 259 mm. A total of 350 longnose suckers were tagged with Floy anchor tags to determine movement. Two of these were recaptured in the same area in which they had been released and a third one had moved 1.5 miles downstream.

3.7.2 Introduction

The longnose sucker, Catostomus catostomus Forster, is widely distributed from Alaska to Labrador. It extends south into Pennsylvania on the east coast, the Mississippi-Missouri river system of the midwest and the Columbia River system on the west coast (McPhail and Lindsey, 1970). The longnose sucker is the only North American sucker which also occurs in Asia, where it is found in several of the Arctic Ocean drainages of Siberia (Scott and Crossman, 1973).

This sucker is ubiquitous in most of the drainages of mainland Alaska but is not found on the islands along the Pacific, Bering and Arctic coasts (Morrow, 1980).

The longnose sucker is the only representative species of the sucker family found in Alaska. It can be easily distinguished from other Alaskan fishes by its ventral sucking mouth and large papillose lips. There are no obvious external differences between the sexes except during spawning periods when breeding males have well developed tubercles on the head and on the anal and caudal fins. Breeding males are also more vividly colored than females with the prominent feature being a bright red stripe along each side.

Investigations into the life history of the longnose sucker by Morrow (1980) indicate the age of sexual maturity varies with latitude. The northernmost fish spawn for the first time between the ages of five and six years. Spawning usually takes place in spring shortly after ice out. Fish in the lower latitudes generally spawn between late April and May; farther north, spawning may not occur until July. Spawning runs begin when the water temperature exceeds 5°C (41°F) and at this time fish begin moving from lakes into inlet streams or from deep pools into shallower gravel-bottomed portions of streams. After spawning, fish usually return to their previous lake or stream position. Post spawning mortality is estimated to be 10 to 30 percent. Many fish spawn in consecutive years for two or three years while others spawn only once in two or three years (Green et al., 1966). The eggs hatch in about two weeks depending on temperature and the fry remain in the gravel an additional one to two weeks after hatching. Most fry then begin a nocturnal movement downstream to the lake while others remain in the streams all summer.

The longnose sucker is almost exclusively a bottom feeder with benthic invertebrates constituting the major portion of its diet. There is no record of them feeding on vertebrates. There have been reports of this species ingesting fish eggs, including those of trout, but in most cases these eggs were floating and dead when eaten (Scott and Crossman, 1973).

3.7.3 Methods

Longnose sucker were collected in the summer and fall of 1981 with variable mesh gill nets (four 7.5 ft. panels with 1 to 2-1/2 inch stretch mesh), fishwheels, fry traps and boat mounted electrofishing units. All fish captured were measured for fork length in millimeters. Age determinations were made using scale analysis. Sexes were identified by examining reproductive organs of autopsied fish or by abdominal manipulation to obtain discharges of eggs and milt. Where survival from collection and handling was anticipated, suckers were tagged with Floy tags and released.

3.7.4 Results and Discussion

3.7.4.1 Distribution and Relative Abundance

Longnose suckers were first captured and observed at the mouths of the Deshka River (RM 40.6) and Cache Creek Slough (RM 95.5) on May 9th. In early June, longnose suckers were captured at several locations on the Susitna River between Kroto Slough (RM 30.1) and Portage Creek (RM 148.8). The percentage of habitat locations where longnose suckers were captured by gillnet was

relatively high during the early part of the summer, then decreased during mid-summer (Figure E.3.7.1 and E.3.7.2). The percentage increased again in September in the lower river, but not above Talkeetna. The highest fall gillnet catches were reported at the Deshka River (RM 40.6) and Sheep Creek Slough (RM 66.1) (Appendix Table EB-7). An increased presence of longnose suckers was also detected in the mainstem Susitna below Talkeetna in September with the aid of boat mounted electrofishing units. A total of 532 longnose suckers were captured during the course of this study.

A continual presence of juvenile longnose suckers was found using minnow traps, primarily in the Susitna River below Curry (RM 120.7). Their presence shifted further downriver as the season progressed.

3.7.4.2 Age, Length, and Sex Composition

One hundred ninety-seven longnose suckers taken from the Susitna River by fishwheel, gill net and electrofishing gear were aged by scale analysis. The majority of these fish were Age VI and VII, comprising 33 and 22 percent of the catch respectively (Table E.3.7.1). The oldest fish caught were Age IX (3%) while the youngest were Age 0+ (1%). Longnose sucker of Age VI averaged 324mm in fork length (range 171-374) while those of Age VII averaged 368mm (range 312-400).

Figure E.3.7.3 illustrates the average length and range of lengths for each age class of longnose sucker caught in the lower Susitna River.

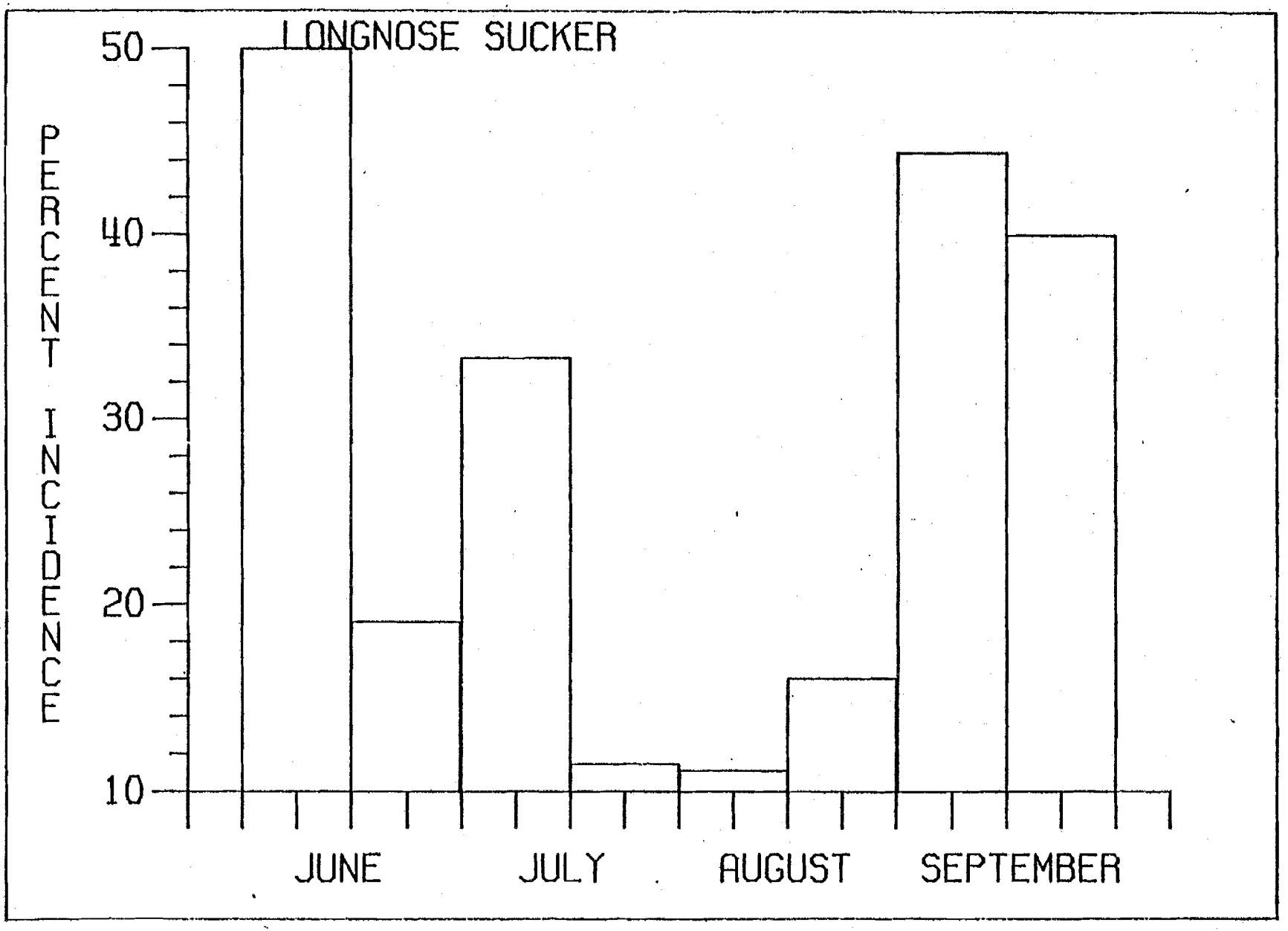

Figure E.3.7.1. Percent incidence of longnose suckers captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

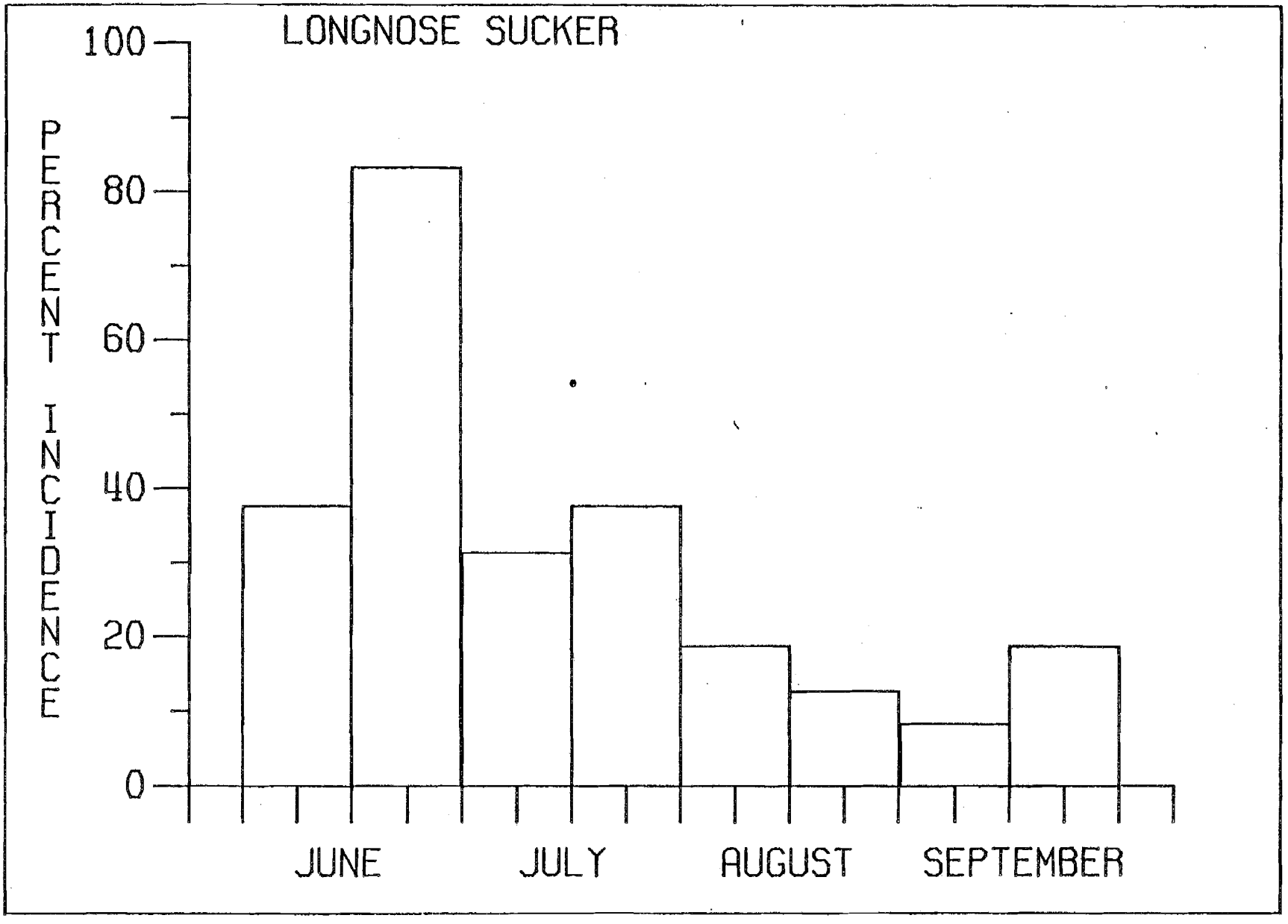

Figure E.3.7.2. Percent incidence of longnose suckers captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Table E.3.7.1. Longnose sucker, age - length frequency composition at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Cook Inlet to Devil Canyon		
	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)	Total No. of fish Sampled	Mean Length (mm)	Range of Length (mm)
0	-	-	-	2	73	62-84	2	73	62-84
I	-	-	-	-	-	-	-	-	-
II	1	120	120	-	-	-	1	120	120
III	13	211	162-267	1	168	168	14	208	162-267
IV	9	239	225-268	8	237	199-283	17	238	199-283
V	15	286	244-348	10	263	241-305	25	276	241-348
VI	37	341	315-367	28	301	171-374	65	324	171-374
VII	33	375	350-437	11	346	312-400	44	368	312-437
VIII	17	410	334-440	7	383	369-405	24	402	334-440
IX	5	452	432-475	-	-	-	5	452	432-475
X	-	-	-	-	-	-	-	-	-
TOTALS	130	335	120-475	67	295	62-405	197	321	62-475

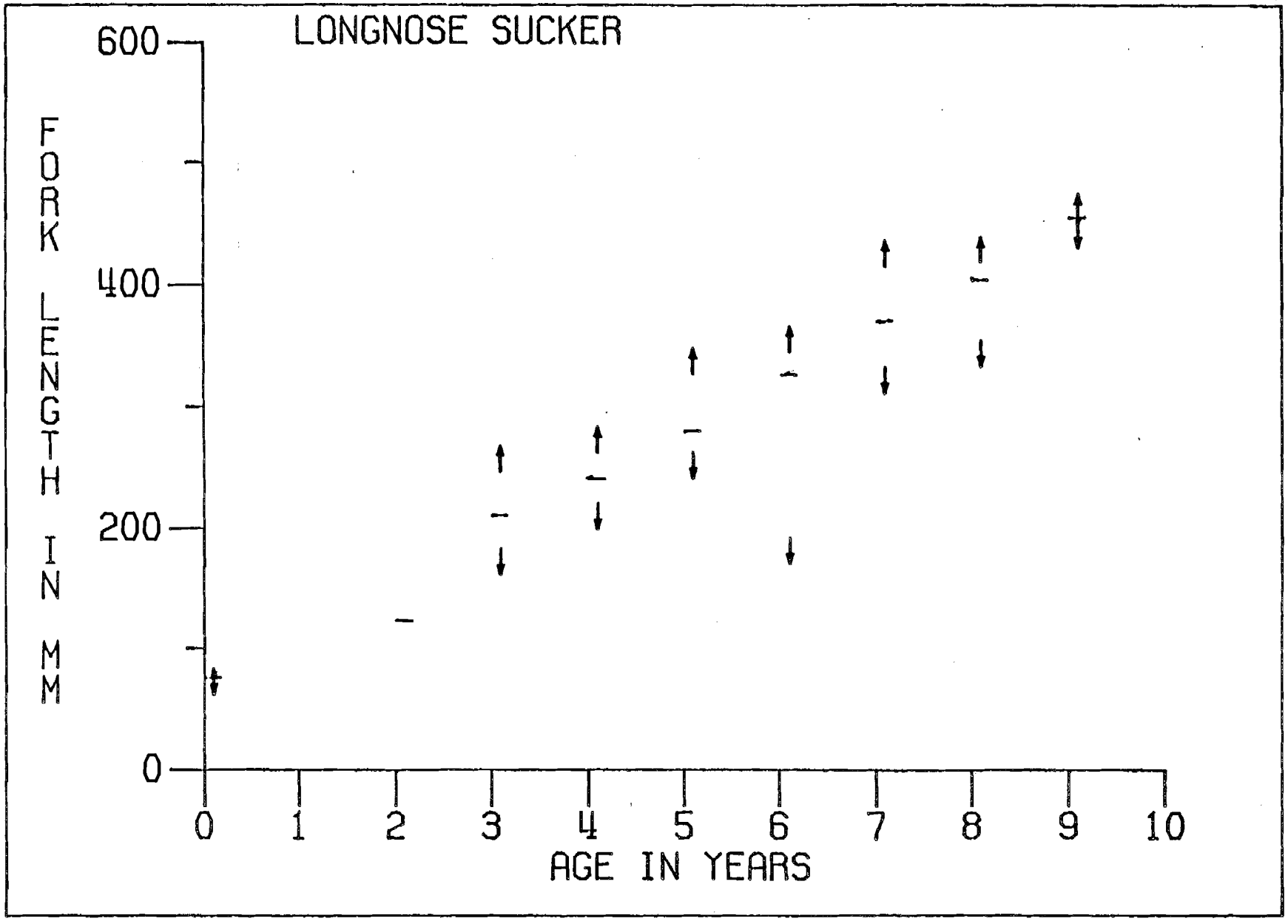

Figure E.3.7.3. Age and length relationship for longnose suckers captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981. The mean length for each age class is indicated by a horizontal bar and the range is indicated by arrows.

