

**AQUATIC ORGANISMS FROM SELECTED SITES
ALONG THE TRANS-ALASKA PIPELINE CORRIDOR,
SEPTEMBER 1970 TO SEPTEMBER 1972**



**U.S. GEOLOGICAL SURVEY
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- Supplement -

by
Jon W. Nauman
and
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ABSTRACT

This report is a supplement to earlier preconstruction studies of benthic invertebrates and water quality at selected sites along the trans-Alaska pipeline corridor. Some of the problems which arose during the course of data collection and analysis are discussed.

Benthic invertebrate abundance and community-structure data are presented for 20 sites along the trans-Alaska pipeline for the period September 1970 to September 1972. In addition, a list of invertebrate taxa identified to various taxonomic levels is given for 42 sites along the pipeline.

INTRODUCTION

This report is a supplement to the preconstruction baseline biological data report on streams along the trans-Alaska oil pipeline corridor by Nauman and Kernodle (1974). Herein are lists of identifiable benthic insect larvae and other miscellaneous invertebrates obtained between September 1970 and September 1972 at 42 sites indicated in figure 1 and table 1. Nauman and Kernodle (1974) have previously reported the seasonal abundance and identities of the various aquatic organisms only by general groupings; the insect larvae were separated only to ordinal or family taxonomic level.

Methods of collection were described by Nauman and Kernodle (1974). The reader is directed to Ward and Wipple (1966), and Usinger (1968), for the taxonomic classification. In addition, the following references were used for identification: Hamilton, Saether, and Oliver (1969), Mason (1973), Pennak (1953), Peterson (1970) and Saether (1970).

Data from Nauman and Kernodle (1974, 1976) indicate that rock-filled baskets collected more taxa and more individuals than other artificial substrate samplers used in Alaskan waters; therefore, because one sample of this type is considered to be adequately representative of the community, and in order to reduce the number of samples to be analyzed, only one rock-basket sample for each collection period at each of 20 stream sites along the corridor is included (table 2). Additional stream sites included in this report were sampled by other methods. The taxonomic lists are therefore not exhaustive or strictly comparable.

In addition to these samples, a list of insects collected in drift net, dip net and 10-rock samples from seven Atigun River sites and five Dietrich River sites is given in table 3. This set of samples represents a separate study of drainages in the Brooks Range. The goal of this study was to compare the benthic communities in two mountain streams, one flowing northward and one flowing southward from the Continental Divide in the Brooks Range; and an effort was made to identify the entire benthic community more precisely than had been done previously. Analysis of these samples required approximately 2 man years; to do comparable work on all the pipeline samples would have taken more time than was available.

The level of taxonomic identification possible for any sample was dependent on the ease with which distinguishing characteristics could be noted. Alaskan freshwater invertebrates are not widely known, and suitable taxonomic keys are not generally available. Also influencing the precision of identification was age class; early instars of invertebrates could be identified only to the order, family or subfamily level. Furthermore, if organisms collected were in a poor state of preservation, the task of identification was made more complicated, often resulting in an ordinal classification only.

Unpublished data of the Geological Survey and reports by Hynes and others (1974) and Rosenberg and Snow (1975) indicate that insect larvae belonging to the family Chironomidae (Diptera) are the most prevalent members of the benthic community of northern climates, usually comprising more than 70 percent of the identified community. Also present are other dipterans as well as members of the orders Ephemeroptera, Trichoptera, and Plecoptera; at times these make up a sizable part of the benthic community. Because these forms are the most common and represent the truly aquatic insects, only these groups were identified to the genus level in the rock-filled basket samples. Table 2 indicates the seasonal organism abundance, community composition and number of taxa of benthic insecta larvae collected by these samplers.

Table 3 presents information on organism abundance and community structure for benthic invertebrates collected in drift net, dip net and 10-rock samples (combined) from the Atigun and Dietrich River sites during one sampling period (Slack, Nauman and Tilley, 1976; Slack, Nauman and Tilley, unpub. data). These data and those from table 2 describe baseline preconstruction conditions in the pipeline corridor.

Table 4 lists taxa to the indicated identification levels noted at 42 sites. These identifications were obtained from additional partially analysed samples collected by other techniques (Nauman and Kernodle, 1974). Although these analyses are incomplete, they are included in this report in order to show more fully the distribution of various benthic invertebrate groups along the pipeline corridor.

DISCUSSION OF DATA BASE

Information herein will be useful in comparing taxonomic lists with those of other sites and with data compiled during pipeline operation. Although some of our data is relatively complete, much is of limited use. The data represent preconstruction conditions for a set of stream sites which were considered to be biologically sensitive and which might provide information with some cross-over value to other streams if affected by construction and operation of the pipeline.

One of the problems we have experienced in trying to manipulate the data is that many of the taxa were identified only to the genus level. We are well aware that in most instances more than one species is present for many of the genera listed - this is particularly true of the Chironomidae - and that one species may differ in ecological requirements and water-quality tolerances from another. It is also quite possible that those genera listed for more than one location may be represented by different species at different sites. Biological characteristics of a particular site cannot, then, be described by the genera present.

At this time, we are unable to say how many species for any one genus are present. Because no accurate count of species is feasible, no attempt has been made to calculate diversity indices. Our data are resented primarily to expand knowledge of Alaskan aquatic invertebrates.

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Table 1.--Geographic coordinates of biological sampling sites
along the trans-Alaska pipeline.

Map No.	Stream site	North Latitude	West Longitude
<u>Arctic climatic zone</u>			
1	Kuparuk River near Deadhorse	70°16'54"	148°57'35"
2	Putuligayuk River near Deadhorse	70°16'08"	148°37'11"
3	Sagavanirktok River near Sagwon	69°05'15"	148°45'10"
4	Happy Creek at Happy Valley Camp near Sagwon	69°08'50"	148°49'50"
5	Atigun River Trib in Atigun Canyon near Galbraith Lake	68°30'22"	149°08'26"
6	Atigun River in Atigun Canyon near Galbraith Lake	68°30'30"	149°08'45"
7	Atigun River below Galbraith Lake	68°27'13"	149°20'56"
8	Atigun River 7 miles above Galbraith Lake	68°21'26"	149°20'00"
9	Atigun River 15 miles above Galbraith Lake	68°15'54"	149°20'49"
10	Atigun River 23 miles above Galbraith Lake	68°11'00"	149°41'32"
11	Atigun River 27 miles above Galbraith Lake	68°07'46"	149°43'51"
12	Atigun River 29 miles above Galbraith Lake	68°07'46"	149°48'51"
<u>Continental climatic zone</u>			
13	Kuyuktuvuk Creek 14 miles above Dietrich River near Wiseman	68°04'00"	149°59'37"
14	Kuyuktuvuk Creek 10 miles above Dietrich River near Wiseman	68°03'08"	149°50'44"
15	Kuyuktuvuk Creek 5 miles above Dietrich River near Wiseman	68°00'00"	149°54'37"
16	Kuyuktuvuk Creek 1 mile above Dietrich River near Wiseman	67°55'38"	149°51'11"
17	Dietrich River below Kuyuktuvuk Creek near Wiseman	67°54'10"	149°59'14"
18	Middle Fork Koyukuk River near Wiseman	67°26'35"	150°03'40"
19	Middle Fork Koyukuk River above Slate Creek	67°15'46"	150°12'16"
20	Minnie Creek near Wiseman	67°25'54"	140°04'55"
21	Wiseman Creek at Wiseman	67°24'38"	150°06'21"
22	Slate Creek near Wiseman	67°15'29"	150°11'05"
23	Prospect Creek at Mouth near Prospect Camp	66°47'37"	150°42'36"
24	Yukon River near Stevens Village	65°52'28"	149°38'33"
25	Hess Creek near Livengood	65°39'55"	149°05'47"
26	Tolovana River near Livengood	65°28'16"	148°15'59"
27	Chatanika River near Olnes	65°03'43"	147°48'27"
28	Caribou Creek near Chatanika	65°09'00"	147°33'05"
29	Chena River near Fairbanks	64°53'32"	147°20'29"

Table 1.--Geographic coordinates of biological sampling sites
along the trans-Alaska pipeline.--Continued