The fork lengths of 358 longnose suckers were measured to the nearest millimeter (mm). Fish 250 to 260 mm in length occurred with the greatest percent frequency (8%). The mean fork length of fish measured was 256 mm with an overall range of 32 to 455 mm (Figure E.3.7.4).

Of the 15 longnose suckers which were examined to determine age and sex, 10 (66.7%) were males and 5 (33.3%) were females (Table E.3.7.2).

3.7.4.3 Tagging and Recapture

Three hundred and fifty longnose sucker were tagged with Floy anchor tags during the field season (6/1-9/30) and released in the area of their capture (Table E.3.7.3). Three of these fish were recaptured from one to 29 days later. Two of the recaptured fish showed no movement. A third sucker tagged on October 5th moved 1.5 miles downstream in the Susitna River over a 24-hour period. Due to the low number of recaptures made, little can be inferred about migrations and movements at this time.

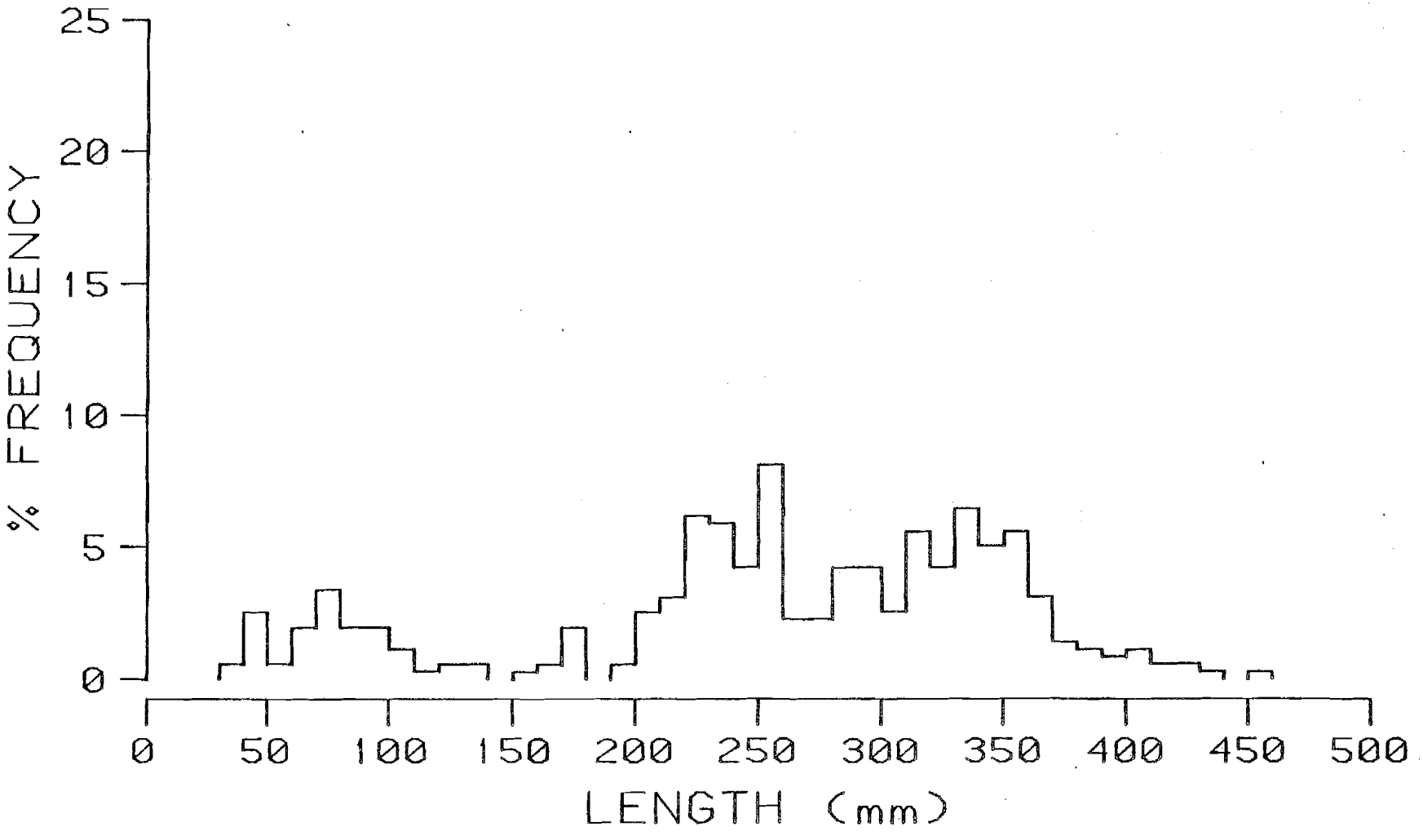

Figure E.3.7.4. Length frequency composition of longnose sucker captured at habitat location sites on the Sustina River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.7.2. Longnose sucker, summary of sex determination data at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Age (Years)	Cook Inlet to Talkeetna			Talkeetna to Devil Canyon			Total		
	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed	Male No. (%)	Female No. (%)	Total No. Sexed
0	-	-	-	-	-	-	-	-	-
I	-	-	-	-	-	-	-	-	-
II	-	-	-	-	-	-	-	-	-
III	-	-	-	-	-	-	-	-	-
IV	-	-	-	1 (100.0)	0 (0.0)	1	1 (100.0)	0 (0.0)	1
V	1 (100.0)	0 (0.0)	1	3 (100.0)	0 (0.0)	3	4 (100.0)	0 (0.0)	4
VI	0 (0.0)	1 (100.0)	1	2 (66.7)	1 (33.3)	3	2 (50.0)	2 (50.0)	4
VII	1 (100.0)	0 (0.0)	1	2 (100.0)	0 (0.0)	2	3 (100.0)	0 (0.0)	3
VIII	0 (0.0)	2 (100.0)	2	0 (0.0)	1 (100.0)	1	0 (0.0)	3 (100.0)	3
TOTALS	2 (40.0)	3 (60.0)	5	8 (80.0)	2 (20.0)	10	10 (66.7)	5 (33.3)	15

Table E.3.7.3. Longnose sucker, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, May to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
		Sunshine			
Cook Inlet to Talkeetna	5/1-5/15	-	121	19	140
	6/1-6/15	-	42	-	42
	6/16-6/30	-	25[a]	-	25
	7/1/7/15	-	13	-	13
	8/1-8/15	-	5	4	9
	8/16-8/31	1	3	-	3
	9/1-9/15	-	7	-	7
	9/16-9/30	-	22	-	22
	10/1-10/15	-	-	8[a]	8
	Subtotal	1	238	31	270
		Talkeetna			
Talkeetna to Devil Canyon	6/1-6/15	-	12	-	12
	6/16-6/30	1	37[a]	-	37
	7/1-7/15	-	7	-	7
	7/16-7/31	-	18	-	18
	8/16-8/31	-	1	-	1
	9/16-9/30	-	5	-	5
	Subtotal	0	80	0	80
TOTAL		1	318	31	350

a One tagged recapture from each of these note. Total recaptures for longnose suckers equaled 3.

3.8 DOLLY VARDEN

3.8.1 Abstract

One hundred fourteen Dolly Varden, Salvelinus malma, were collected on the lower Susitna River from March through late September, 1981. Dolly Varden were collected at 23 habitat locations between Alexander Creek (R.M. 10.1) and Portage Creek (R.M. 148.8). Peak catches of Dolly Varden were made in June and late September. The largest catch per unit effort for Dolly Varden were recorded at the mouths of tributary streams such as Portage Creek (R.M. 148.8), Kashwitna River (R.M. 61.0), and Sheep Creek (R.M. 66.1). The mean fork length for Dolly Varden captured in the Susitna River between Cook Inlet and Devil Canyon was 196 mm. Dolly Varden sampled by minnow traps in upper Indian River and Portage Creek had a mean length of 94 mm. Fifty-nine Dolly Varden were tagged with numbered Floy anchor tags to monitor their movements in the Susitna River.

3.8.2 Introduction

Dolly Varden, Salvelinus malma Walbaum are distributed throughout Alaska where the species occupies aquatic habitats ranging from coastal streams to lakes and streams located far inland. Dolly Varden occur as both anadromous and freshwater resident forms. In the upper reaches of many streams and in numerous mountain lakes there exists isolated populations of stunted, dwarf Dolly Varden. These fish, locally referred to as golden fins, rarely exceed 270 millimeters fork length but there have been specimens reported to reach up to 12 years of age (Morrow, 1980). The Dolly Varden exhibits as much color

variation as the degree to which it's habitat varies. In salt water, it is silvery; in cold headwater mountain streams, it tends to have bright orange or red spots. Body conformity varies from slim in mountainous streams to full bodied in the anadromous populations. Dolly Varden reach sexual maturity at Age IV to Age VII and normally spawn in swift clearwater streams during the fall of the year. The diet of Dolly Varden varies considerably, however Morrow (1980) indicates that stream populations feed primarily on insects, spiders, annelids, snails, clams, fish eggs, and various small fishes. Dolly Varden are known to eat salmon eggs and salmon fry; however, the extent to which this occurs on the Susitna River is not currently known.

3.8.3 Methods

Dolly Varden were captured using minnow traps, trotlines, gillnets, fish traps and hook and line. All specimens captured were measured for fork length in millimeters.

Active adults were tagged with Floy anchor tags. Scales were collected from approximately 50 fish for age analysis but the majority were unreadable.

3.8.4 Results and Discussion

3.8.4.1 Distribution and Relative Abundance

November through May sampling within the Susitna River, from Cook Inlet to Devil Canyon, produced a catch of two Dolly Varden. One was taken by gillnet from Little Willow Creek; one was taken by trot line at River Mile 84.0.

Dolly Varden were collected at a total of 52 percent of the habitat locations in the Cook Inlet to Talkeetna reach during June to September 1981. The occurrence of Dolly Varden in habitat location catches by a two week period varied from a low of eight percent in the last two weeks of August to a high of 20 percent in the last two weeks of September (Figure E.3.8.1). Tributary stream mouth habitat locations produced the most consistent catches of Dolly Varden with the highest catches occurring at the mouth of Portage Creek (R.M. 148.8) (Appendix Table EB-8) in early June.

Dolly Varden were collected at a total of 59 percent of the habitat locations in the Talkeetna to Devil Canyon reach. During June to September the occurrence of Dolly Varden in habitat location catches varied from a high of 21 percent in June to a low of no catches in July. Catches of Dolly Varden occurred again in August and September (Figure E.3.8.2). A total of 17 Dolly Varden were captured in habitat locations at the mouths of Indian River and Portage Creek, and a selected fish habitat site at the mouth of Billion Slough produced 7 of the 17 fish captured. Other sites produced maximum catches of only one Dolly Varden.

The higher incidence of Dolly Varden catches during July coincided with the peak migration periods of pink, chum, and sockeye salmon. The higher incidence of catches during September can be attributed to two factors: Dolly Varden moving into their spawning areas within the clearwater tributaries, and the beginning of outmigration into their wintering habitat.

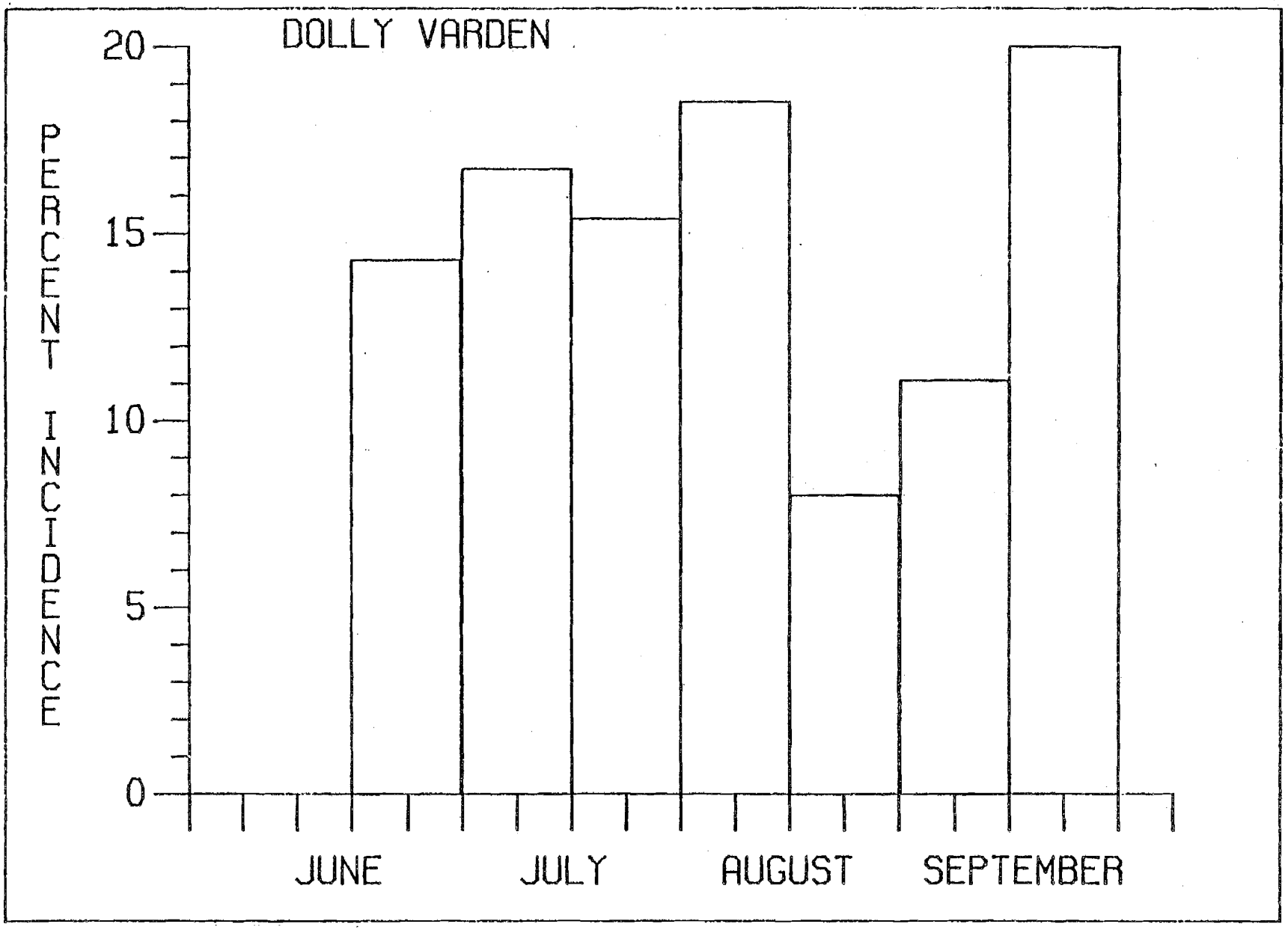

Figure E.3.8.1. Percent incidence of Dolly Varden captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

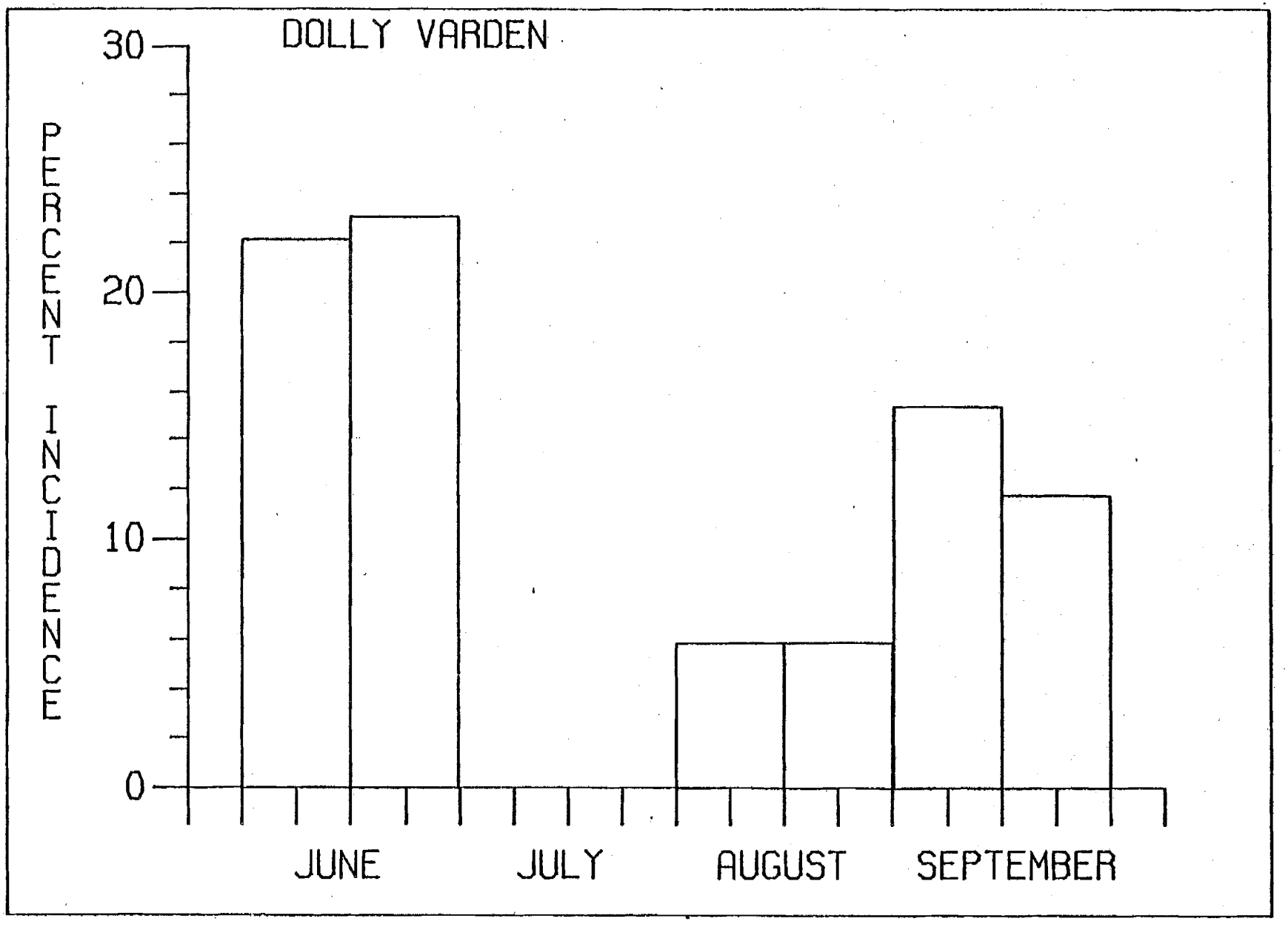

Figure E.3.8.2. Percent incidence of Dolly Varden captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Small Dolly Varden (mean length of 94 mm) were captured in upper Portage Creek and upper Indian River. Slightly larger individuals were observed around the miniow traps, but, due to their larger size, were unable to enter the traps. Catch and catch per unit effort by site and date are shown in Table E.3.8.1.

Sexually mature fish were found in September and October. Dolly Varden displaying spawning behavior were observed October 2nd in upper Indian River.

3.8.4.2 Length Frequency

Fork lengths were recorded from 89 Dolly Varden in the Cook Inlet to Devil Canyon habitat locations. Lengths ranged from 49mm to 407mm with a mean of 196mm. The majority of the lengths were found in the 90-180mm range (Figure E.3.8.3).

The lengths of 127 Dolly Varden collected at upper Indian River and Portage Creek sites ranged from 62mm to 135mm with a mean of 94mm.

3.8.4.4 Tagging

A total of 59 Dolly Varden were tagged with Floy anchor tags in the Cook Inlet to Devil Canyon reach; 47 from Cook Inlet to Talkeetna and 12 from Talkeetna to Devil Canyon (Table E.3.8.2). No recaptures have been recorded.

Table E.3.8.1. Dolly Varden catch and catch per unit effort (CPUE) by habitat location sites, upper Indian River and upper Portage Creek helio surveys, June to October, 1981.

	Indian River				Portage Creek			
Round	Site	RM	Catch	CPUE/Trap	Site	RM	Catch	CPUE
	1	2.7	0	0.00	1	4.5	1	0.02
1	2	7.2	0	0.00	2	9.2	3	0.15
	3	12.0	0	0.00	3	15.6	3	0.15
	1	2.7	4	0.50	1	4.5	28	2.80
2	2	7.2	16	1.78	2	9.2	41	4.10
	3	12.0	22	2.20	3	15.6	35	3.50
	1	2.7	0	0.00	1	4.5	3	0.30
3	2	7.2	1	0.14	2	9.2	7	0.70
	3	12.0	7	1.00	3	15.6	6	0.60
	1	2.7	4	0.17	1	4.5	32	1.04
TOTAL	2	7.2	17	0.64	2	9.2	51	1.65
	3	12.0	29	1.07	3	15.6	44	1.42
			50				127	

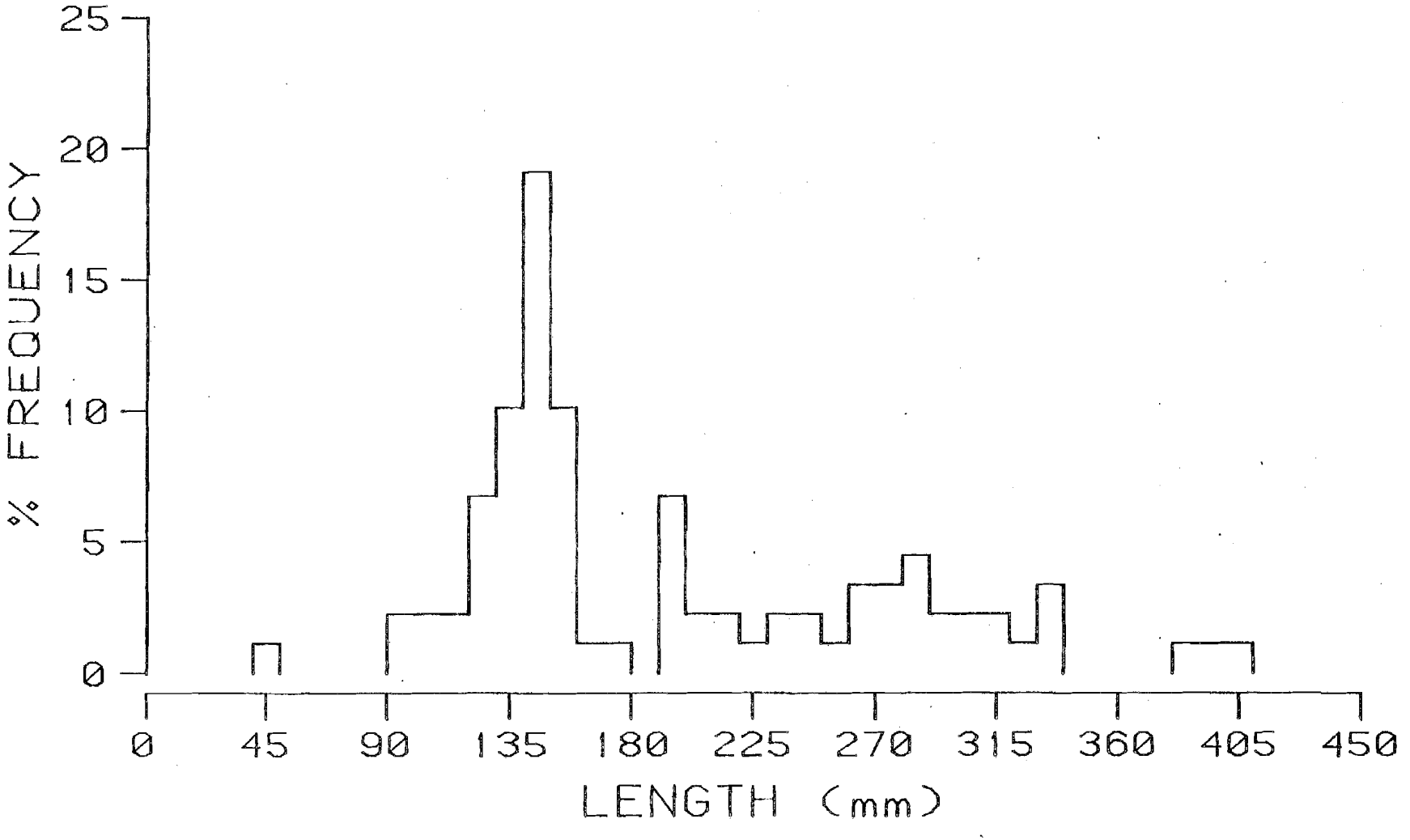

Figure E.3.8.3. Length frequency composition of Dolly Varden captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

Table E.3.8.2. Dolly Varden, summary of tagging data on the Susitna River between Cook Inlet and Devil Canyon, May to October, 1981.

Susitna River Reach	Tagging Periods	NUMBER OF FISH TAGGED			
		Fishwheel	Habitat Locations	Selected Fish Habitats	Total
Cook Inlet to Talkeetna	5/1-5/15	0	2	0	2
	5/16-5/31	0	0	0	0
	6/1-6/15	0	0	0	0
	6/16-6/30	0	11	0	11
	7/1-7/15	0	12	0	12
	7/16-7/31	0	5	0	5
	8/1-8/15	0	11	0	11
	8/16-8/31	0	0	0	0
	9/1-9/15	1	0	0	1
	9/16-9/31	0	2	3	5
	Subtotal	1	43	3	47
Talkeetna to Devil Canyon	5/1-5/15	0	0	0	0
	5/16-6/31	0	0	0	0
	6/1-6/15	0	0	0	0
	6/16-6/30	0	0	0	0
	7/1-7/15	0	0	0	0
	7/16-7/31	0	0	0	0
	8/1-8/15	0	0	0	0
	8/16-8/31	2	0	0	2
	9/1-9/15	3	1	0	4
	9/16-9/30	0	2	4	6
	Subtotal	5	3	4	12
	TOTALS	6	46	7	59

3.9 THREESPINE STICKLEBACK

3.9.1 Abstract

Threespine stickleback, Gasterosteus aculeatus L., were widespread and abundant at habitat locations in the Susitna River below Devil Canyon during the early summer. The catch in minnow traps at habitat locations generally declined after late June. The 28,953 sticklebacks captured during the course of this study were collected at 37 of the 44 habitat locations. The highest catches per unit effort were recorded at Slough 6A (R.M. 112.3), Alexander Creek (R.M. 10.1), Kroto Slough (R.M. 30.1) and Sunshine Creek (R.M. 85.7). Threespine sticklebacks were caught at a site two miles below the confluence of Portage Creek (R.M. 146.9), which is fifty miles further upriver than previously reported. Total lengths of fish captured ranged from 18 to 96 mm with a mean of 79 mm. Length frequency analysis showed the presence of 0+, I+, and II+ age classes.

3.9.2 Introduction

The threespine stickleback, Gasterosteus aculeatus L., is widely distributed in the northern hemisphere with the exception of the arctic coasts of Siberia and North America (Scott and Crossman, 1973). It occurs in both fresh and salt water and usually is not found more than a few hundred kilometers from the coast. In Alaska, the threespine stickleback occurs in all coastal areas from Dixon Entrance to Bristol Bay, on the Seward Peninsula, on St. Lawrence Island, and in Simpson Lagoon on the arctic coast (Morrow, 1980).

Three forms are generally recognized within the Gasterosteus aculeatus complex (McPhail and Lindsey, 1970). There is a partially plated freshwater form (called leiurus), a heavily plated marine form (trachurus), and an intermediate form (semiarmatus).

Threespine stickleback generally inhabit shallow areas in bays, estuaries, and rivers, often in association with aquatic vegetation. Wintering areas tend to be in deeper waters. Stickleback feed mainly on small crustaceans and insects and are fed upon themselves by birds and other fish. There has been concern regarding the threespine stickleback as a potential competitor with sockeye salmon (Oncorhynchus nerka) fry but recent studies (Cannon, 1981; Wooton, 1976) have indicated that competition to the detriment of sockeye fry does not often occur. There is evidence, in artificial situations such as the reclamation and re-stocking of lakes with stocks of rainbow trout (Salmo gairdneri) not accustomed to sharing habitat with stickleback, that the presence of stickleback may be detrimental to the trout population (Engel, 1971).

Three age classes are present in most populations of threespine stickleback in the summer. Sexual maturity is generally reached at age II but may be reached at age I or even age 0. Breeding occurs in the spring and summer and is characterized by an elaborate courtship ritual in which the strongly territorial male constructs a nest on the bottom, induces a female to deposit eggs within the nest, and then tends the fertilized eggs. The eggs hatch in one to two weeks. Fecundity ranges from 50 to 200 eggs per spawning. Both sexes may spawn more than once during a season. There is often a high mortality after spawning (Cannon 1981; Wooton, 1976).

3.9.3 Methods

Threespine stickleback were collected with minnow traps of either 3.2mm (one-eight inch) or 6.4 mm (one-quarter inch) mesh size baited with salmon eggs and placed at each habitat location. Sticklebacks were also taken by beach seine and dip net. Stickleback captured were measured for total length in millimeters (mm) and then released.

3.9.4 Results and Discussion

3.9.4.1 Distribution and Relative Abundance

The 28,953 threespine sticklebacks collected during this study were captured at 37 (84 percent) of the 44 habitat locations in the Cook Inlet to Devil Canyon reach of the Susitna River, from Alexander Creek (RM 10.1) to the Mainstem Su Island Site (RM 146.9). The fish captured at R.M. 146.9 represents a range extension from that reported by Scott and Crossman (1973) and Morrow (1980), who indicate a range extending up the Susitna River only to a point below the confluence of the Talkeetna River.

The number of habitat locations producing threespine stickleback was highest in June, 84 percent, and declined steadily to 16 percent in September. This is an indication of movement during spring months for spawning. All habitat locations in the Cook Inlet to Talkeetna reach, except Goose Creek 2, produced stickleback. Twelve of the 17 habitat locations in the Talkeetna to Devil Canyon reach produced catches (Figures E.3.9.1 and E.3.9.2).

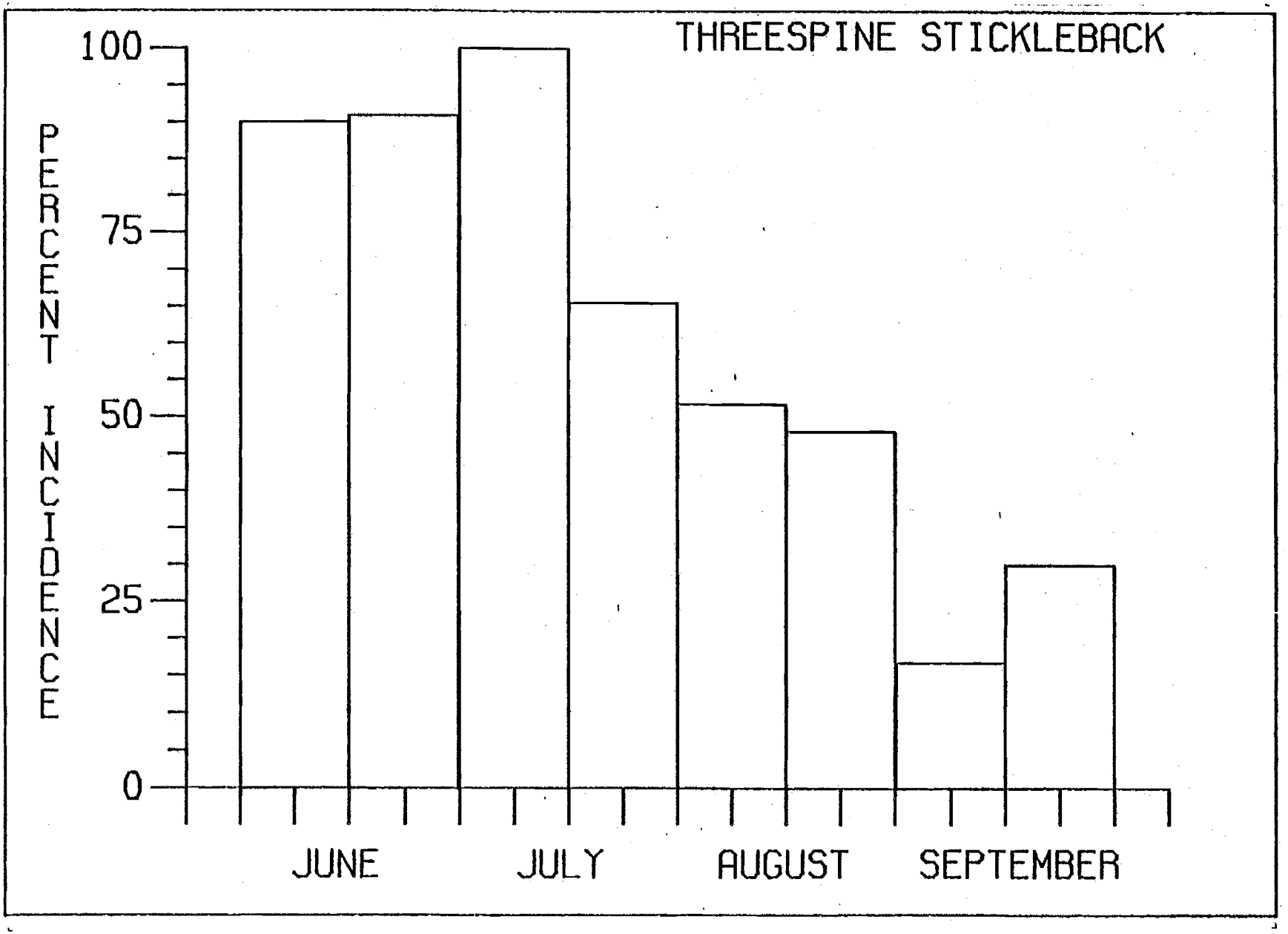

Figure E.3.9.1. Percent incidence of threespine stickleback captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