Map No.	Stream site	North Latitude	West Longitude
<u>Continental climatic zone</u> --Continued			
30	Salcha River 8 miles above gage near Salchaket	64°29'10"	146°39'00"
31	South Fork Minton Creek near Salchaket	64°23'41"	146°16'01"
32	Shaw Creek near Delta Junction	64°15'37"	146°06'24"
33	Fish Creek at mile 191 Richardson Highway near Paxson	63°06'08"	145°29'16"
34	Gulkana River 2 miles above gage at Sourdough	62°32'29"	145°32'12"
35	Gakona River at Gakona	62°18'06"	145°18'20"
36	Tazlina River near Glennallen	62°03'20"	145°25'34"
37	Squirrel Creek 2 miles above gage at Tonsina	61°41'17"	145°12'35"
38	Little Tonsina River above Tonsina River near Tonsina	61°35'38"	145°13'14"
39	Stuart Creek near Tiekell	61°15'32"	145°16'54"
<u>Maritime climatic zone</u>			
40	Lowe River at Dayville Road near Valdez	61°05'14"	146°13'00"
41	Solomon Gulch near Valdez	61°04'51"	146°18'12"
42	Allison Creek near Valdez	61°05'07"	146°21'00"

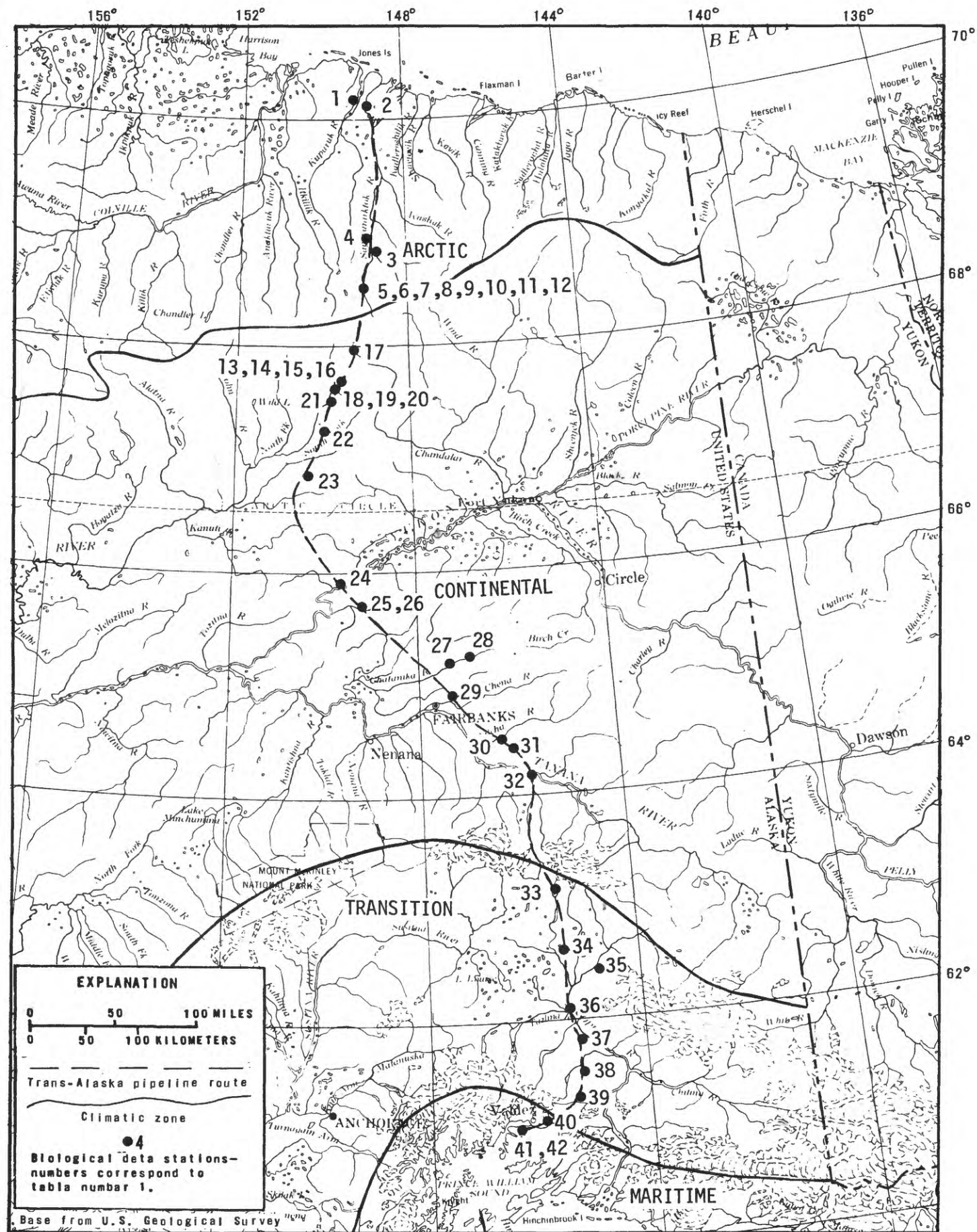


Figure 1.-- Trans-Alaska pipeline corridor showing biological sampling sites and climatic zones.

Taxa	Kuparuk R. nr Dead-horse		Putuligayuk R. nr Deadhorse		Sagavaniktok R. nr Sagwon		Happy C. at Happy Valley Camp nr Sagwon		Minnie C. nr Wiseman		Wiseman C. at Wiseman	
	Map no. 1 6-4-71 to 8-13-71	Map no. 1 8-13-71 to 10-15-71	Map no. 2 6-3-71 to 8-13-71	Map no. 2 8-13-71 to 10-15-71	Map no. 3 6-5-71 to 8-12-71	Map no. 3 8-12-71 to 10-16-71	Map no. 4 8-13-71 to 10-15-71	Map no. 4 6-24-72 to 8-13-72	Map no. 4 6-12-71 to 8-11-71	Map no. 20 6-11-71 to 10-15-71	Map no. 21 6-11-71 to 8-11-71	Map no. 22 8-11-71 to 10-15-71
Diptera												
Chironomidae (midges)												
Ablabesmyia												
Brillia												
Chaetocladius												
Chironomus												
Clunio												
Constempellina												
Corynoneura	2	2	1									
Cricotopus	5	2	5			26						
Diamasa												
Diclotendipes												
Eukiefferiella	13	21	2			18						
Heterotrissocladius												
Lasiodiamasa												
Microtrichotopus												
Microspectra												
Monodiamasa												
Orthocladius												
Paracladopelma												
Paracricotopus												
Parakiefferiella												
Pentaneura												
Phaenopsectra												
Polypedilum												
Potthastia												
Procladius												
Psectrocladius				3								
Psectrotanytus												
Pseudochironomus												
Pseudodiamasa												
Pseudokiefferiella	2											
Pseudosmittia												
Rheotanytarsus	2		5		225	9		170	6	2		
Smittia												
Stempellina								13				
Stictochironomus												
Tanytarsus				1							10	
Thienemannella			1				5					
Tribelos												
Trichocladius	2	1	1									
Trissocladius		5	1									
Unident. immature												
Simuliidae (black flies)												
Prosimulium												
Simulium												
Ephemeroptera (may flies)												
Baetis								4				
Centroptilum										1		
Cinygmula									4			
Ephemerella											12	
Heptagenia					4	4				4	16	
Iron												
Ironopsis												
Pseudocloeon												
Plecoptera (stone flies)												
Alloperla									1			
Brachyptera			1									
Capnia										4		
Clasania					4							
Eucannopsis				1								
Hastaperla												
Isogenus												
Nemoura			14	26	32	4	3	12	12	1	13	4
Pteronarcella			1									
Unident. immature												
Trichoptera (caddis flies)												
Agapetus												
Atopsyche												
Brachycentrus												
Dicosmoecus								56				
Frenesia												
Glossosoma												
Glyptopsyche												
Hydropsyche												
Hydroptilidae												
Platycentropus			2									
Limnephilus												
Pycnopsyche												
Rhyacophila												
Unident. immature												
Number of taxa	6	6	13	3	9	3	6	11	9	7	11	4
Number of individuals	26	32	36	30	1006	50	34	701	290	34	146	32

Table 2.-- Taxa and total numbers of insect larvae (collected with rock basket samplers) presented by season for 20 sites along the trans-Alaska pipeline.