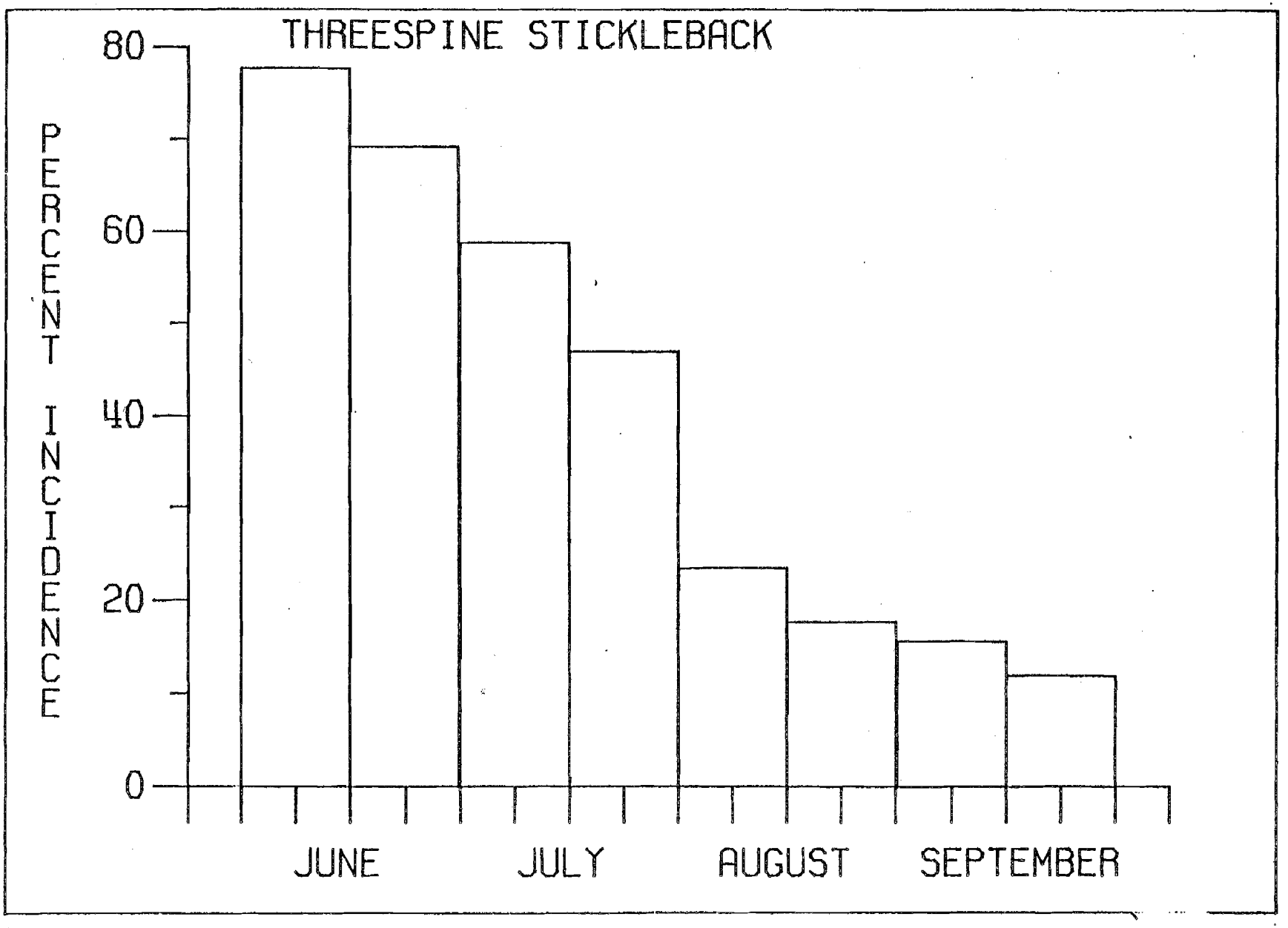

Figure E.3.9.2. Percent incidence of threespine stickleback captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Catch per unit effort rates in the Cook Inlet to Talkeetna reach were higher overall, than those in the Talkeetna to Devil Canyon reach, with as high as 88.4 stickleback per trap at Anderson Creek and 77.3 stickleback per trap at Slough 6A during June (Appendix Table EB-9).

3.9.4.2 Age, Sex, and Length Composition

Total lengths were recorded from 2,273 threespine stickleback. Lengths ranged from 18 to 96mm with a mean of 79.2mm. The length frequency (Figure E.3.9.3) shows the presence of three age classes (0+, I+, and II+) with the length ranges of the respective age classes being 0-40mm, 40-70mm, 70-100mm. Sexually mature stickleback were all in the 70-100mm length range (Age II+). No sex information was collected.

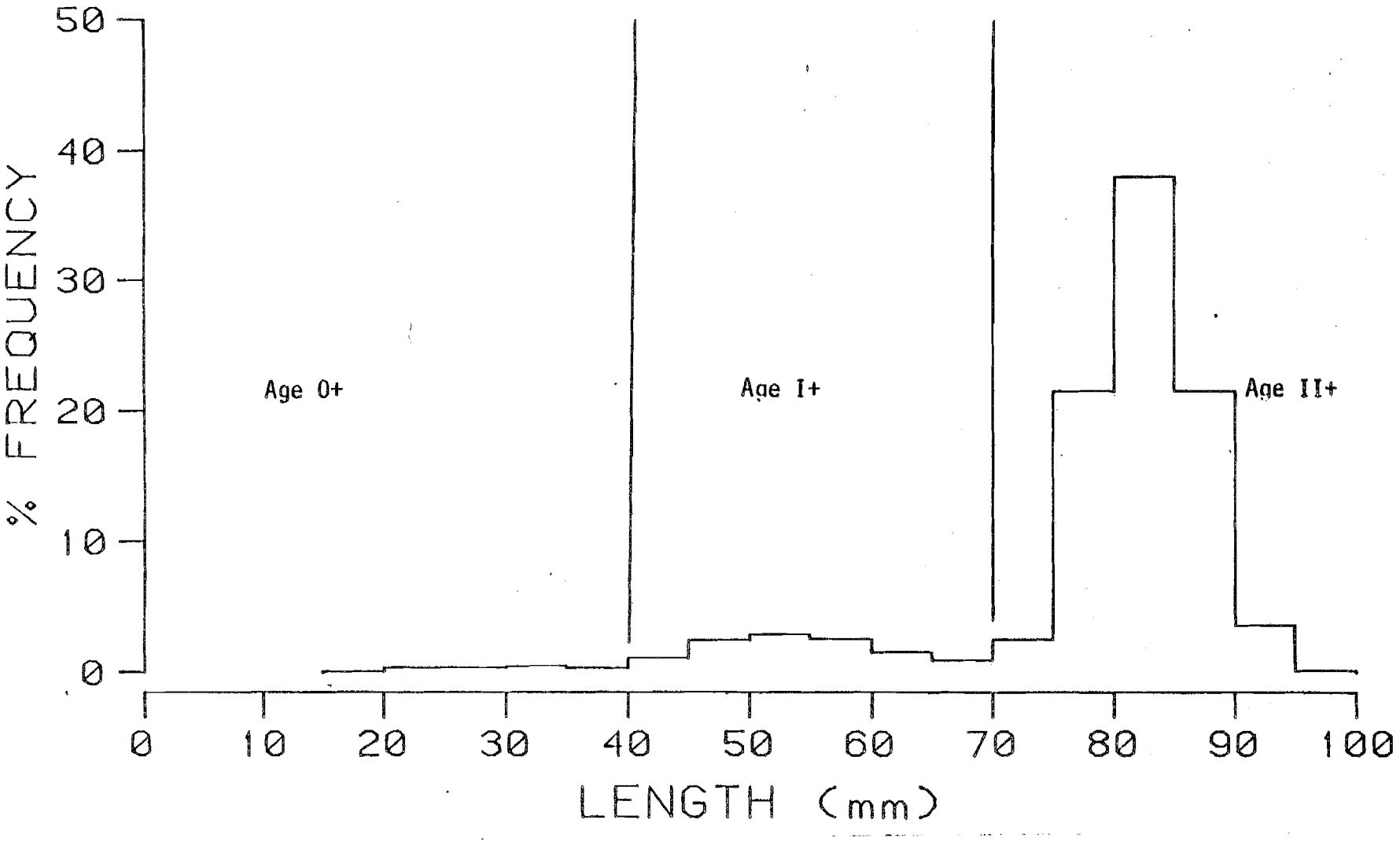

Figure E.3.9.3. Length frequency composition of threespine stickleback captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

3.10 COTTIDS

3.10.1 Abstract

The slimy sculpin, Cottus congnatus Richardson, was captured at 41 of the 44 habitat locations in the Cook Inlet to Devil Canyon reach on the Susitna River. Mouths of clearwater tributaries provided the largest catch per unit effort. Total lengths were measured on 476 slimy sculpins and the mean length was calculated to be 69.7 mm.

3.10.2 Introduction

All sculpin species captured in the Susitna River have been consolidated under the general heading of cottids. The slimy sculpin, Cottus congnatus Richardson, is the major sculpin species found within the Susitna River drainage. There is a possibility that the coastal range sculpin, Cottus aleuticus Gilbert, the sharpnose sculpin, Clinocottus acuticeps Gilbert, and the Pacific staghorn sculpin, Leptocottus armatus Girard, may also be present in the lower Susitna River.

The slimy sculpin range covers all of Alaska, most of Canada, and as far south as Virginia. It also extends to the extreme northeastern reaches of Siberia (Scott and Crossman 1973).

Investigations into the life history of slimy sculpins by Morrow (1980) indicate that these small bottom-dwelling fish are tadpole shaped with a rounded caudal fin and vary in color from solid brown to a mottled gray-green.

Two distinguishing marks are double chinpores and a short lateral line ending midway under the second dorsal fin. Slimy sculpin mature between Age II and IV and can live to Age VII (Craig and Wells, 1976). Spawning occurs in spring at breakup. The male picks the nest site which is usually in shallow water with a sandy substrate. The female lays an average of 150 to 600 eggs. More than one female may spawn in a nest, but only one male will fertilize the eggs. The incubation time for the eggs is about 30 days. Slimy sculpin feed mainly on insect larvae, nymphs, and fish larvae.

3.10.3 Methods

Cottids were collected with baited minnow traps, beach seines and electro-shockers. All but two percent of the cottids captured were caught in minnow traps. All cottid lengths were measured as total length in millimeters (mm).

3.10.4 Results and Discussion

3.10.4.1 Distribution and Relative Abundance

Cottids were captured at 40 (91%) of the 44 habitat locations in the Cook Inlet to Devil Canyon reach of the Susitna River between November, 1980 and October, 1981. The percentage of habitat locations producing catches in the Cook Inlet to Talkeetna reach ranged from a high of 70 percent in late August to a low of 42 percent in late July (Figure E.3.10.1). For the Talkeetna to Devil Canyon reach there was a high of 76 percent in early July and a low of 35 percent in late September (Figure E.3.10.2).

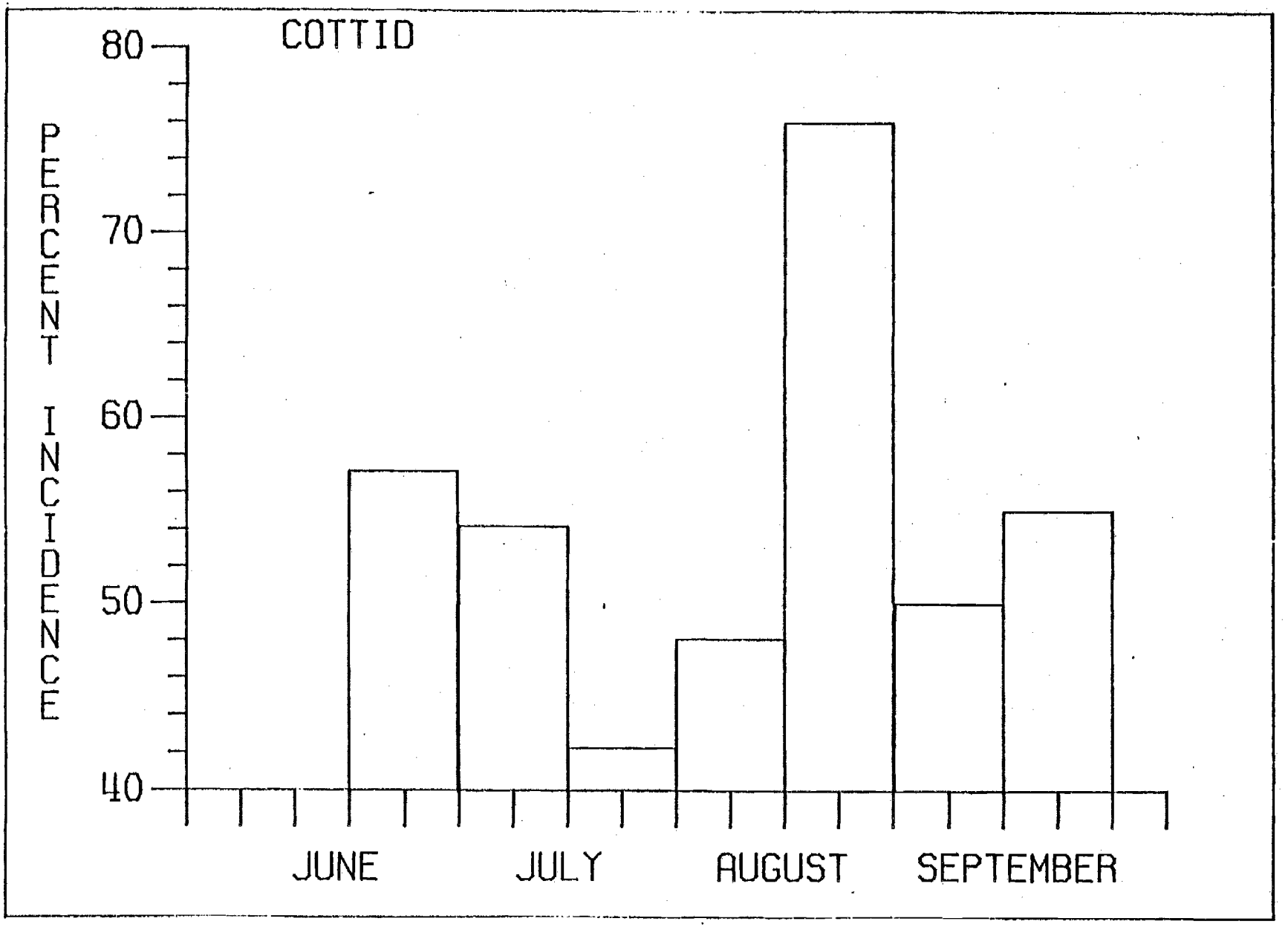

Figure E.3.10.1. Percent incidence of cottids captured at habitat locations on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

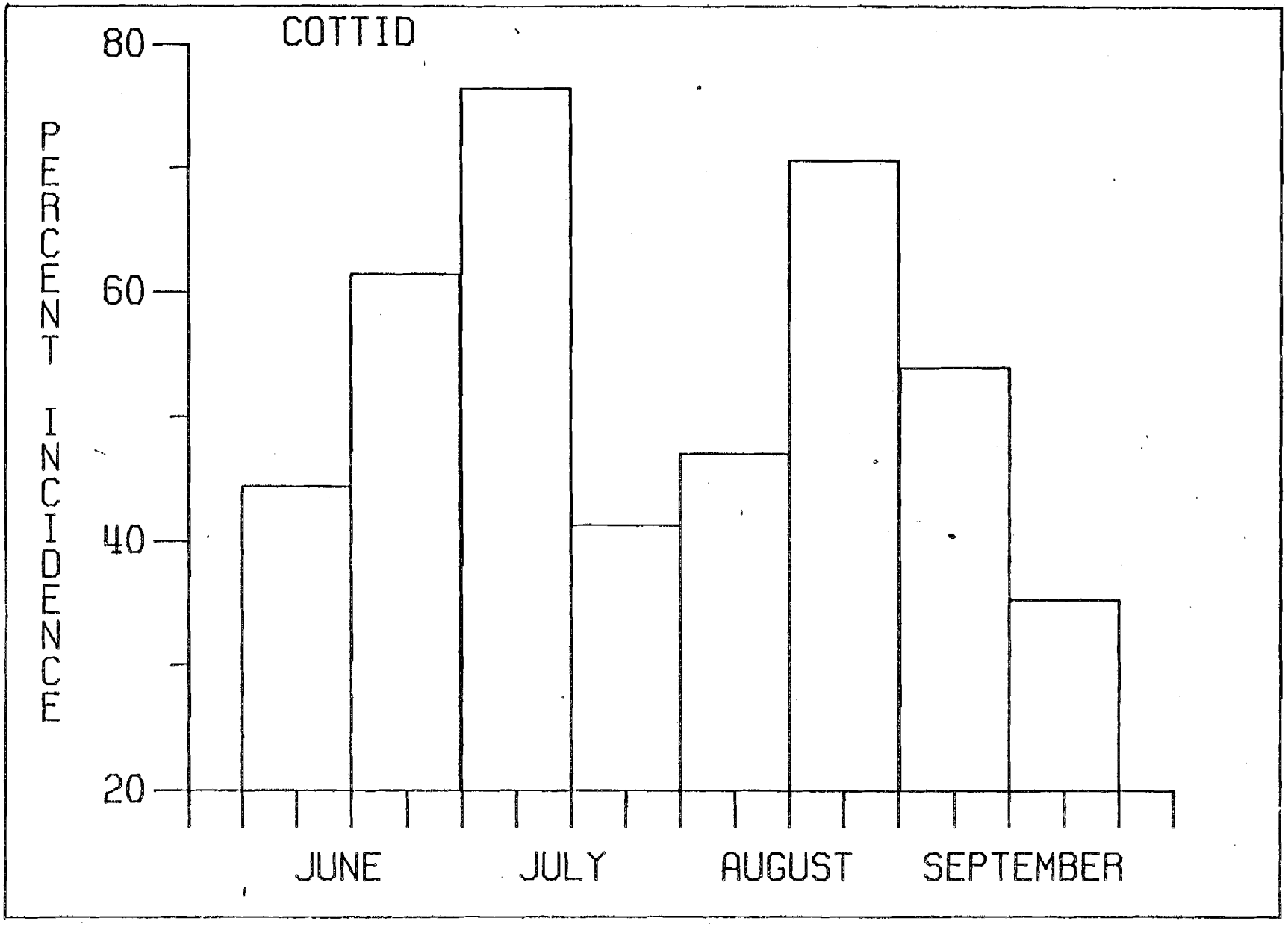

Figure E.3.10.2. Percent incidence of cottids captured at habitat location sites on the Susitna River between Talkeetna and Devil Canyon, June to September, 1981.

Cottid catches per unit effort are shown in Appendix Table EB-10. Habitat locations associated with clearwater tributaries consistently produced the highest catches per unit effort, with a high at Birch Creek (RM 89.2) in early July of 2.0 cottid per trap.

3.10.4.2 Age, Length, and Sex Composition

Total lengths were recorded from 476 cottids. Lengths ranged from 22-118mm, with a mean of 69.7mm. Approximately one half of the specimens examined were in the 65-85mm range with 13 percent in the 70-75mm range (Figure E.3.10.3). No age or sex data was obtained.

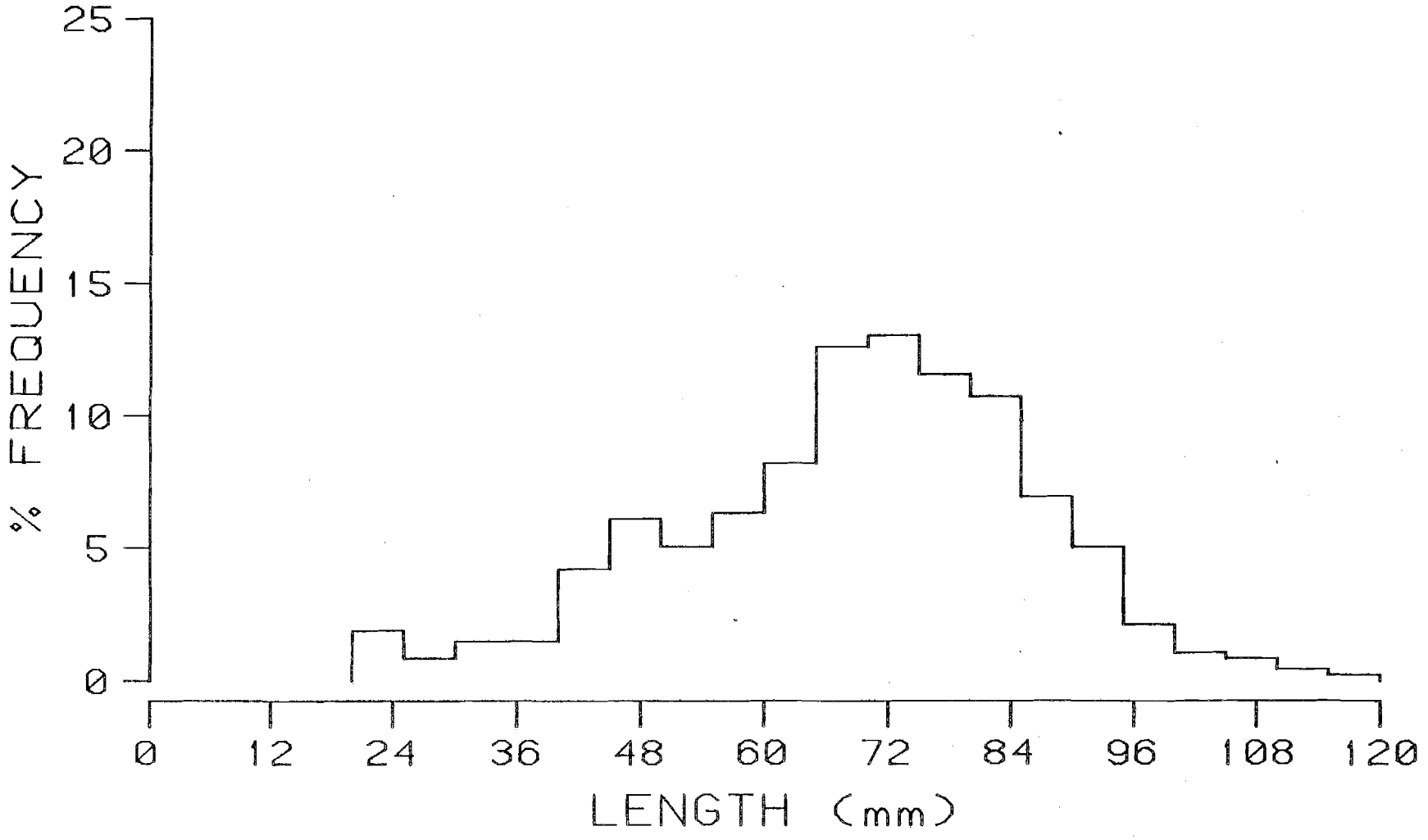

Figure E.3.10.3. Length frequency composition of cottids captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to October, 1981.

3.11 ARCTIC LAMPREY

3.11.1 Abstract

Forty Arctic lamprey, Lampetra japonica Martens, were captured at 14 habitat location sites between Alexander Creek (R.M. 10.1) and Whiskers Creek (R.M. 101.4) during the period June through September. The widest distribution was recorded in early September when lampreys were present at 5 of the 18 habitat locations below Talkeetna. Lengths ranged from 115 to 315 mm. Thirty one percent of the 41 Arctic lampreys captured were greater than 183 mm in length and are presumed to be the anadromous form as the strictly freshwater form does not attain this size.

3.11.2 Introduction

The Arctic lamprey, Lampetra japonica Martens, one of four lamprey species found in Alaska, was observed in studies conducted on the Susitna River in 1981. Pacific lamprey, Entosphenics tridentatus Gairdner, is a strictly anadromous species and has been reported to range into the lower Susitna River (Morrow, 1980). No specimens of this species were observed during this study.

The Arctic lamprey is distributed in Alaska from the Kenai Peninsula north and in the arctic waters of Canada, Norway, Siberia, the Kamchatka Peninsula, Japan, and Korea (Scott and Crossmann, 1973).

The Arctic lamprey is identifiable by a long, cylindrical, eel-like body with seven pairs of gill openings, an oral sucker, and a single median nostril on

the dorsal side of the head. The posterior portion of the body has two dorsal fins and a small anal fin (Morrow, 1980).

Spawning occurs in spring in stream areas of low to moderate flow with both sexes participating in nest building. Females lay up to 100,000 eggs in small gravel substrate. The sex of Arctic lampreys can be determined by visual observation. The male is distinguished by higher dorsal fins, no obvious anal fin, and the presence of genital papilla.

After several weeks in the gravel, the eggs develop into a larvae stage (ammocoete) which spends one to four years burrowed into the soft substrate feeding on microscopic plants and animals (Buchwald, 1968). The ammocoetes undergo metamorphosis in the fall and migrate as young adults to the sea, or to lakes and larger rivers. After an indefinite period, the adults migrate upstream to spawn.

Some populations of Arctic lampreys are composed of both anadromous and completely freshwater forms. The anadromous form is parasitic and attaches itself to the host by an oral sucker, penetrating the scales and skin with its rasping teeth to draw body fluids and blood from the host. Hosts for this species include adult salmon, trout, whitefish, ciscoes, longnose suckers, burbot, and threespine stickleback (Heard, 1966). The freshwater form has been reported as parasitic (Heard, 1966) and non-parasitic (McPhail and Lindsey, 1970).

The freshwater form of Arctic lamprey rarely exceeds 180 mm in length. The anadromous form in the United States reaches up to 410 mm in length while individuals 625 mm long have been reported in the USSR (Scott and Crossmann, 1973).

3.11.3 Methods

All arctic lamprey were captured in minnow traps baited with preserved salmon roe. Catch per unit effort values are expressed as catch per trap day.

3.11.4 Results and Discussion

3.11.4.1 Distribution and Relative Abundance

Forty-one Arctic lamprey were captured at 14 habitat location sites, between RM 10.1 and RM 101.4, sampled from November, 1980, through September, 1981. Table E.3.11.1 presents the catch per unit effort for Arctic lamprey by habitat location site and date for those sites which captured this species. Rustic Wilderness (RM 58.1) was the only habitat location site to produce Arctic lamprey during the winter surveys. One lamprey was captured at this site. All other lamprey were collected during the summer surveys.

The highest catch was recorded at Whiskers Creek (RM 101.4) in early July where 0.5 lampreys per trap were captured. It is presumed that these lampreys were all ammocoetes as they had an estimated length of 70 mm, and all were captured in a single trap which had become buried in the silt. Figure E.3.11.1 presents the percent of habitat location sites sampled between Cook

Table E.3.11.1. Arctic lamprey, catch per unit effort at habitat location sites on the Susitna River, January to September, 1981.

Habitat Location Site	River Mile	Study Period	N	Catch per trap day
Rustic Wilderness	58.1	January	1	0.1
Alexander Creek A	10.1	June 1-15	2	0.2*
Montana Creek	77.0	June 16-30	1	0.1
Anderson Creek	23.8	July 1-15	1	0.1
Mid Kroto Slough	36.3	July 1-15	1	0.1
Goose Creek 1	72.0	July 1-15	1	0.1
Whiskers Creek	101.4	July 1-15	10	0.5
Deshka River C	40.6	July 16-31	2	0.1
Montana Creek	77.0	July 16-31	1	0.1
Mainstem Slough	31.0	August 1-15	2	0.1*
Little Willow Creek	50.5	August 16-31	1	0.1
Goose Creek 1	72.0	August 16-31	1	0.1
Montana Creek	77.0	August 16-31	3	0.2
Whiskers Creek	101.4	August 16-31	1	0.1
Alexander Creek B	10.1	September 1-15	2	0.2*
Alexander Creek C	10.1	September 1-15	1	0.1*
Deshka River A	40.1	September 1-15	1	0.1*
Deshka River B	40.6	September 1-15	1	0.1
Little Willow Creek	50.5	September 1-15	7	0.4
Goose Creek 1	72.0	September 16-31	1	0.1

* Arctic lamprey measured greater than 180 mm.

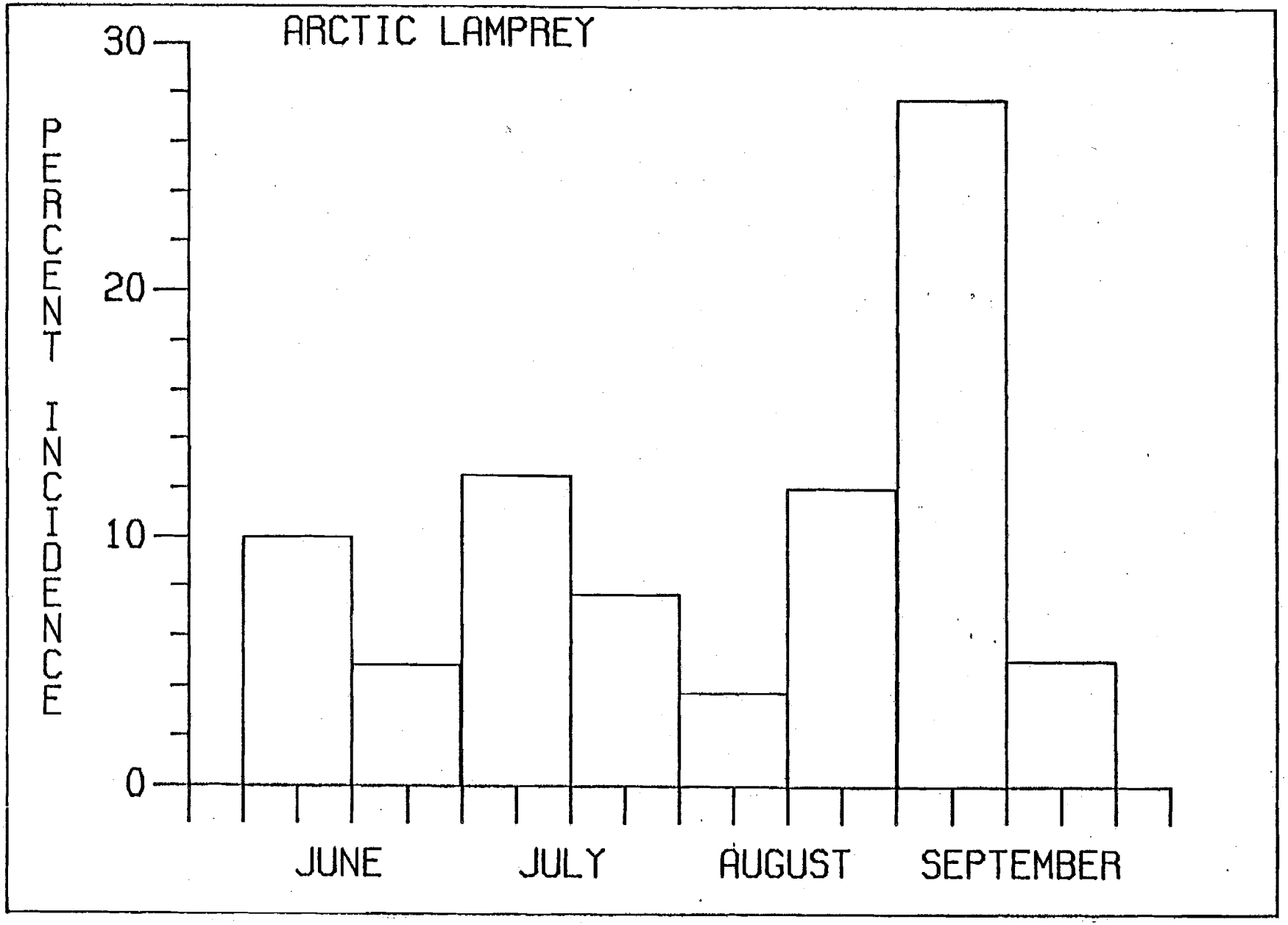

Figure E.3.11.1. Percent incidence of Arctic lamprey captured at habitat location sites on the Susitna River between Cook Inlet and Talkeetna, June to September, 1981.

Inlet and Talkeetna which produced lamprey from June through September, 1981. The highest frequency was recorded during the September 1 to 15 sampling period when 27.8 percent of all sites surveyed produced lamprey. All productive habitat location sites surveys during this period occurred at tributary sites downstream of river mile 50.5. The lowest incidence of capture for this species, 3.7 percent, was observed in the July 16-31 sampling period.

3.11.4.2 Age, Length, and Sex Composition

The percent length frequency distribution for measured Arctic lamprey is presented in Figure E.3.11.2. Thirty-one percent of all Arctic lampreys measured ranged from 183 to 320 mm. This range is above the maximum recorded length for the strictly freshwater stock of Arctic lamprey reported by Scott and Crossmann (1973) and McPhail and Lindsey (1970). It is presumed that these large lampreys were the anadromous form. No necropsies were performed to determine sexual maturity. All lampreys greater than 180 mm in length were captured downstream of river mile 40.6.