Taxa	State C. nr Wiseman		Hess C. nr Livengood		Tolovana R. nr Livengood		Caribou C. nr Chatanika		Chena R. nr Fairbanks	
	Map no. 22 6-20-72 to 8-11-72	Map no. 22 8-11-72 to 9-7-72	Map no. 25 6-14-71 to 8-10-71	Map no. 25 8-10-71 to 10-14-71	Map no. 25 5-29-72 to 7-30-72	Map no. 26 9-15-70 to 11-11-70	Map no. 28 6-8-71 to 8-10-71	Map no. 28 8-10-71 to 10-13-71	Map no. 29 6-7-71 to 8-8-71	Map no. 29 8-8-71 to 10-11-71
Diptera										
Chironomidae (midges)										
Ablabesmyia	15			10	43					
Brillia							3	22		
Chaetocladius					11					
Chironomus		14			5					
Clinio										
Constempellina		57			5					
Corynoneura				10						
Cricotopus	174	28			5			7		
Diaamesa										
Dicrotendipes										
Eukiefferiella	552	142	23	80	5		5	14	2	
Heterotrissocladius					5				1	
Lasiotriamesa										
Microcritotopus					5					
Micropsectra	15	199				2				
Monodiamesa				10						
Orthocladius				10				7		
Paracladopelma					5					
Paracricotopus										
Parakiefferiella							1			
Pentaneura										
Phaenopsectra					5	2				
Polypedilum				10						
Pothastia										
Procladius					16					
Psectrocladius				20	16					
Psectrotanypus			14							
Pseudochironomus		14								
Pseudodiamesa										
Pseudokiefferiella										
Pseudosmittia									1	
Rheotanytarsus		14	427	120	101					
Smittia		14			5					
Stempellina								2		
Stictochironomus										
Tanytarsus				10	5		1	2		
Thienannella										
Tribelos										
Trichocladius		128								
Trissocladius										
Unident. immature										18
Simuliidae (black flies)										
Prosimulium	185	3								
Simulium	21									
Ephemeroptera (may flies)										
Baetis	4									
Centroptilum										
Cinygmula	15						1			
Ephemerella	12	22		16	12					72
Heptagenia		22			8					1
Iron							1			
Ironopsis	4									
Pseudocloeon	39	14					2			
Plecoptera (stone flies)										
Alloperla										
Brachyptera		2						1		3
Capnia		5								2
Clasania										
Eucapnopsis										
Hastaperla										
Isonurus					4		1	10		1
Nemoura	49	21				2	5	19		9
Pteronarcissa										
Unident. immature										
Trichoptera (caddis flies)										
Agapetus								2		
Atopsyche										
Brachycentrus	2	2	24	8						15
Dicosmoecus										
Frenesia										
Glossosoma										
Glyptopsyche										
Hydropsyche										
Hydroptilidae										
Platycentropus										
Limnephilus					4			6		
Pycnopsyche	1									
Rhyacophila										
Unident. immature										
Number of taxa	14	17	4	11	19	3	4	7	10	3
Number of individuals	1088	701	488	304	265	6	10	14	95	4
										121

Table 2.-- Taxa and total numbers of insect larvae (collected with rock basket samplers) presented by season for 20 sites along the trans-Alaska pipeline--Continued.

Taxa	Salcha R. 8 mi. ab gage nr Salchaket		Shaw C. nr Delta Jn.		Fish C. at mi. 191 Richardson Hwy nr Paxson		Gulkana R. 2 mi. ab gage at Sourdough	
	Map no. 30 6-14-71 to 8-9-71	Map no. 30 8-9-71 to 10-13-71	Map no. 32 6-1-72 to 8-1-72	Map no. 33 5-27-71 to 7-24-71	Map no. 33 5-30-72 to 7-28-72	Map no. 34 4-8-71 to 9-25-71	Map no. 34 5-27-72 to 7-27-72	Map no. 34 5-27-72 to 7-27-72
Diptera								
Chironomidae (midges)								
Abiatismyia						110	43	135
Brillia								45
Chaetocladius			7					45
Chironomus						37		
Clunio								
Constempellina			13	38				
Corynoneura								
Cricotopus				1950	38	132	772	135
Diamesa								
Dicrotendipes			7					
Eukiefferiella			53	217	752	382	5917	812
Heterotrissociolus			7				15	
Lasioidamesa							2578	
Microcratichneumon								
Microcratichneumon			7	433	225	15	772	45
Monodamesa								
Orthocladius			20	650	38			
Paracricotopus								
Parakiefferiella							257	
Pentaneura			7					
Phaenopsectra								45
Polypedilum			33	217			7	406
Pothastia			7					
Procladius			7					
Psectrocladius								
Psectrotanytus						37		
Pseudochironomus								
Pseudodiamesa		21		433	75	176	772	45
Pseudokiefferiella							37	45
Pseudosmittia								361
Rheotanytarsus			53		77			
Smittia							147	
Stempellina								7
Stictochironomus								
Tanytarsus								
Thienemannella				7368				
Tribelos								
Trichocladius			20				37	15
Trissociolus								90
Unident. immature		7				8		90
Simuliidae (black flies)								
Prosimulium		4				8		
Simulium						92	160	
Ephemeroptera (may flies)								
Baetis								8
Centroptilum								
Cinygmula					4			
Ephemerella		24		152	32	56	400	16
Heptagenia							80	100
Iron								60
Ironopsis								
Pseudocloeon								
Plecoptera (stone flies)						4	908	36
Alloperla	1				32			
Brachyptera							32	8
Capnia								12
Claassenia								
Eucapnopsis								
Hastaperla				16				
Isogenus								
Nemoura	1	4		16		4	96	4
Pteronarcissa								
Unident. immature					32			12
Trichoptera (caddis flies)								
Agapetus			4					
Atopsyche							36	4
Brachycentrus		40				64	112	3008
Dicosmoecus							4	384
Frenesia				32	4			
Glossosoma								
Glyptopsycha								
Hydropsyche							96	
Hydroptilidae								12
Platycentropus								
Limnephilus				24				4
Pycnopsycha					4			
Rhyacophila								
Unident. immature								
Number of taxa	2	6	14	11	10	19	15	12
Number of individuals	2	100	245	11476	813	13093	4168	2943

Table 2.-- Taxa and total numbers of insect larvae (collected with rock basket samplers) presented by season for 20 sites along the trans-Alaska pipeline--Continued.

Taxa	Squirrel C. 2.0 mi. ab gage nr Tonsina		L. Tonsina R. ab Tonsina R. nr Tonsina				Stuart C. nr Tietel		Solomon Guich nr Valdez		Allison C. nr Valdez	
	Map no. 37 5-25-71 7-23-71	Map no. 37 7-23-71 9-26-71	Map no. 38 12-2-70 7-21-71	Map no. 38 7-23-71 9-21-71	Map no. 38 5-24-72 7-26-72	Map no. 38 7-26-72 9-21-72	Map no. 38 9-26-70 12-2-70	Map no. 39 9-26-70 12-2-70	Map no. 41 7-22-71 9-23-71	Map no. 42 5-23-72 7-24-72	Map no. 42 5-23-72 7-24-72	Map no. 42 5-23-72 7-24-72
Diptera												
Chironomidae (midges)												
Ablabesmyia			109	23	18					17		
Brillia											285	
Chaetocladius											38	
Chironomus		3									38	
Cunio										17	19	
Constempellina												
Corynoneura												
Cricotopus		3						4		84		
Diamesa											57	
Dicrotendipes												
Eukiefferiella		10	149		63	235	4	13		67	285	
Heterotrissocladius											19	
Lasiodiamesa												
Microcricotopus		1		8	27	4698						
Micropectra												
Monodiamesa												
Orthocladius		21	15	328	23	18		7		117		
Paracladopelma												
Paracricotopus		2									19	
Parakiefferiella												
Pentaneura												
Phaenopsectra					18	235						
Polypedilum												
Pothastia												
Procladius							470					
Psectrocladius												
Psectrotanypus												
Pseudochironomus												
Pseudodiamesa		4	21	109	8	45				50	266	
Pseudokiefferiella		7									57	
Pseudomitia		1	10									
Rheotanytarsus		6				1409						
Smittia												
Stempellina												
Stictochironomus												
Tanytarsus												
Thienemanniella		25			9	705				17		
Tribelos												
Trichocladius		13	109	15	242	1644					76	
Trissocladius												
Unident. immature												
Simuliidae (black flies)												
Prosimulium	6											
Simulium	40	7798		4	8					32		
Ephemeroptera (may flies)												
Baetis												
Centroptilum												
Cinygmula	4								4			
Ephemerella		8				32						
Heptagenia					4	16						
Iron	1											
Ironopsis		6										
Pseudocloeon	322	40								16	16	
Plecoptera (stone flies)												
Alloperla												
Brachyptera						16						
Capnia						16	2					
Clasenia												
Eucapnopsis												
Hastaperla						16						
Isogenus					4							
Nemoura	678	74		4		10						
Pteronarcissa												
Unident. immature												
Tricoptera (caddis flies)												
Agapetus												
Atopsyche												
Brachycentrus												
Dicosmoeus		2									16	
Frenesia												
Glossosoma												
Glyptopsysche												
Hydropsyche												
Hydroptilidae												
Platycentropus												
Limnephilus						16						
Pycnopsysche												
Rhyacophila	43	24										
Unident. immature			16									
Number of taxa	19	11	5	7	11	16	3	3	9	12		
Number of individuals	1190	8147	671	85	465	10176	10	24	417	1153		