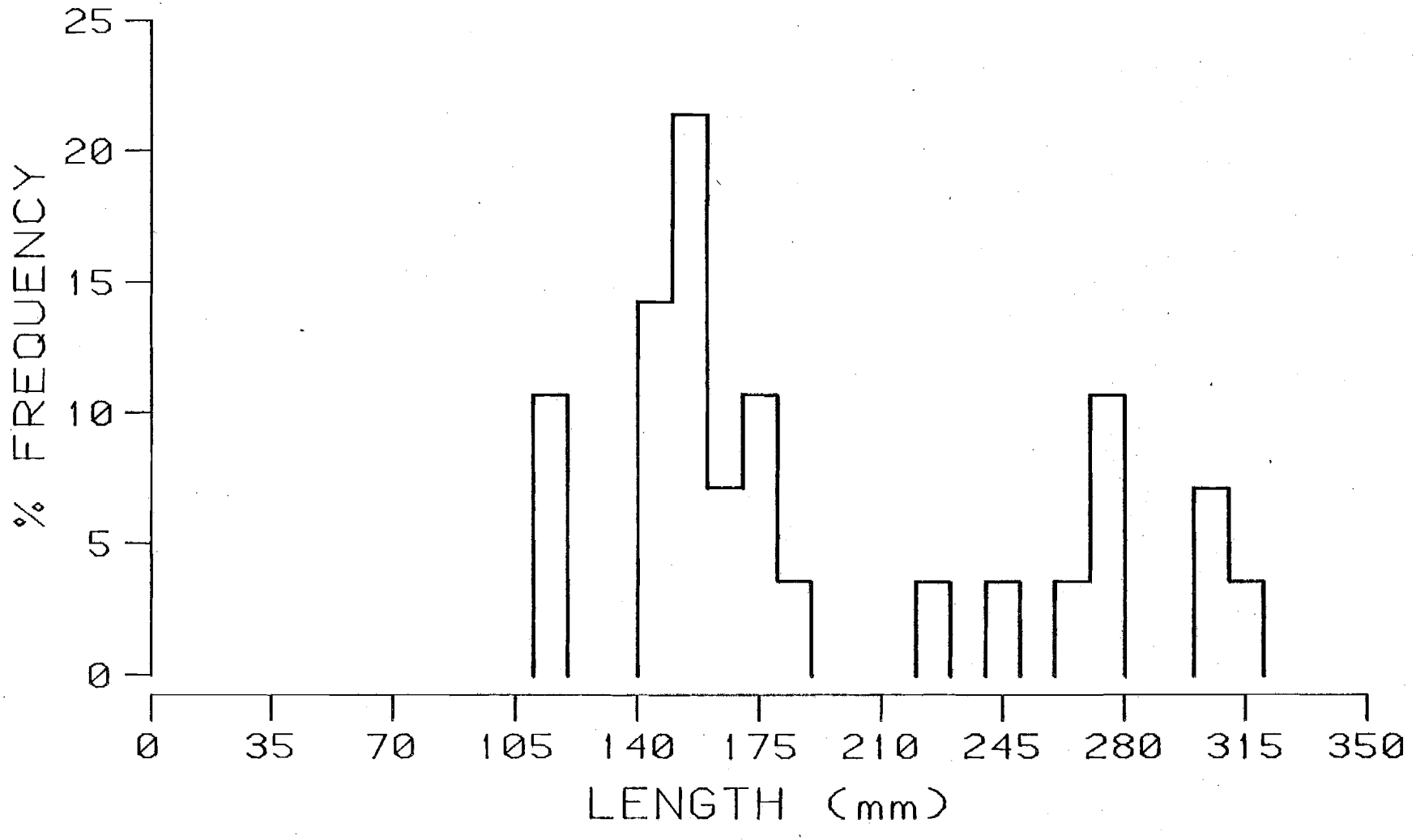

Figure E.3.11.2. Length frequency composition of Arctic lamprey captured at habitat location sites on the Susitna River between Cook Inlet and Devil Canyon, June to September, 1891.

3.12 NORTHERN PIKE

3.12.1 Abstract

One nine year old female northern pike, Esox lucius L., measuring 715 mm fork length was captured in Kroto Slough (R.M. 36.3) on September 11, 1981. Northern pike are expanding their range from the Bulchitna Lake area and this is the first one recorded in the mainstem Susitna River.

3.12.2 Introduction

Northern pike, Esox lucius Linnaeus, is a freshwater fish having a circumpolar distribution in the northern hemisphere and a southern range to Nebraska in the United States and into northern Italy in Europe (Scott and Crossman, 1973). Pike are an important commercial species in Canada and are prized as a sport fish in many other areas.

Northern pike are distinguished by a long, flat, duck-bill snout with a large mouth and sharp teeth, and an extreme posterior positioning of the dorsal and anal fins. Pike characteristically inhabit clear, warm areas of rivers and lakes having low velocities and heavy emergent vegetation.

Spawning occurs immediately following breakup in the spring in heavily vegetated shallow waters of marshes, rivers and lakes. Up to 600,000 demersal, adhesive eggs are randomly scattered and settle on aquatic plants and the substrate. Young pike merge in one to two weeks and feed on zooplankton and small aquatic insects following the absorption of the yolk sac. Small fish

soon enter the diet of juvenile northern pike and become the predominant food source as the pike reach 50 mm in length. Northern pike reach a length of 150 mm by the end of the first summer and this rapid growth continues through the first three years of life. A slower length increase and faster weight increase is observed following sexual maturity. In northern waters, growth rates are less than those recorded in southern areas but an increased longevity is observed (Morrow, 1980). Morrow reports that northern pike have been reported to live up to 26 years and attain weights up to 60 pounds. However he also states that unconfirmed reports of fish weighing up to 170 pounds have been recorded.

Northern pike were illegally transplanted into the Susitna River drainage during the 1950's by private individuals and have been reported in Bulchitna Lake, Hewitt Lake, and Whiskey Lake, in the Yentna River drainage (Kubik, personal communication).

3.12.3 Methods

One northern pike was captured September 11, 1981 in a gillnet set overnight, 500 feet upstream of the mouth in Kroto Slough (RM 30.1).

3.12.4 Results and Discussion

3.12.4.1 Age, Length, and Sex Composition

The northern pike captured was a female measuring 715 mm fork length. Scale analysis indicated the fish to be nine years old. This is the first northern pike recorded in the mainstem Susitna River. They have been expanding their range from the Bulchitna Lake area in recent years.

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
JAN	x	x	o	o	o	o	o	o
MAR	x	x	x	o	o	o	o	o
E JUN	x	o	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
JAN	o	x	o	o	o	o	o	o
MAR	x	x	x	x	o	o	o	o
E JUL	x	x	o	x	o	o	o	o
L JUL	x	x	o	x	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o

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o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	x	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	x
L AUG	x	x	o	o	o	o	o	x
E SEP	x	x	x	o	x	o	o	o
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	x	o	o	o	o	o
E SEP	x	x	x	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

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Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	x	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E JUN	x	o	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
E SEP	x	x	o	o	o	o	o	o

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SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E JUL	x	x	x	o	x	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
L AUG	x	x	x	o	x	o	o	o
E SEP	x	x	o	o	x	o	o	o
L SEP	x	x	x	o	o	o	o	o
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
MAR	x	x	x	o	o	o	o	o
MAY	o	o	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAR	x	x	x	o	o	o	o	o
MAY	x	o	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	x	o	o	o	o
L SEP	x	x	x	o	o	o	o	o
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
MAR	x	x	o	o	o	o	o	o
MAY	o	o	x	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lower Delta Island, R.M. 44.0, S/19N/05W/19/ACB								
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
MAR	x	x	x	o	o	o	o	o
L JUN	x	x	o	x	o	o	o	o
E JUL	x	x	o	x	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	x	o
L AUG	x	x	o	o	o	o	x	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o

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Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
NOV	x	o	o	o	o	o	o	o
JAN	x	x	o	o	o	o	o	o
MAR	x	x	x	o	o	o	o	o
MAY	x	x	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	x	o	o	o	o	o
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
NOV	x	o	o	o	o	o	o	o
DEC	x	x	o	o	o	o	o	o
MAY	o	o	o	o	o	o	x	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	x	o	x	o	x	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	o	o
E OCT	o	o	o	o	o	x	o	o

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SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Caswell Creek, R.M. 63.0, S/21N/04W/06/BDD								
NOV	x	o	o	o	o	o	o	o
MAY	x	o	x	x	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o
E OCT	o	o	o	o	o	x	o	o
Slough West Bank, R.M. 65.6, S/22N/05W/27/ADC								
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

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SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
DEC	x	x	o	o	o	o	o	o
JAN	x	x	o	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	o	o
E OCT	o	o	o	o	o	x	o	o
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	x	o	x	o	x	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	x	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o
E OCT	o	o	o	o	o	x	o	o
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
FEB	x	x	x	o	o	o	•o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
NOV	x	o	o	o	o	o	o	o
FEB	x	x	x	o	o	o	o	o
MAR	x	x	o	o	o	o	o	o
MAY	x	x	o	x	o	o	o	x
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o
E OCT	o	o	o	o	o	x	o	o
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
NOV	x	o	o	o	o	o	o	o
JAN	o	x	o	o	o	o	o	o
FEB	x	x	o	o	o	o	o	o
MAR	x	x	o	o	o	o	o	o
APR	x	x	x	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	o	o

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Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
NOV	x	o	o	o	o	o	o	o
DEC	x	o	o	o	o	o	o	o
JAN	x	x	o	o	o	o	o	o
FEB	x	o	o	o	o	o	o	o
MAR	x	o	x	o	o	o	o	o
APR	x	o	o	o	o	o	o	o
MAY	x	o	x	x	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

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Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
JAN	x	o	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	o	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	x	o	o
E OCT	o	o	o	o	o	x	o	o
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
JAN	x	x	x	o	o	o	o	o
FEB	x	x	x	o	o	o	o	o
MAR	x	o	x	o	o	o	o	o
E JUN	x	x	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	x	o	o

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Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
DEC	x	x	o	o	o	o	o	o
JAN	x	x	o	o	o	o	o	o
APR	x	x	x	o	o	o	o	o
MAY	x	x	x	x	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o
E OCT	o	o	o	o	o	x	o	o
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
MAY	x	o	x	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o

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Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
JAN	x	x	o	o	o	o	o	o
MAR	o	x	x	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	x	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	x	o	o	o	o
L SEP	x	x	x	o	o	o	o	o
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
FEB	x	x	x	o	o	o	o	o
MAR	x	o	o	o	o	o	o	o
E JUN	x	x	x	x	o	o	o	o
L JUN	x	x	x	x	o	o	o	o
E JUL	x	x	o	x	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	x	o	o	o	o

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o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
MAR	x	x	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	x	o	x	o	o	o
E SEP	x	x	o	o	o	x	o	o
L SEP	x	x	x	o	o	o	o	o
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
MAR	x	x	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	x	o	o	o
E SEP	x	x	o	o	o	x	o	o
L SEP	x	x	o	o	o	o	o	o

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o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
E JUN	x	x	x	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	o	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	x	o	o	o
E SEP	x	x	o	o	o	x	o	o
L SEP	x	x	x	o	o	o	o	o
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
MAR	o	x	o	o	o	o	o	o
APR	x	x	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	x	o	o

Values - x indicate that this gear type was utilized during the sampling period
o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
MAR	x	o	o	o	o	o	o	o
APR	x	o	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
L SEP	x	x	x	o	o	o	o	o

Values - x indicate that this gear type was utilized during the sampling period
o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
JAN	x	o	o	o	o	o	o	o
FEB	x	x	o	o	o	o	o	o
MAR	x	o	o	o	o	o	o	o
APR	x	o	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	x	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	x	o	o	o	o
L SEP	x	x	x	x	o	o	o	o
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
L JUN	x	x	x	o	x	o	o	o
E JUL	x	x	x	x	x	o	o	o
L JUL	x	x	x	x	o	o	o	o
E AUG	x	x	o	x	o	o	o	o
L AUG	x	x	o	x	o	o	o	o
E SEP	x	x	o	x	o	o	o	o
L SEP	x	x	o	o	o	o	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH).
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
JAN	x	x	o	o	o	o	o	o
FEB	x	x	o	o	o	o	o	o
MAR	x	o	o	o	o	o	o	o
APR	x	o	o	o	o	o	o	o
L JUN	x	x	x	o	x	o	o	o
E JUL	x	x	x	x	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	x	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	x	o
L SEP	x	x	x	o	o	o	o	o
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
JAN	x	o	o	o	o	o	o	o
FEB	x	o	o	o	o	o	o	o
MAR	x	o	o	o	o	o	o	o
APR	x	o	o	o	x	o	o	x
L JUN	x	x	o	o	x	o	o	o
E JUL	x	x	o	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o

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o indicate that this gear type was not utilized during the sampling period

Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
JAN	o	x	o	o	o	o	o	o
L JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	x	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
JAN	x	x	o	o	o	o	o	o
FEB	x	x	o	o	o	o	o	o
MAR	x	x	o	o	o	o	o	o
APR	x	x	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	x	o	o	o	o
L JUL	x	x	x	x	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	x	o	o	o	o
E SEP	x	x	x	x	o	o	x	o
L SEP	x	x	x	o	o	x	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
FEB	x	o	o	o	o	o	o	o
MAR	x	o	o	o	o	o	o	o
APR	x	o	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
E JUL	x	x	o	o	x	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	o	o	o	o	o	o
L SEP	x	x	o	o	o	o	o	o
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	o	o	o	o	o
L JUL	x	x	x	o	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	o	o	o	o	o
E SEP	x	x	x	o	o	o	x	o
L SEP	x	x	x	o	o	x	o	o

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Appendix Table EA Sampling effort by habitat location, sampling period, and gear type on the lower Susitna River, 1980-1981.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
FEB	x	x	o	o	o	o	o	o
MAR	x	x	o	o	o	o	o	o
E JUN	x	x	x	o	o	o	o	o
E JUL	x	x	x	x	x	o	o	o
L JUL	x	x	x	x	o	o	o	o
E AUG	x	x	o	o	o	o	o	o
L AUG	x	x	o	x	o	o	o	o
E SEP	x	x	x	x	o	o	x	o
L SEP	x	x	x	o	o	x	o	o

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o indicate that this gear type was not utilized during the sampling period