Table 2.-- Taxa and total numbers of insect larvae (collected with rock basket samplers) presented by season for 20 sites along the trans-Alaska pipeline--Continued.

Taxa	Map no. 5 8-24-71 Atigun R. trib. in Atigun Canyon nr Galbraith Lk.	Map no. 6 8-24-71 Atigun R. in Atigun Canyon nr Galbraith Lk.	Map no. 8 8-24-71 Atigun R. 2 mi. ab Galbraith Lk.	Map no. 9 8-24-71 Atigun R. 15 mi. ab Galbraith Lk.	Map no. 10 8-24-71 Atigun R. 23 mi. ab Galbraith Lk.	Map no. 11 8-24-71 Atigun R. 29 mi. ab Galbraith Lk.	Map no. 12 8-24-71 Atigun R. 27 mi. ab Galbraith Lk.	Map no. 13 8-23-71 Kuyuktuuk C. 14 mi. ab Dietrich R. nr Wiseman	Map no. 14 8-23-71 Kuyuktuuk C. 10 mi. ab Dietrich R. nr Wiseman	Map no. 15 8-23-71 Kuyuktuuk C. 5 mi. ab Dietrich R. nr Wiseman	Map no. 16 8-23-71 Kuyuktuuk C. 1 mi. ab Dietrich R. nr Wiseman	Map no. 17 8-23-71 Dietrich R. b) Kuyuktuuk C. nr Wiseman
Diptera												
Chironomidae (midges)												
Chaetocladius sp. I				2	6			1		3		5
Chaetocladius sp. II								1				
Diamesa cinerella				33	183	3	128	199	4		1	
Diamesa latitarsis	3	7	2	81	323	43	120	586	34	16	28	4
Diamesa niivorunda			2	9	42	14	58	178	9	2	1	
Diamesa sp. B, (Saethier, 1970)				1	1	4	1	32	3	14	77	5
Diamesa steinböckii				1	46	19	10	59	5	4		
Diamesa sp. III		1	6	84	239	116	349	232	93	50	6	
Diamesa sp. X					2	4						
Eukiefferiella bavarica	16	3	6	59	1				3	26	5	20
Eukiefferiella cyanea		84	44	203	52		1		44	69	17	67
Eukiefferiella spp.	72	5	59	98	13				132	178	231	23
Orthocladius (Euorthocladius) I	7	17	91	537			10	6	99	5	13	
Orthocladius (Euorthocladius) II					41	2	1	3	7	2		2
Orthocladius (Euorthocladius) III										5	2	
Orthocladius s.s.		28	8	40							1	26
Orthocladius spp.												1
Parakiefferiella spp.									4		6	1
Pseudokiefferiella		45	2	28	3	23	50			1		
Thienemanniella spp.	6											
Trichotanytus	6								1			
Simuliidae (black flies)												
Gymnopais dichopticus			5		4	15	6	116				
Prosimulium alpestre	1											
Prosimulium perspicuum	34		3									
Prosimulium												
Empididae (dance flies)				2						1	1	
Deuterophlebiidae (mountain midges)												
Tipulidae (crane flies)												
Dicranota									1	4		1
Helius					1							
Holorusia	1		2				1					
Tipula sp. B		5		1	2					3	1	
Heleidae (biting midges)												
Phoridae (hump-backed flies)								2	1			
Plecoptera (stone flies)												
Arcynopteryx		4	3									1
Capniinae	3		3	33				8	41	11	19	1
Nemoura spp.	181	22	69	178	182		9	27	253	151	180	54
Paraperla or Utaperla										2	5	1
Ephemeroptera (may flies)												
Ameletus												1
Baetis	8	13	5	1								1
Cinygmula									1		1	
Ephemerella (Serrata group)												2
Iron										1		
Pseudocloeon		3								1	5	
Heptageniidae (unident. immature)		46										13
Trichoptera (caddis flies)												
Brachycentrus americanus		29										
Neothremma												4
Coleoptera (beetles)												
Dytiscidae												1
Number of taxa	10	17	16	18	17	10	13	14	18	21	22	21
Number of individuals	303	347	310	1391	1141	243	744	1450	735	549	603	234

Table 3.-- Abundance and community composition of benthic invertebrates collected from seven Atigun River sites and five Dietrich River sites during one sampling period. Composite samples collected from drift net, dip net and 10 rock samples. Map numbers refer to figure #1.

Table 4.--List of invertebrate taxa to the indicated taxonomic levels for 42 sites along the trans-Alaska pipeline between September 1970 and September 1972.

Map No.1 - Kuparuk River near Deadhorse

Phylum: Arthropoda

Class: Crustacea

Order: Copepoda (copepods)

Family: Cyclopidae

genus: *Cyclops capillatus*

Cyclops exilis

Cyclops sp.

Cyclops venustus

Cyclops vernalis

Family: Canthocamptidae

genus: *Attheyella nordenskioldii*

Maraenobiotus insignipes

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Corynoneura*

Cricotopus

Eukiefferiella

Pseudokiefferiella

Rheotanytarsus

Thienemanniella

Trichocladius

Trissocladius

Class: Arachnoidea

Order: Acarina (water mites)

Family: Hygrobatidae

genus: *Hygrobatas*

Family: Lebertiidae

genus: *Lebertia*

Map No. 2 - Putuligayuk River near Deadhorse

Phylum: Mollusca

Class: Gastropoda (snails)

Order: Ctenobranchiata

Family: Valvatidae

genus: *Valvata*

Order: Pulmonata

Family: Planorbidae

genus: *Gyraulus*

Table 4.--Continued

Map No. 2 - Putuligayuk River near Deadhorse--Continued

Phylum: Arthropoda

Class: Crustacea

Order: Cladocera (water fleas)

Family: Chydoridae

genus: *Alona*

Camptocercus

Chydorus

Eurycercus

Family: Daphnidae

genus: *Simocephalus*

Family: Bosminidae

genus: *Bosmina*

Order: Copepoda (copepods)

Family: Temoridae

genus: *Eurytemora composita*

Family: Cyclopidae

genus: *Cyclops capillatus*

Cyclops exilis

Cyclops sp.

Cyclops venustus

Cyclops vernalis

Family: Canthocamptidae

genus: *Attheyella nordenskioldii*

Attheyella illinoisensis

Bryocamptus zschokkei

Maraenobiotus insignipes

Moraria duthiei

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Cardiocladius*

Corynoneura

Cricotopus

Eukiefferiella

Heterotrissocladius

Lasiodiamesa

Micropectra

Orthocladius

Paracricotopus

Pentaneura

Psectrocladius

Rheotanytarsus

Tanytarsus

Trichocladius

Trissocladius

Table 4.--Continued

Map No. 2 - Putuligayuk River near Deadhorse--Continued

- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Baetis*
- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Brachyptera*
 - Eucapnopsis*
 - Nemoura* sp.
 - Nemoura vallicularia*
- Order: Trichoptera (caddis flies)
 - Family: Limnephilidae
 - genus: *Platycentropus*
 - Pycnopsyche*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp.