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
L AUG	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
MAR	0.00	.40	0.00	0.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	-.00	.20	-.00	-.00	-.00	-.00
L JUL	0.00	.30	-.00	0.00	-.00	-.00	-.00	-.00
E SEP	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
L JUN	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	1.00	-.00	-.00	0.00	-.00	-.00	0.00
E SEP	0.00	.50	0.00	-.00	0.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	0.00	0.00	3.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.50	1.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	.50	2.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	2.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	1.00	9.00	-.00	-.00	-.00	-.00	-.00
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E SEP	0.00	.30	0.00	-.00	-.00	-.00	0.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E SEP	0.00	0.00	0.00	-.00	.10	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
E SEP	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	2.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAY	0.00	0.00	.01	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	0.00	.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.30	-.00	2.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	2.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
MAY	0.00	0.00	.70	-.00	-.00	-.00	-.00	-.00
L AUG	.10	.50	-.00	-.00	-.00	-.00	0.00	-.00
E SEP	0.00	.80	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.80	1.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
E JUL	0.00	0.00	0.00	2.30	-.00	-.00	0.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	0.00	-.00
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
MAY	0.00	0.00	0.00	-.00	-.00	-.00	.40	-.00
L JUN	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.05	.30	0.00	-.00	0.00	-.00	0.00	-.00
L SEP	0.00	.50	0.00	-.00	-.00	1.60	-.00	-.00
Caswell Creek, R.M. 63.0, S/21N/04W/06/BDD								
MAY	0.00	-.00	2.00	0.00	-.00	0.00	-.00	-.00
L JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L SEP	0.00	0.00	2.00	-.00	-.00	0.00	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L JUN	0.00	.50	-.00	-.00	-.00	0.00	-.00	-.00
E JUL	0.00	0.00	.75	-.00	0.00	-.00	0.00	-.00
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L JUL	0.00	.30	0.00	-.00	-.00	0.00	0.00	-.00
L SEP	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
E OCT	-.00	-.00	-.00	-.00	-.00	2.70	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
FEB	0.00	.10	0.00	-.00	-.00	-.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
L JUN	.10	0.00	0.00	0.00	-.00	0.00	-.00	0.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
E OCT	0.00	0.00	-.00	-.00	-.00	6.00	-.00	-.00
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
FEB	0.00	.01	-.00	-.00	-.00	-.00	-.00	-.00
E JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
JAN	0.00	.20	-.00	-.00	-.00	-.00	-.00	-.00
MAR	0.00	-.00	.30	-.00	-.00	-.00	-.00	-.00
E JUN	0.00	0.00	1.00	0.00	-.00	-.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
E JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	-.00	-.00	-.00	7.10	-.00	-.00
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
E JUL	0.00	.50	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
MAY	0.00	0.00	.70	0.00	-.00	-.00	-.00	-.00
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
E JUL	0.00	.50	0.00	-.00	-.00	0.00	-.00	-.00
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
JAN	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
MAR	-.00	0.00	.30	-.00	-.00	-.00	-.00	-.00
E JUN	0.00	1.00	3.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	1.00	6.00	-.00	-.00	-.00	0.00	-.00
E JUL	0.00	.30	1.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	1.80	-.00	.30	-.00	-.00	-.00	-.00
L SEP	.20	2.50	.70	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
E JUN	0.00	.30	1.50	4.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	1.00	7.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	-.00	0.00	-.00	-.00	-.00	-.00
L AUG	0.00	2.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
L JUN	0.00	.30	0.00	0.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	3.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	1.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	1.00	-.00	0.00	-.00	-.00	-.00
L SEP	.10	1.50	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUN	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	-.00	-.00	0.00	-.00	-.00	-.00
E SEP	.10	.30	-.00	-.00	-.00	12.50	-.00	-.00
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
L JUN	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	0.00	-.00	0.00	12.50	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
APR	0.00	.10	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L SEP	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
L JUN	0.00	0.00	1.50	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.50	1.00	-.00	-.00	-.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUN	0.00	.30	1.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.30	2.00	0.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	-.00	0.00	-.00	-.00	-.00	-.00
L SEP	0.00	.80	0.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
L JUN	0.00	.50	.50	-.00	0.00	-.00	-.00	-.00
E JUL	.20	.50	3.00	1.70	0.00	-.00	-.00	-.00
L JUL	0.00	.50	0.00	0.00	-.00	-.00	-.00	-.00
L AUG	0.00	1.50	-.00	1.30	-.00	-.00	-.00	-.00
E SEP	.10	.30	-.00	.30	-.00	-.00	-.00	-.00
L SEP	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
MAR	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
APR	.10	-.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	3.00	0.00	0.00	-.00	-.00	-.00
E AUG	0.00	0.00	.30	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.80	-.00	-.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
L JUN	0.00	.50	-.00	-.00	0.00	-.00	-.00	0.00
E JUL	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
E JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E JUN	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.30	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	0.00	0.00	2.00	0.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	0.00	.30	-.00	-.00	.50	-.00
L SEP	0.00	.30	0.00	-.00	-.00	3.30	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.01 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for rainbow trout.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
E SEP	0.00	.80	0.00	-.00	0.00	-.00	-.00	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUL	0.00	0.00	.50	0.00	0.00	0.00	0.00	-.00
L AUG	0.00	.30	0.00	0.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	0.00	2.00	-.00	-.00	0.00	-.00
L SEP	0.00	.30	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
E JUL	0.00	0.00	0.00	0.00	1.00	-.00	-.00	-.00
L AUG	0.00	0.00	-.00	-.00	-.00	-.00	-.00	1.00
E SEP	0.00	0.00	0.00	-.00	.30	-.00	-.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E SEP	0.00	0.00	0.00	-.00	.10	-.00	0.00	-.00
L SEP	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
MAY	0.00	0.00	1.60	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	5.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAY	0.00	0.00	1.80	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	-.00	3.00	-.00	-.00	0.00	-.00
L SEP	0.00	.30	2.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
L AUG	.10	0.00	0.00	-.00	-.00	-.00	0.00	-.00
E SEP	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
MAY	0.00	0.00	.50	0.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
MAY	0.00	0.00	-.00	-.00	-.00	-.00	.60	-.00
L JUL	0.00	0.00	0.00	-.00	3.00	-.00	0.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	6.20	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
E JUL	.10	0.00	0.00	0.00	0.00	0.00	0.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	0.00	0.00	-.00
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L SEP	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
E OCT	-.00	-.00	-.00	-.00	-.00	4.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
L SEP	0.00	0.00	3.00	-.00	-.00	0.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
L JUN	.10	0.00	0.00	0.00	-.00	-.00	-.00	0.00
E OCT	0.00	0.00	-.00	-.00	-.00	18.00	-.00	-.00
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
E JUN	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
L SEP	0.00	0.00	0.00	0.00	-.00	7.10	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
APR	.10	0.00	1.00	-.00	-.00	0.00	-.00	-.00
MAY	0.00	0.00	20.00	0.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
MAY	0.00	0.00	2.50	-.00	-.00	0.00	-.00	-.00
L SEP	2.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUN	0.00	0.00	1.50	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	0.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	.30	0.00	-.00	-.00	-.00	-.00
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
MAR	.01	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUL	.30	0.00	0.00	0.00	0.00	0.00	-.00	-.00
E SEP	0.00	0.00	-.00	-.00	0.00	12.50	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
L JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	-.00	-.00	1.00	-.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L JUN	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
L SEP	0.00	0.00	9.00	-.00	-.00	-.00	-.00	-.00
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
E AUG	0.00	.50	0.00	2.00	0.00	-.00	-.00	-.00
L AUG	0.00	0.00	-.00	.30	-.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
E JUL	0.00	.50	0.00	0.00	0.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
L JUN	.10	0.00	0.00	-.00	0.00	-.00	-.00	0.00
L AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E AUG	0.00	.30	0.00	0.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	0.00	.30	-.00	-.00	1.20	-.00
L SEP	0.00	0.00	0.00	-.00	-.00	9.90	-.00	-.00
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
L SEP	0.00	.80	0.00	-.00	0.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.02 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic grayling.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUL	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	.30	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	.10	0.00	.10	-.00	-.00	0.00	-.00	-.00
E JUL	0.00	0.00	0.00	.50	0.00	-.00	-.00	-.00
L JUL	0.00	.50	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.80	-.00	0.00	-.00	-.00	-.00	-.00
E SEP	0.00	.30	0.00	17.00	-.00	-.00	2.50	-.00
L SEP	0.00	.30	0.00	-.00	-.00	6.60	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
MAR	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.50	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	.50	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	2.00	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E AUG	0.00	1.00	0.00	0.00	-.00	-.00	-.00	-.00
L AUG	.30	.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	2.50	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
E JUL	.10	0.00	-.00	-.00	0.00	-.00	-.00	-.00
E AUG	.10	1.00	-.00	-.00	-.00	-.00	-.00	0.00
L AUG	.50	0.00	-.00	-.00	-.00	-.00	-.00	0.00
E SEP	.10	1.30	0.00	-.00	0.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	0.00	.80	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	2.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E JUN	0.00	.30	1.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	1.50	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E JUL	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	1.30	-.00	-.00	-.00	-.00	0.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E SEP	.10	0.00	0.00	-.00	0.00	-.00	0.00	-.00
L SEP	.10	4.00	0.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
MAR	0.00	.60	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	3.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAR	0.00	.10	0.00	-.00	-.00	-.00	-.00	-.00
MAY	.10	-.00	.01	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	0.00	1.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L SEP	.20	2.00	0.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	.20	.80	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	1.30	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	1.50	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lower Delta Island, R.M. 44.0, S/19N/05W/19/ACB								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.50	-.00	-.00	-.00	-.00	0.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
MAR	0.00	0.00	.40	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.80	-.00	0.00	-.00	-.00	0.00	-.00
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
JAN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
L SEP	0.00	.30	0.00	-.00	0.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Caswell Creek, R.M. 63.0, S/21N/04W/06/BDD								
E JUL	0.00	.10	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
Slough West Bank, R.M. 65.6, S/22N/05W/27/ADC								
L AUG	0.00	1.00	0.00	-.00	-.00	0.00	-.00	-.00
L SEP	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
E JUL	0.00	.10	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.50	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
E AUG	0.00	1.30	0.00	-.00	0.00	0.00	0.00	-.00
L AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
FEB	0.00	.40	0.00	-.00	-.00	0.00	-.00	-.00
E JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	.50	0.00	-.00	-.00	-.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
FEB	0.00	.20	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
FEB	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
MAR	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
E JUN	0.00	2.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	.80	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	2.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	3.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	2.50	0.00	-.00	-.00	0.00	-.00	-.00
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
E JUN	0.00	.80	0.00	0.00	-.00	-.00	-.00	-.00
L AUG	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	1.50	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	2.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
L AUG	0.00	2.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	2.30	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	2.00	-.00	-.00	-.00	0.00	-.00	-.00
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
L AUG	0.00	2.00	0.00	-.00	-.00	0.00	-.00	-.00
E SEP	0.00	.50	-.00	-.00	-.00	0.00	-.00	-.00
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
DEC	0.00	1.40	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	.30	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
L JUN	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.80	-.00	-.00	-.00	-.00	-.00	-.00
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUN	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.80	0.00	-.00	-.00	-.00	0.00	-.00
E AUG	0.00	1.30	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	.80	-.00	0.00	-.00	-.00	-.00	-.00
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
L AUG	0.00	.50	0.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
E JUN	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.50	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	.30	0.00	-.00	0.00	-.00	-.00	-.00
E SEP	0.00	1.50	-.00	-.00	-.00	0.00	-.00	-.00
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	1.00	-.00	-.00	0.00	-.00	-.00	-.00
E SEP	0.00	.80	-.00	-.00	-.00	0.00	-.00	-.00
L SEP	0.00	1.00	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
L JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	-.00	-.00	0.00	-.00	-.00	-.00
E SEP	0.00	2.50	-.00	-.00	-.00	0.00	-.00	-.00
L SEP	0.00	3.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
MAR	-.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	1.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	1.30	0.00	-.00	-.00	0.00	-.00	-.00
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L JUN	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
E JUL	0.00	.50	0.00	-.00	-.00	-.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUL	.10	.80	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	0.00	.50	-.00	-.00	-.00	-.00	-.00	-.00
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
E AUG	0.00	.50	0.00	0.00	0.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
L JUN	0.00	.80	0.00	0.00	0.00	-.00	-.00	-.00
E AUG	0.00	.50	0.00	0.00	-.00	-.00	-.00	-.00
L AUG	0.00	.80	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
L JUL	0.00	.30	0.00	-.00	0.00	-.00	-.00	0.00
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
L AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
L AUG	0.00	1.00	0.00	0.00	-.00	-.00	-.00	-.00
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
L JUL	0.00	.50	0.00	0.00	0.00	0.00	0.00	-.00
L AUG	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.03 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for burbot.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUN	0.00	1.50	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	1.80	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	1.50	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	1.80	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	2.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	1.00	1.00	-.00	-.00	-.00	0.00	-.00
L SEP	0.00	.30	0.00	-.00	-.00	0.00	-.00	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
L JUL	0.00	.30	0.00	0.00	0.00	-.00	-.00	-.00
E SEP	0.00	.50	0.00	0.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	0.00	0.00	1.00	0.00	0.00	-.00	-.00	0.00
L JUN	0.00	0.00	10.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	5.00	-.00	-.00	-.00	-.00	-.00
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E SEP	.10	0.00	0.00	-.00	-.00	-.00	0.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
L AUG	0.00	0.00	0.00	-.00	.20	-.00	0.00	-.00
E SEP	.10	0.00	-.00	-.00	.30	-.00	-.00	-.00
L SEP	0.00	0.00	.10	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
MAY	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
L SEP	.10	0.00	1.00	0.00	-.00	-.00	0.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
L AUG	0.00	0.00	0.00	0.00	-.00	-.00	.30	-.00
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
MAY	0.00	0.00	0.00	-.00	-.00	-.00	.50	-.00
L JUL	0.00	0.00	1.00	-.00	5.00	-.00	0.00	-.00
L SEP	0.00	0.00	0.00	-.00	-.00	3.10	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L SEP	0.00	0.00	2.00	0.00	-.00	0.00	-.00	-.00
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
E OCT	0.00	0.00	0.00	-.00	0.00	5.30	0.00	-.00
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
L SEP	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
E OCT	0.00	0.00	0.00	0.00	-.00	4.00	-.00	0.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
E JUN	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.50	-.00	-.00	0.00	-.00	-.00
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
MAR	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
E JUN	0.00	0.00	5.50	0.00	-.00	-.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
E OCT	0.00	0.00	0.00	-.00	-.00	12.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
MAY	0.00	0.00	.30	0.00	-.00	0.00	-.00	-.00
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
L SEP	.20	0.00	0.00	-.00	-.00	0.00	-.00	-.00
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUN	0.00	0.00	5.50	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	5.00	-.00	-.00	-.00	0.00	-.00
L SEP	0.00	0.00	.30	0.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
L JUN	0.00	0.00	5.50	0.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	0.00	2.50	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	1.00	-.00	0.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
E JUN	0.00	0.00	5.00	-.00	0.00	0.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L JUN	0.00	0.00	5.00	-.00	0.00	0.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	20.00	-.00	-.00
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUN	0.00	0.00	5.50	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	1.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
L JUN	0.00	0.00	.50	0.00	0.00	-.00	-.00	-.00
L JUL	0.00	0.00	9.00	0.00	-.00	-.00	-.00	-.00
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
L JUL	0.00	0.00	12.00	-.00	0.00	-.00	0.00	0.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E JUN	0.00	0.00	3.50	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	.50	0.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	0.00	-.00	6.60	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.04 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for round whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E SEP	0.00	0.00	1.00	-.00	0.00	-.00	.30	-.00
L SEP	0.00	.03	0.00	-.00	-.00	2.30	-.00	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	0.00	0.00	12.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	0.00	1.00	0.00	0.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	0.00	-.00	23.30	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
E AUG	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E JUL	0.00	0.00	0.00	1.50	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
E SEP	0.00	0.00	1.00	-.00	.70	-.00	-.00	0.00
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	0.00	0.00	35.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	4.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	3.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E JUL	0.00	0.00	1.00	-.00	.20	-.00	0.00	-.00
L AUG	0.00	0.00	2.00	-.00	0.00	-.00	0.00	-.00
L SEP	0.00	0.00	11.00	-.00	0.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
E SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	4.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAY	0.00	0.00	.60	-.00	-.00	-.00	-.00	-.00
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
MAY	0.00	0.00	.70	0.00	-.00	-.00	0.00	-.00
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L SEP	0.00	0.00	3.00	0.00	0.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
FEB	0.00	0.00	.70	-.00	0.00	0.00	0.00	-.00
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
L JUN	0.00	0.00	.50	0.00	-.00	0.00	-.00	0.00
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
E JUN	0.00	0.00	6.50	0.00	-.00	0.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
L SEP	0.00	0.00	0.00	-.00	-.00	7.10	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
L JUN	0.00	0.00	1.00	0.00	-.00	0.00	0.00	-.00
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
E SEP	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
L JUN	0.00	0.00	4.00	0.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	4.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	1.00	-.00	0.00	-.00	-.00	-.00
L SEP	0.00	0.00	2.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
L JUN	0.00	0.00	1.00	-.00	0.00	0.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
E JUL	0.00	0.00	2.00	0.00	0.00	0.00	-.00	-.00
L SEP	0.00	0.00	2.00	0.00	-.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
L JUL	0.00	0.00	7.00	0.00	0.00	-.00	-.00	-.00
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
L JUL	0.00	0.00	2.00	-.00	0.00	-.00	0.00	0.00