Map No. 3 - Sagayanirktok River near Sagwon

- Phylum: Arthropoda
 - Class: Crustacea
 - Order: Cladocera (water fleas)
 - Family: Chydoridae
 - genus: *Chydorus*
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Corynoneura*
 - Cricotopus*
 - Diamesa* sp. 1
 - Diamesa* sp. 2
 - Eukiefferiella*
 - Heterotrissocladius*
 - Micropsectra*
 - Orthocladius*
 - Pseudokiefferiella*
 - Rheotanytarsus*
 - Smittia*
 - Family: Simuliidae (black flies)
 - genus: *Prosimulium ursinum*
 - Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Ephemerella*
 - Neocloeon*
 - Pseudocloeon*

Table 4.--Continued

Map No. 3 - Sagavanirktok River near Sagwon--Continued

Family: Heptageniidae
 genus: *Heptagenia*
Order: Plecoptera (stone flies)
 Family: Perlodidae
 genus: *Isogenus*
 Family: Nemouridae
 genus: *Nemoura* sp.
Order: Trichoptera (caddis flies)
 Family: Rhyacophilidae
 genus: *Rhyacophila lobifera*
Order: Collembola (spring tails)
 Family: Poduridae
 genus: *Achorutes*
 Family: Entomobryidae
 genus: *Agrenia*
 Entomobrya
 Proisotoma

Map No. 4 - Happy Creek at Happy Valley Camp near Sagwon

Phylum: Mollusca
 Class: Gastropoda (snails)
 Order: Ctenobranchiata
 Family: Valvatidae
 genus: *Valvata*
Phylum: Arthropoda
 Class: Crustacea
 Class: Crustacea
 Order: Cladocera (water fleas)
 Family: Chydoridae
 genus: *Alona*
 Camptocercus
 Chydorus
 Eurycercus
 Family: Bosminidae
 genus: *Bosmina*
 Order: Copepoda (copepods)
 Family: Diaptomidae
 genus: *Diaptomus franciscanus*
 Family: Cyclopidae
 genus: *Cyclops capillatus*
 Cyclops vernalis
 Family: Canthocamptidae
 genus: *Attheyella nordenskioldii*

Table 4.--Continued

Map No. 4 - Happy Creek at Happy Valley Camp near Sagwon--Continued

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Ablabesmyia*

Brillia

Chironomus

Corynoneura

Constempellina

Eukiefferiella

Heterotrissocladius

Lasiodiamesa

Micropsectra

Paracricotopus

Pseudosmittia

Rheotanytarsus

Smittia

Stempellina

Thienemanniella

Trichocladius

Family: Simuliidae (black flies)

genus: *Simulium aureum*

Simulium vittatum

Oropeza

Order: Ephemeroptera (may flies)

Family: Baetidae

genus: *Baetis*

Pseudocloeon

Order: Plecoptera (stone flies)

Family: Nemouridae

genus: *Nemoura* sp.

Nemoura vallicularia

Order: Trichoptera (caddis flies)

Family: Brachycentridae

genus: *Brachycentrus* sp.

Brachycentrus americanus

Micrasema

Family: Limnephilidae

genus: *Frenesia*

Family: Rhyacophilidae

genus: *Rhyacophila fuscula*

Rhyacophila sp.

Table 4.--Continued

Map No. 4 - Happy Creek at Happy Valley Camp near Sagwon--Continued

Order: Collembola (spring tails)
Family: Poduridae
 genus: *Achorutes*
Family: Entomobryidae
 genus: *Entomobrya*
 Folsomia
 Proisotoma
 Tetracanthella
Class: Arachnoidea
Order: Acarina (water mites)
Family: Hygrobatidae
 genus: *Hygrobat*
Family: Lebertiae
 genus: *Lebertia*

Map No. 5 - Atigun River Tributary in Atigun Canyon near Galbraith Lake

Phylum: Annelida
Class: Oligochaeta (aquatic worms)
Order: Prosopora
Family: Lumbriculidae
Phylum: Arthropoda
Class: Crustacea
Order: Anostraca (fairy shrimp)
Family: Streptocephalidae
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
 genus: *Diamesa latitarsis*
 Eukiefferiella sp.
 Eukiefferiella bavarica
 Orthocladius (Euorthocladius) sp. 1
 Thienemanniella
 Trichotanypus
Family: Tipulidae (crane flies)
 genus: *Holorusia*
Order: Ephemeroptera (may flies)
Family: Baetidae
 genus: *Baetis*
Order: Plecoptera (stone flies)
Family: Nemouridae
 genus: *Nemoura* sp.
 Subfamily: Capniinae (unidentified immature)
Order: Trichoptera (caddis flies)
Family: Brachycentridae
 genus: *Brachycentrus americanus*

Table 4.--Continued

Map No. 5 - Atigun River Tributary in Atigun Canyon near Galbraith Lake--Cont.

Order: Collembola (spring tails)
Family: Entomobryidae
genus: *Agrenia bidenticulata*
Class: Arachnoidea
Order: Acarina (water mites)
Family: Sperchonidae
genus: *Sperchon* sp. 1
Sperchon sp. 2

Map No. 6 - Atigun River in Atigun Canyon near Galbraith Lake

Phylum: Annelida
Class: Oligochaeta (aquatic worm)
Order: Plesiopora
Family: Enchytraeidae
Phylum: Arthropoda
Class: Crustacea
Order: Copepoda (copepods)
Sub-order: Calanoida (unidentified)
Sub-Class: Ostracoda (seed shrimp)
Order: Podocopa
Family: Cypridae
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Diamesa latitarsis*
Diamesa sp. 3
Eukiefferiella sp.
Eukiefferiella cyanea
Eukiefferiella bavarica
Orthocladius s.s.
Orthocladius (Euorthocladius) sp. 1
Pseudokiefferiella
Family: Simuliidae (black flies)
genus: *Prosimulium alpestre*
Prosimulium perspicuum
Simulium arcticum
Family: Tipulidae (crane flies)
genus: *Tipula*
Order: Ephemeroptera (may flies)
Family: Baetidae
genus: *Baetis*
Pseudocloeon
Family: Heptageniidae (unidentified immature)

Table 4.--Continued

Map No. 6 - Atigun River in Atigun Canyon near Galbraith Lake--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Family: Perlodidae
 - genus: *Arcynopteryx* (or *Isogenus*)
 - Family: Chloroperlida
 - genus: *Paraperla* (or *Utaperla*)
- Order: Trichoptera (caddis flies)
 - Family: Brachycentridae
 - genus: *Brachycentrus americanus*
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Agrenia bidenticulata*
 - Isotoma viridis*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1
 - Sperchon* sp. 2

Map No. 7 - Atigun River below Galbraith Lake

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Simuliidae (black flies)
 - genus: *Simulium arcticum*

Map No. 8 - Atigun River 7 miles above Galbraith Lake

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Diamesa latitarsis*
 - Diamesa* sp. 3
 - Diamesa nivoriunda*
 - Eukiefferiella* sp.
 - Eukiefferiella bavarica*
 - Eukiefferiella cyanea*
 - Orthocladius* (*Euorthocladius*) sp. 1
 - Orthocladius* s.s.
 - Pseudokiefferiella*
 - Family: Simuliidae (black flies)
 - genus: *Gymnopais dichopticus*
 - Prosimulium perspicuum*
 - Family: Tipulidae (crane flies)
 - genus: *Holorusia*

Table 4.--Continued

Map No. 8 - Atigun River 7 miles above Galbraith Lake--Continued

- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Pseudocloeon*
- Order: Plecoptera (stone flies)
 - Family: Perlodidae
 - genus: *Arcynopteryx*
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Subfamily: Capniinae (unidentified immature)
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Agrenia bidenticulata*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1
 - Sperchon* sp. 2

Map No. 9 - Atigun River 15 miles above Galbraith Lake

- Phylum: Annelida
 - Class: Oligochaeta (aquatic worms)
 - Order: Plesiopora
 - Family: Tubificidae
 - Order: Prosopora
 - Family: Lumbriculidae
- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Chaetocladius*
 - Diamesa latitarsis*
 - Diamesa* sp. 3
 - Diamesa cinerella*
 - Diamesa nivoriunda*
 - Diamesa steinböcki*
 - Diamesa* sp. B (Saether, 1970)
 - Eukiefferiella* sp.
 - Eukiefferiella cyanea*
 - Eukiefferiella bavarica*
 - Orthocladius* (*Euorthocladius*) sp. 1
 - Orthocladius* s.s.
 - Pseudokiefferiella*
 - Family: Simuliidae (black flies)
 - Family: Empididae (dance fly)

Table 4.--Continued

Map No. 9 - Atigun River 15 miles above Galbraith Lake--Continued

- Order: Ephemeroptera (may flies)
 - Family: Baetinae
 - genus: *Pseudocloeon*
- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Subfamily: Capniinae (unidentified immature)
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Agrenia bidenticulata*
 - Family: Hypogastruridae
 - genus: *Hypogastrura* sp.
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1
 - Sperchon crassipalpa*

Map No. 10 - Atigun River 23 miles above Galbraith Lake

- Phylum: Arthropoda
 - Class: Crustacea
 - Order: Copepoda (copepods)
 - Suborder: Harpacticoida (unidentified immature)
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Chaetocladius* sp. 1
 - Diamesa latitarsis*
 - Diamesa* sp. 3
 - Diamesa cinerella*
 - Diamesa nivoriunda*
 - Diamesa stenböcki*
 - Diamesa* sp. B (Saether, 1970)
 - Diamesa* sp. x
 - Eukiefferiella* sp.
 - Eukiefferiella cyanea*
 - Eukiefferiella bavarica*
 - Orthocladius* (*Euorthocladius*) sp. 2
 - Pseudokiefferiella*
 - Family: Simuliidae (black flies)
 - genus: *Gymnopsis dichopticus*
 - Family: Tipulidae (crane flies)
 - genus: *Tipula* sp. B
 - Helius*

Table 4.--Continued

Map No. 10 - Atigun River 23 miles above Galbraith Lake--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Agrenia bidenticulata*
Isotoma viridis
 - Family: Poduridae
 - genus: *Morulina thulensis*
 - Family: Hypogastruridae
 - genus: *Hypogastrura nivicolus*
- Order: Megaloptera (alder flies)
 - Suborder: Sialodea

Map No. 11 - Atigun River 27 miles above Galbraith Lake

- Phylum: Annelida
 - Class: Oligochaeta (aquatic worms)
 - Order: Plesiopora
 - Family: Enchytraeidae
 - Order: Prosopora
 - Family: Lumbriculidae
- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Diamesa latitarsis*
Diamesa sp. 3
Diamesa cinerella
Diamesa nivoriunda
Diamesa sp. B (Saether, 1970)
Eukiefferiella cyanea
Orthocladius (Euorthocladius) sp. 1
Orthocladius (Euorthocladius) sp. 2
Pseudokiefferiella
 - Family: Simuliidae (black flies)
 - genus: *Gymnopais dichopticus*
 - Family: Tipulidae (crane flies)
 - genus: *Holorusia*
 - Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1

Table 4.--Continued

Map No. 12 - Atigun River 29 miles above Galbraith Lake

Phylum: Annelida
 Class: Oligochaeta (aquatic worms)
 Order: Plesiopora
 Family: Enchytraeidae
Phylum: Arthropoda
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Diamesa latitarsis*
 Diamesa sp. 3
 Diamesa cinerella
 Diamesa nivoriunda
 Diamesa sp. B (Saether, 1970)
 Diamesa steinböcki
 Diamesa sp. x
 Orthocladus (Euorthocladus) sp. 2
 Pseudokiefferiella
 Family: Simuliidae (black flies)
 genus: *Gymnopsis dichopticus*
 Order: Collembola (spring tails)
 Family: Hypogastruridae
 genus: *Hypogastrura nivicolus*
 Class: Arachnoidea
 Order: Acarina (water mites)
 Family: Sperchonidae
 genus: *Sperchon* sp. 1

Map No. 13 - Kuyuktuvuk Creek 14 miles above Dietrich River near Wiseman

Phylum: Annelida
 Class: Oligochaeta (aquatic worms)
 Order: Plesiopora
 Family: Enchytraeidae
 Class: Nematomorpha (horsehair worms)
 Order: Gordiida
 Family: Gordiidae
Phylum: Arthropoda
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Chaetocladus* sp. 1
 Chaetocladus sp. 2
 Diamesa latitarsis
 Diamesa sp. 3
 Diamesa cinerella
 Diamesa nivoriunda
 Diamesa steinböcki

Table 4.--Continued

Map No. 13 - Kuyuktuvuk Creek 14 miles above Dietrich River--Continued

Diamesa sp. B (Saether, 1970)

Orthocladius sp. 1

Orthocladius sp. 2

Family: Simuliidae (blackflies)

genus: *Gymnopsis dichopticus*

Family: Tipulidae (crane flies)

genus: *Helius*

Order: Plecoptera (stone flies)

Family: Nemouridae

genus: *Nemoura* sp.

Subfamily: Capniinae (unidentified immature)

Order: Collembola (spring tails)

Family: Entomobryidae

genus: *Agrenia bidenticulata*

Istotoma viridis

Family: Hypogastruridae

genus: *Hypogastrura nivicolus*

Map No. 14 - Kuyuktuvuk Creek 10 miles above Dietrich R near Wiseman

Phylum: Annelida

Class: Oligochaeta (aquatic worms)

Order: Plesiopora

Family: Enchytraeidae

Phylum: Arthropoda

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Diamesa latitarsis*

Diamesa sp. 3

Diamesa cinerella

Diamesa nivoriunda

Diamesa steinböcki

Diamesa sp. B (Saether, 1970)

Eukiefferiella sp.

Eukiefferiella cyanea

Eukiefferiella bavarica

Orthocladius (*Euorthocladius*) sp. 1

Orthocladius (*Euorthocladius*) sp. 2

Parakiefferiella

Family: Tipulidae (crane flies)

genus: *Dicranota*

Family: Helidae (biting midges)

Order: Ephemeroptera (may flies)

Family: Heptageniidae

genus: *Cinygmula*

Table 4.--Continued

Map No. 14 - Kuyuktuvuk Creek 10 miles above Dietrich River--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Subfamily: Capniinae (unidentified immature)
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Isotoma viridis*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1
 - Sperchon crassipalpa*

Map No. 15 - Kuyuktuvuk Creek 5 miles above Dietrich R near Wiseman

- Phylum: Annelida
 - Class: Oligochaeta (aquatic worms)
 - Order: Plesiopora
 - Family: Enchytraeidae
- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Chaetocladius* sp. 1
 - Diamesa latitarsis*
 - Diamesa* sp. 3
 - Diamesa nivoriunda*
 - Diamesa steinböcki*
 - Diamesa* sp. B (Saether, 1970)
 - Eukiefferiella* sp.
 - Eukiefferiella cyanea*
 - Eukiefferiella bavarica*
 - Orthocladius* (*Euorthocladius*) sp. 1
 - Orthocladius* (*Euorthocladius*) sp. 2
 - Orthocladius* (*Euorthocladius*) sp. 3
 - Pseudokiefferiella*
 - Family: Tipulidae (crane flies)
 - Dicranota*
 - Tipula* sp. 3
 - Family: Empididae (dance flies)
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae
 - genus: *Iron*
 - Family: Baetidae
 - genus: *Pseudocloeon*

Table 4.--Continued

Map No. 15 - Kuyuktuvuk Creek 5 miles above Dietrich River--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura*
 - Subfamily: Capniinae (unidentified immature)
 - Family: Chloroperlidae
 - genus: *Paraperla*
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Agrenia bidenticulata*

Arachnoidea

- Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1
 - Sperchon crassipalpa*

Map No. 16 - Kuyuktuvuk Creek 1 mile above Dietrich River near Wiseman

- Phylum: Annelida
 - Class: Oligochaeta (aquatic worms)
 - Order: Plesiopora
 - Family: Enchytraeidae
- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Diamesa latitarsis*
 - Diamesa* sp. 3
 - Diamesa cinerella*
 - Diamesa nivoriunda*
 - Diamesa* sp. B (Saether, 1970)
 - Eukiefferiella* sp.
 - Eukiefferiella bavarica*
 - Eukiefferiella cyanea*
 - Orthocladius* (*Euorthocladius*) sp. 1
 - Orthocladius* (*Euorthocladius*) sp. 3
 - Orthocladius* s.s.
 - Parakiefferiella*
 - Family: Simuliidae (black flies)
 - Family: Tipulidae (crane flies)
 - genus: *Tipula* sp. B
 - Family: Empididae (dance flies)
 - Family: Deuterophlebiidae (mountain midges)
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae
 - genus: *Cinygmula*
 - Family: Baetidae
 - genus: *Pseudocloeon*