Values= -.00 indicate no sample taken

Appendix Table EB.05 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for humpback whitefish.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E SEP	0.00	0.00	1.00	0.00	0.00	0.00	0.00	-.00
L SEP	0.00	.30	0.00	-.00	-.00	0.00	-.00	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	0.00	0.00	12.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	0.00	0.00	3.30	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.06 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Bering cisco.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E SEP	0.00	0.00	1.00	0.00	0.00	-.00	-.00	0.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
L SEP	0.00	0.00	2.00	-.00	0.00	-.00	0.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
E OCT	0.00	0.00	0.00	0.00	0.00	6.00	0.00	0.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E SEP	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
E JUL	.10	0.00	-.00	-.00	0.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.30	0.00	-.00	-.00	-.00	-.00	-.00	0.00
E SEP	0.00	0.00	5.00	-.00	0.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
L JUN	0.00	0.00	31.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	6.00	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E JUN	.10	0.00	6.50	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
L JUN	0.00	0.00	5.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	7.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E JUL	0.00	0.00	1.00	-.00	0.00	-.00	-.00	-.00
E SEP	0.00	0.00	0.00	-.00	1.60	-.00	0.00	-.00
L SEP	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
MAY	0.00	0.00	.80	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	6.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAY	0.00	0.00	3.90	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	0.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
MAY	0.00	0.00	10.70	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Lower Delta Island, R.M. 44.0, S/19N/05W/19/ACB								
L JUN	0.00	0.00	3.00	-.00	-.00	-.00	0.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
E AUG	0.00	0.00	0.00	0.00	-.00	-.00	.60	-.00
L AUG	0.00	0.00	-.00	-.00	-.00	-.00	.50	-.00
E SEP	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
L JUL	0.00	0.00	1.00	-.00	0.00	-.00	0.00	-.00
Slough West Bank, R.M. 65.6, S/22N/05W/27/ADC								
L SEP	0.00	0.00	5.00	0.00	-.00	0.00	-.00	-.00
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L SEP	0.00	0.00	9.00	-.00	-.00	0.00	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L SEP	0.00	0.00	1.00	-.00	0.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L AUG	.10	.30	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
L SEP	0.00	0.00	2.00	-.00	-.00	0.00	-.00	-.00
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
E JUN	0.00	0.00	1.50	0.00	-.00	0.00	-.00	0.00
L JUN	0.00	0.00	1.50	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	.50	-.00	-.00	-.00	-.00	-.00
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
E JUN	0.00	0.00	11.00	0.00	-.00	0.00	-.00	-.00
L JUL	0.00	.10	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
L SEP	0.00	0.00	0.00	-.00	-.00	14.10	-.00	-.00
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
E JUN	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
MAY	0.00	0.00	1.00	0.00	-.00	0.00	-.00	-.00
E SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
E JUN	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUN	0.00	0.00	3.00	-.00	-.00	-.00	-.00	-.00
L JUN	0.00	0.00	5.50	-.00	-.00	-.00	0.00	-.00
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
L JUN	0.00	0.00	6.50	0.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	3.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	4.50	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	1.00	-.00	0.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUN	0.00	0.00	1.50	-.00	-.00	-.00	-.00	-.00
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
E JUN	0.00	0.00	3.00	-.00	0.00	0.00	-.00	-.00
L JUN	.10	0.00	10.50	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L JUN	0.00	0.00	1.00	-.00	0.00	0.00	-.00	-.00
L SEP	0.00	0.00	2.00	-.00	-.00	40.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L JUN	0.00	0.00	1.50	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
L JUN	0.00	0.00	2.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
L JUL	0.00	.30	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	0.00	3.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUN	0.00	0.00	9.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	0.00	1.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
L JUN	0.00	0.00	1.00	0.00	0.00	-.00	-.00	-.00
L JUL	0.00	0.00	6.00	0.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
L JUN	0.00	.30	0.00	-.00	0.00	-.00	0.00	0.00
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
L JUL	.10	0.00	0.00	0.00	0.00	0.00	0.00	-.00
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUL	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
E SEP	0.00	0.00	1.00	-.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.07 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for longnose suckers.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	0.00	0.00	2.50	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
E SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
L JUN	.20	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	0.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	0.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	0.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
MAR	0.00	0.00	.20	0.00	0.00	-.00	0.00	-.00
L JUL	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
MAY	0.00	0.00	0.00	-.00	-.00	-.00	.40	-.00
L JUN	.60	2.30	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	0.00	.20	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.40	1.50	0.00	-.00	0.00	-.00	0.00	-.00
E AUG	.20	.30	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	.30	1.00	-.00	-.00	1.60	-.00	-.00
Slough West Bank, R.M. 65.6, S/22N/05W/27/ADC								
L SEP	0.00	0.00	1.00	0.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L SEP	0.00	0.00	2.00	-.00	-.00	0.00	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L JUN	0.00	.50	-.00	-.00	-.00	0.00	-.00	-.00
E JUL	0.00	.80	0.00	-.00	0.00	-.00	0.00	-.00
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L JUL	.10	0.00	0.00	-.00	-.00	0.00	0.00	-.00
L SEP	0.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
E AUG	.10	0.00	0.00	0.00	-.00	0.00	-.00	0.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
MAR	0.00	.10	-.00	-.00	-.00	-.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
E SEP	0.00	.30	0.00	0.00	-.00	0.00	-.00	-.00
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
L JUL	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
E JUL	.10	0.00	0.00	0.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUN	0.00	.30	0.00	0.00	0.00	0.00	0.00	-.00
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
E JUN	0.00	.50	0.00	-.00	0.00	0.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L JUN	0.00	0.00	.50	-.00	0.00	0.00	-.00	-.00
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L SEP	0.00	.30	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTGH)
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUN	0.00	0.00	.50	-.00	-.00	-.00	-.00	-.00
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
L AUG	0.00	0.00	0.00	.30	0.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
E AUG	.10	0.00	0.00	0.00	0.00	-.00	-.00	-.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E JUN	0.00	0.00	.50	-.00	0.00	-.00	0.00	0.00
E SEP	0.00	0.00	0.00	0.00	-.00	-.00	.20	-.00
L SEP	0.00	.30	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.08 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Dolly Varden.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	0.00	0.00	2.50	-.00	0.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
E JUN	68.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	36.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	1.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E JUL	34.70	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	7.60	0.00	-.00	0.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
L JUN	55.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	28.90	0.00	-.00	-.00	.30	-.00	-.00	-.00
L JUL	1.00	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	0.00	0.00	-.00	-.00	-.00	-.00	-.00	19.30

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUN	88.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	37.00	0.00	1.00	-.00	-.00	-.00	-.00	-.00
E JUL	49.90	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Kroto Slough Mouth, R.M. 30.1, T.R.M. 2.0, S/17N/07W/01/DBC								
E JUN	59.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	1.60	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	45.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
L JUN	.50	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	6.60	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E JUL	4.00	0.00	0.00	-.00	.60	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
L JUN	19.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	29.00	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
MAY	1.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	39.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	21.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	1.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L SEP	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
E JUL	14.70	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.40	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lower Delta Island, R.M. 44.0, S/19N/05W/19/ACB								
L JUN	1.30	0.00	.50	-.00	-.00	-.00	-.00	-.00
E JUL	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
L JUN	7.50	0.00	0.00	0.00	-.00	-.00	0.00	-.00
E JUL	9.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L JUL	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	0.00	-.00
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
L JUN	2.90	0.00	0.00	-.00	-.00	-.00	0.00	-.00
L JUL	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
L JUN	4.30	0.00	0.00	-.00	-.00	-.00	0.00	-.00
E JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Caswell Creek, R.M. 63.0, S/21N/04W/06/BDD								
MAY	.10	-.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUN	37.80	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	3.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	8.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	1.70	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.70	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.90	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
L JUN	35.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
E JUL	4.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	1.00	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L JUN	3.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	2.50	0.00	0.00	-.00	0.00	-.00	0.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	-.00	-.00	1.00	0.00	-.00
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
E JUL	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
MAY	.10	0.00	0.00	0.00	-.00	0.00	-.00	0.00
L JUN	8.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 1, R.M. 84.0, S/24N/05W/10/DCC								
E JUN	2.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	5.80	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	9.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.60	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
E JUN	44.00	0.00	0.00	0.00	-.00	0.00	-.00	-.00
L JUN	39.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	50.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	18.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	1.00	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	12.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
E JUN	36.70	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	18.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	15.70	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	1.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.40	0.00	-.00	-.00	-.00	0.00	-.00	-.00
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
JAN	.30	0.00	0.00	-.00	-.00	0.00	-.00	-.00
MAR	.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUN	24.70	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	28.80	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	14.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	7.80	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	4.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.40	0.00	-.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
MAY	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E JUN	.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
E JUN	30.90	0.00	0.00	-.00	-.00	0.00	-.00	-.00
L JUN	10.90	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	7.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUN	23.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	8.30	0.00	0.00	-.00	-.00	-.00	0.00	-.00
E JUL	4.60	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	1.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	1.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
MAR	.01	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUN	26.40	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUN	15.80	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E JUL	4.80	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L JUL	9.50	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	1.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	1.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
E JUN	77.30	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUN	64.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	17.80	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.90	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	18.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
E JUN	7.70	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	1.60	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.80	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
E JUN	9.30	0.00	0.00	-.00	0.00	0.00	-.00	-.00
L JUN	5.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	2.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L JUN	1.00	0.00	0.00	-.00	0.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
L JUN	6.50	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	1.70	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.01	0.00	0.00	0.00	-.00	-.00	-.00	-.00
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
E JUL	.30	0.00	0.00	0.00	0.00	-.00	-.00	-.00
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
L JUN	4.00	0.00	0.00	0.00	0.00	-.00	-.00	-.00
E JUL	3.00	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	1.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.40	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L SEP	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.09 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for threespine stickleback.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
L JUN	.70	0.00	-.00	-.00	0.00	-.00	-.00	0.00
E JUL	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
E JUN	2.50	0.00	0.00	0.00	-.00	0.00	0.00	-.00
E JUL	.20	0.00	-.00	-.00	0.00	-.00	-.00	-.00
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
JAN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E JUL	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L AUG	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
L AUG	.20	0.00	-.00	-.00	0.00	-.00	-.00	0.00
E SEP	.10	0.00	0.00	-.00	0.00	-.00	-.00	-.00
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
L AUG	0.00	0.00	0.00	-.00	.60	-.00	0.00	-.00
E SEP	0.00	0.00	-.00	-.00	1.30	-.00	-.00	-.00
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L SEP	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
L JUN	.20	0.00	0.00	0.00	-.00	-.00	0.00	-.00
E JUL	.70	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L JUL	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.30	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	0.00	-.00
L SEP	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Kashwitna River, R.M. 61.0, S/21N/05W/13/AAA								
L JUN	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	0.00	-.00	1.00	-.00	0.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.30	0.00	0.00	-.00	-.00	0.00	-.00	-.00
Caswell Creek, R.M. 63.0, S/21N/04W/06/BDD								
MAY	.40	-.00	0.00	0.00	-.00	0.00	-.00	-.00
L JUN	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Slough West Bank, R.M. 65.6, S/22N/05W/27/ADC								
L SEP	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sheep Creek Slough, R.M. 66.1, S/22N/04W/30/BAB								
E JUL	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
L JUN	.80	0.00	0.00	-.00	-.00	0.00	-.00	-.00
E JUL	1.00	0.00	0.00	-.00	0.00	-.00	0.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	-.00	-.00	1.00	0.00	-.00
Goose Creek 2, R.M. 73.1, S/23N/04W/30/BBB								
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem West Bank, R.M. 74.4, S/23N/05W/13/CCD								
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L SEP	0.00	0.00	0.00	-.00	-.00	12.00	-.00	-.00
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
NOV	.10	-.00	-.00	-.00	-.00	-.00	-.00	-.00
MAY	.10	0.00	0.00	0.00	-.00	-.00	-.00	0.00
L JUN	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.90	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Sunshine Creek, R.M. 85.7, S/24N/05W/14/AAB								
MAR	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
MAY	.60	-.00	0.00	0.00	-.00	-.00	-.00	-.00
E JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Birch Creek Slough, R.M. 88.4, S/25N/05W/25/DCC								
E JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Birch Creek, R.M. 89.2, S/25N/05W/25/ABD								
FEB	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
MAR	.20	-.00	.50	-.00	-.00	-.00	-.00	-.00
E JUN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	2.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	2.00	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	.50	0.00	-.00	-.00	-.00	25.00	-.00	-.00
Cache Creek Slough, R.M. 95.5, S/26N/05W/35/ADC								
MAY	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Cache Creek, R.M. 96.0, S/26N/05W/26/DCB								
E JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUN	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Whiskers Creek Slough, R.M. 101.2, S/26N/05W/03/ADB								
E JUL	.20	0.00	0.00	-.00	-.00	-.00	0.00	-.00
L JUL	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	1.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.30	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.80	0.00	-.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
MAR	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.40	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Slough 6A, R.M. 112.3, S/28N/05W/13/CAC								
E JUN	.10	0.00	0.00	0.00	-.00	-.00	-.00	-.00
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	0.00	-.00	6.00	-.00	-.00	-.00
Lane Creek, R.M. 113.6, S/28N/05W/12/ADD								
L JUN	.20	0.00	0.00	-.00	-.00	0.00	-.00	-.00
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	0.00	0.00	-.00	-.00	1.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	0.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem 2, R.M. 114.4, S/28N/04W/06/CAB								
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	1.00	-.00	-.00	-.00
Mainstem Susitna - Curry, R.M. 120.7, S/29N/04W/10/BCD								
L AUG	0.00	.10	0.00	-.00	-.00	0.00	-.00	-.00
Susitna Side Channel, R.M. 121.6, S/29N/04W/11/BBB								
L AUG	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Gravel Bar, R.M. 123.8, S/30N/04W/26/DDD								
E JUL	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Slough 8A, R.M. 125.3, S/30N/03W/30/BCD								
FEB	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
APR	.30	-.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Fourth of July Creek, R.M. 131.1, S/30N/03W/03/DAC								
L JUN	.10	0.00	0.00	0.00	0.00	-.00	-.00	-.00
E JUL	.10	0.00	0.00	0.00	0.00	-.00	-.00	-.00
L JUL	.20	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	0.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	0.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Slough 10, R.M. 133.8, S/31N/03W/36/AAC								
FEB	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
MAR	.50	-.00	-.00	-.00	-.00	-.00	-.00	-.00
APR	.30	-.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUN	.20	0.00	0.00	-.00	1.00	-.00	-.00	-.00
E JUL	.20	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	-.00	-.00	-.00	-.00	0.00	-.00
Slough 11, R.M. 135.3, S/31N/02W/19/DDD								
APR	.10	0.00	0.00	-.00	0.00	-.00	-.00	0.00
L JUN	.40	0.00	-.00	-.00	0.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L JUL	.50	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Inside Bend, R.M. 136.9, S/31N/02W/17/CDA								
L JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E AUG	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Indian River, R.M. 138.6, S/31N/02W/09/CDA								
E JUL	.40	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E AUG	.20	0.00	0.00	0.00	-.00	-.00	-.00	-.00
E SEP	.10	0.00	0.00	0.00	-.00	-.00	0.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	0.00	-.00	-.00
Slough 20, R.M. 140.1, S/31N/02W/11/BBC								
MAR	.10	-.00	-.00	-.00	-.00	-.00	-.00	-.00
APR	.20	-.00	-.00	-.00	-.00	-.00	-.00	-.00
E JUN	.30	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	-.00	-.00	0.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L AUG	.30	.30	-.00	-.00	-.00	-.00	-.00	-.00
E SEP	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.10 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for cottids.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Susitna - Island, R.M. 146.9, S/32N/01W/27/DBC								
E JUN	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Portage Creek, R.M. 148.8, S/32N/01W/25/CDB								
E JUN	.10	0.00	0.00	-.00	-.00	0.00	0.00	-.00
E JUL	.10	0.00	0.00	0.00	0.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	0.00	-.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.11 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic lamprey.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Alexander Creek Site A, R.M. 10.1, T.R.M. 0.0, S/15N/07W/06/DCA								
E JUN	.20	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Alexander Creek Site B, R.M. 10.1, T.R.M. 2.0, S/16N/07W/32/CCB								
E SEP	.20	0.00	0.00	0.00	-.00	-.00	-.00	-.00
Alexander Creek Site C, R.M. 10.1, T.R.M. 4.0, S/16N/07W/30/ACD								
E SEP	.10	0.00	0.00	-.00	0.00	-.00	-.00	0.00
Anderson Creek, R.M. 23.8, S/17N/07W/29/DDD								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.11 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic lamprey.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Mainstem Slough, R.M. 31.0, S/17N/06W/05/CAB								
E JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Mid-Kroto Slough, R.M. 36.3, S/18N/06W/16/BBC								
E AUG	.10	0.00	0.00	-.00	0.00	-.00	0.00	-.00
Deshka River Site A, R.M. 40.6, T.R.M. 0.0, S/19N/06W/35/BDA								
E SEP	.10	0.00	0.00	-.00	0.00	-.00	-.00	-.00
Deshka River Site B, R.M. 40.6, T.R.M. 1.0, S/19N/06W/26/BCB								
E SEP	.10	0.00	0.00	0.00	-.00	-.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.11 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic lamprey.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Deshka River Site C, R.M. 40.6, T.R.M. 3.5, S/19N/06W/14/BCA								
L JUL	.10	0.00	0.00	-.00	-.00	-.00	-.00	-.00
Little Willow Creek, R.M. 50.5, S/20N/05W/27/AAD								
L AUG	.10	0.00	0.00	0.00	-.00	-.00	0.00	-.00
E SEP	.40	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Rustic Wilderness, R.M. 58.1, S/21N/05W/25/CBD								
JAN	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Goose Creek 1, R.M. 72.0, S/23N/04W/31/BBC								
E JUL	.10	0.00	0.00	0.00	0.00	0.00	0.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L SEP	.10	0.00	0.00	-.00	-.00	0.00	0.00	-.00

Values= -.00 indicate no sample taken

Appendix Table EB.11 Catch per unit effort lower Susitna River habitat locations, 1980-1981, for Arctic lamprey.

SAMPLE	MINNOW TRP (CTCH/TRP)	TROT LINE (CTCH/LNE)	GILL NET (CTCH/24H)	HOOK&LINE (CTCH/HR)	BEACH SN (CTCH/TME)	ELECTRO (CTCH/HR)	GILL DRFT (CTCH/DRF)	DIP NET (CTCH)
Montana Creek, R.M. 77.0, S/23N/04W/07/ABA								
L JUN	.10	0.00	0.00	0.00	-.00	0.00	-.00	0.00
L JUL	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00
L AUG	.20	0.00	-.00	-.00	-.00	-.00	-.00	-.00
Whiskers Creek, R.M. 101.4, S/26N/05W/03/AAC								
E JUL	.50	0.00	0.00	0.00	-.00	0.00	0.00	-.00
L AUG	.10	0.00	-.00	-.00	-.00	-.00	-.00	-.00

Values= -.00 indicate no sample taken