Table 4.--Continued

Map No. 16 - Kuyuktuvuk Creek 1 mile above Dietrich River--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura*
 - Subfamily: Capniinae (unidentified immature)
 - Family: Chloroperlidae
 - genus: *Paraperla*
- Order: Collembola (spring tails)
 - Family: Hypogastruridae
 - genus: *Hypogastruridae nivicolus*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp.
 - Sperchon crassipalpa*
 - Family: Lebertiidae
 - genus: *Lebertia*

Map No. 17 - Dietrich River below Kuyuktuvuk Creek near Wiseman

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Chaetocladius* sp. 1
 - Diamesa latitarsis*
 - Diamesa* sp. B (Saether, 1970)
 - Eukiefferiella* sp.
 - Eukiefferiella cyanea*
 - Eukiefferiella bavarica*
 - Orthocladius* (*Euorthocladius*) sp. 2
 - Orthocladius* s.s.
 - Orthocladius* sp. 1
 - Parakiefferiella* sp.
 - Family: Tipulidae (crane flies)
 - genus: *Dicranota*
 - Family: Phoridae (hump-backed flies)
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae (unidentified immature)
 - Family: Baetidae
 - genus: *Ameletus*
 - Baetis*
 - Ephemerella* (serrata group)

Table 4.--Continued

Map No. 17 - Dietrich River below Kuyuktuvuk Creek near Wiseman --Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Subfamily: Capniinae (unidentified immature)
 - Family: Perlodidae
 - genus: *Arcynopteryx*
 - Family: Chloroperlidae
 - genus: *Paraperla*
- Order: Trichoptera (caddis flies)
 - Family: Limnephilidae
 - genus: *Neothremma*
- Order: Coleoptera (beetles)
 - Family: Dytiscidae (unidentified immature)
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Sperchonidae
 - genus: *Sperchon* sp. 1

Map No. 18 - Middle Fork Koyukuk River near Wiseman

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Centroptilium*
 - Ephemerella*
 - Family: Heptageniidae
 - genus: *Heptagenia*
 - Order: Plecoptera (stone flies)
 - Family: Chloroperlidae
 - genus: *Alloperla*
 - Family: Nemouridae
 - genus: *Nemoura* sp.
 - Nemoura vallicularia*

Map No. 19 - Middle Fork Koyukuk River above Slate Creek

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Cricotopus*
 - Paracricotopus*
 - Smittia*
 - Order: Trichoptera (caddis flies).
 - Family: Brachycentridae
 - genus: *Micrasema*
 - Order: Collembola (spring tails)
 - Family: Poduridae
 - genus: *Tullbergia*

Table 4.--Continued
 Map No. 20 - Minnie Creek near Wiseman

Phylum: Arthropoda

Class: Crustacea

Order: Copepoda (copepods)

Suborder: Harpacticoida

Family: Canthocamptidae

genus: *Bryocamptus zschokkei*

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Corynoneura*

Cricotopus

Eukiefferiella

Micropsectra

Orthocladius

Paracricotopus

Rheotanytarsus

Trichocladius

Family: Simuliidae (black flies)

genus: *Prosimulium dicum*

Prosimulium pleurale

Simulium gouldingi

Order: Ephemeroptera (may flies)

Family: Baetidae

genus: *Pseudocloeon*

Ephemerella

Centroptilum

Family: Heptageniidae

genus: *Cinygmula*

Heptagenia

Order: Plecoptera (stone flies)

Family: Chloroperlidae

genus: *Alloperla*

Family: Nemouridae

genus: *Nemoura* sp.

Nemoura vallicularia

Nemoura vensa

Subfamily: Capniinae

genus: *Capnia*

Family: Perlodidae

genus: *Isogenus*

Order: Trichoptera (caddis flies)

Family: Rhyacophilidae

genus: *Agapetus*

Family: Limnephilidae

genus: *Limnephilus*

Pycnopsyche

Order: Collembola (spring tails)

Family: Entomobryidae

genus: *Isotoma*

Table 4.--Continued

Map No. 21 - Wiseman Creek at Wiseman

Phylum: Arthropoda

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Pseudodiamesa*

Trichocladius

Order: Ephemeroptera (may flies)

Family: Baetidae

genus: *Ephemerella*

Family: Heptageniidae

genus: *Heptagenia*

Order: Plecoptera (stone flies)

Family: Nemouridae

genus: *Nemoura* sp.

Family: Pteronarcidae

genus: *Pteronarcys princeps*

Class: Arachnoidea

Order: Acarina (water mites)

Family: Hygrobatidae

genus: *Hygrobatidae*

Family: Oribatulidae

genus: *Oribatei cerazetes*

Family: Sperchonidae

genus: *Sperchon* sp.

Map No. 22 - Slate Creek near Wiseman

Phylum: Arthropoda

Class: Crustacea

Order: Cladocera (water fleas)

Family: Chydoridae

genus: *Chydorus*

Order: Copepoda (copepods)

Family: Canthocamptidae

genus: *Attheyella nordenskioldii*

Maraenobiotus sp.

Family: Cyclopidae

genus: *Cyclops venustus*

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Brillia*

Cardiocladius

Chironomus

Constempellina

Cricotopus

Diamesa

Table 4.--Continued

Map No. 22 - Slate Creek near Wiseman--Continued

- genus: *Eukiefferiella*
- Micropsectra*
- Pseudochironomus*
- Pseudokiefferiella*
- Rheotanytarsus*
- Stempellina*
- Trichocladius*
- Family: Simuliidae (black flies)
- genus: *Prosimulium alpestre*
- Prosimulium clavatum*
- Prosimulium exigens*
- Prosimulium magnum*
- Prosimulium multidentatum*
- Prosimulium perspicuum*
- Prosimulium pleurale*
- Prosimulium ursinum*
- Family: Tipulidae (crane flies)
- genus: *Holorusia rubiginosa*
- Pedicia*
- Family: Empididae (dance flies)
- Order: Ephemeroptera (may flies)
- Family: Baetidae
- genus: *Baetis*
- Ephemerella*
- Pseudocloeon*
- Family: Heptageniidae
- genus: *Cinygmula*
- Heptagenia*
- Iron*
- Ironopsis*
- Order: Plecoptera (stone flies)
- Family: Nemouridae
- genus: *Brachyptera*
- Nemoura* sp.
- Nemoura vallicularia*
- Nemoura venosa*
- Order: Trichoptera (caddis flies)
- Family: Brachycentridae
- genus: *Brachycentrus americanus*
- Brachycentrus* sp.
- Family: Limnephilidae
- genus: *Pycnopsyche*
- Order: Collembola (spring tails)
- Family: Entomobryidae
- genus: *Agrenia*
- Entomobrya*
- Folsomia*
- Isotoma*

Table 4.--Continued

Map No. 22 - Slate Creek near Wiseman--Continued

Class: Arachnoidea
Order: Acarina (water mites)
Family: Feltriidae
 genus: *Feltria*
Family: Hygrobatidae
 genus: *Hygrobat*
Family: Lebertiidae
 genus: *Lebertia*
Family: Oribatulidae
 genus: *Oribatei*
Family: Sperchonidae
 genus: *Sperchon* sp.

Map No. 23 - Prospect Creek at mouth near Prospect Camp

Phylum: Arthropoda
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
 genus: *Ablabesmyia*
 Brillia
 Constempellina
 Corynoneura
 Cricotopus
 Eukiefferiella
 Orthocladius
 Polypedilum
 Pseudodiamesa
 Stempellina
Family: Simuliidae (black flies)
 genus: *Prosimulium pleurale*
 Simulium arcticum
 Simulium furculatum
 Simulium gouldingi
 Simulium sp.
 Simulium tuberosum
Order: Ephemeroptera (may flies)
Family: Baetidae
 genus: *Ephemerella*
 Neocloeon
 Pseudocloeon
Family: Heptageniidae
 genus: *Heptagenia*

Table 4.--Continued

Map No. 23 - Prospect Creek at mouth near Prospect Camp--Continued

- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Nemoura*
 - Subfamily: Capniinae
 - genus: *Capnia*
 - Family: Perlodidae
 - genus: *Isogenus*
- Order: Trichoptera (caddis flies)
 - Family: Rhyacophilidae
 - genus: *Glossosoma*
- Order: Brachycentridae
 - genus: *Brachycentrus* sp.
 - Brachycentrus americanus*
 - Micrasema*
 - Family: Limnephilidae
 - genus: *Dicosmoecus*
 - Platycentropus*
 - Pycnopsyche*

Map No. 24 - Yukon River near Stevens Village

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae
 - genus: *Heptagenia*

Map No. 25 - Hess Creek near Livengood

- Phylum: Arthropoda
 - Class: Crustacea
 - Order: Cladocera
 - Family: Chydoridae
 - genus: *Chydorus*
 - Eurycercus*
 - Family: Polyphemidae
 - genus: *Polyphemus*
 - Family: Daphnidae
 - genus: *Simocephalus*
 - Order: Copepoda (copepods)
 - Family: Canthocamptidae
 - genus: *Attheyella nordenskioldii*
 - Family: Cyclopidae
 - genus: *Cyclops exilis*

Table 4.--Continued

Map No. 25 - Hess Creek near Livengood--Continued

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Ablabesmyia*
Chaetocladius
Chironomus
Constempellina
Corynoneura
Cricotopus
Diplocladius cultriger
Eukiefferiella
Heterotrissocladius
Larsia
Microcricotopus
Micropsectra
Paracladopelma
Phaenopsectra
Polypedilum
Procladius
Psectrocladius
Rheotanytarsus
Smittia
Thienemanniella

Family: Simuliidae (black flies)

genus: *Prosimulium pleurale*
Simulium corbis
Simulium furculatum

Family: Tipulidae (crane flies)

genus: *Tipula*

Order: Ephemeroptera (may flies)

Family: Baetidae

genus: *Ephemerella*
Pseudocloeon

Order: Plecoptera (stone flies)

Family: Perlodidae

genus: *Isogenus*

Family: Nemouridae

genus: *Nemoura* sp.
Nemoura vallicularia

Order: Trichoptera (caddis flies)

Family: Brachycentridae

genus: *Brachycentrus americanus*
Brachycentrus sp.
Micrasema

Table 4.--Continued

Map No. 25 - Hess Creek near Livengood--Continued

Family: Rhyacophilidae
 genus: *Glossosoma*
Family: Limnephilidae
 genus: *Pycnopsyche*
Order: Collembola (spring tails)
 Family: Entomobryidae
 genus: *Tomocercus*
Class: Arachnoidea
 Order: Acarina (water mites)
 Family: Feltriidae
 genus: *Feltria*
 Family: Hygrobatidae
 genus: *Hygrobates*
 Family: Lebertiidae
 genus: *Lebertia*

Map No. 26 - Tolovana River near Livengood

Phylum: Arthropoda
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Micropsectra*
 Phaenopsectra
 Order: Ephemeroptera (may flies)
 Family: Heptageniidae
 genus: *Heptagenia*
 Order: Plecoptera (stone flies)
 Family: Nemouridae
 genus: *Nemoura* sp.

Map No. 27 - Chatanika River near Olney

Phylum: Arthropoda
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Ablabesmyia*
 Chaetocladius
 Cricotopus
 Eukiefferiella
 Micropsectra
 Monodiamesa
 Smittia
 Trichocladius

Table 4.--Continued

Map No. 27 - Chatanika River near Olmes--Continued

- Family: Simuliidae (black flies)
 - genus: *Prosimulium pleurale*
 - Simulium decorum*
 - Simulium furculatum*
- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Centroptilium*
 - Ephemerella*
 - Neocloeon*
 - Siphonurus*
- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Brachyptera*
 - Nemoura* sp.
- Order: Trichoptera (caddis flies)
 - Family: Limnephilidae
 - genus: *Frenesia*

Map No. 28 - Caribou Creek near Chatanika

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Brillia*
 - Cricotopus*
 - Eukiefferiella*
 - Micropsectra*
 - Orthocladius*
 - Polypedilum*
 - Pseudokiefferiella*
 - Family: Simuliidae (black flies)
 - genus: *Eusimulium johannseni*
 - Prosimulium exigens*
 - Family: Psychodidae (moth flies)
 - genus: *Pericoma* sp. E
 - Family: Empididae (dance flies)
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae
 - genus: *Cinygmula*
 - Heptagenia*
 - Iron*
 - Family: Baetidae
 - genus: *Neocloeon*
 - Pseudocloeon*

Table 4.--Continued

Map No. 28 - Caribou Creek near Chatanika--Continued

- Order: Plecoptera (stone flies)
 - Family: Perlodidae
 - genus: *Isogenus*
 - Family: Nemouridae
 - genus: *Nemoura* sp.
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Isotoma*
Proisotoma
- Order: Trichoptera (caddis flies)
 - Family: Rhyacophilidae
 - genus: *Agapetus*
Rhyacophila
 - Family: Limnephilidae
 - genus: *Dicosmoecus*
Pycnopsyche
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Lebertiidae
 - genus: *Lebertia*
 - Family: Sperchonidae
 - genus: *Sperchon* sp.

Map No. 29 - Chena River near Fairbanks

- Phylum: Mollusca
 - Class: Gastropoda (snails)
 - Order: Ctenobranchiata
 - Family: Valvatidae
 - genus: *Valvata*
- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Eukiefferiella*
Heterotrissocladius
Micropsectra
Paracladopelma
Pseudodiamesa
Rheotanytarsus
 - Family: Tipulidae (crane flies)
 - genus: *Hexatoma*
Prionocera
 - Family: Empididae (dance flies)
 - Order: Ephemeroptera (may flies)
 - Family: Heptageniidae
 - genus: *Heptagenia*
Ironopsis

Table 4.--Continued

Map No. 29 - Chena River near Fairbanks--Continued

- Family: Baetidae
 - genus: *Ephemerella*
 - Pseudocloeon*
- Order: Plecoptera (stone flies)
 - Family: Nemouridae
 - genus: *Brachyptera*
 - Nemoura*
 - Subfamily: Capniinae
 - genus: *Capnia*
 - Family: Perlodidae
 - genus: *Diura*
 - Isogenus*
- Order: Trichoptera (caddis flies)
 - Family: Limnephilidae
 - genus: *Frenesia*
 - Platycentropus*
 - Family: Rhyacophilidae
 - genus: *Rhyacophila*
- Order: Collembola (spring tails)
 - Family: Entomobryidae
 - genus: *Isotoma*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Axonopsidae
 - genus: *Aturus*
 - Family: Feltriidae
 - genus: *Feltria*
 - Family: Hygrobatidae
 - genus: *Hygrobates*
 - Family: Lebertiidae
 - genus: *Lebertia*
 - Family: Sperchonidae
 - genus: *Sperchon* sp.

Map No. 30 - Salcha River 8 miles above gage near Salchaket

- Phylum: Arthropoda
 - Class: Insecta
 - Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Ablabesmyia*
 - Brillia*
 - Constempellina*
 - Cricotopus*
 - Eukiefferiella*
 - Orthocladius*
 - Paracricotopus*

Table 4.--Continued

Map No. 30 - Salcha River 8 miles above gage near Salchaket--Continued

- genus: *Psectrocladius*
 - Pseudodiamesa*
 - Pseudokiefferiella*
 - Trissocladius*
 - Family: Simuliidae (black flies)
 - genus: *Prosimulium pleurale*
 - Simulium pugetense*
 - Family: Tipulidae (crane flies)
 - genus: *Prionocera*
 - Suborder: Brachycera (unident. immature)
 - Family: Empididae (dance flies)
- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Ephemerella*
 - Neocloeon*
 - Pseudocloeon*
 - Family: Heptageniidae
 - genus: *Cinygmula*
- Order: Plecoptera (stone flies)
 - Family: Chloroperlidae
 - genus: *Alloperla*
 - Family: Nemouridae
 - genus: *Brachyptera*
 - Nemoura*
 - Nemoura vallicularia*
 - Subfamily: Capniinae
 - genus: *Capnia*
- Order: Trichoptera (caddis flies)
 - Family: Brachycentridae
 - genus: *Brachycentrus americanus*
 - Brachycentrus* sp.
 - Family: Limnephilidae
 - genus: *Dicosmoecus*
 - Frenesia*
 - Family: Rhyacophilidae
 - genus: *Glossosoma*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Lebertiidae
 - genus: *Lebertia*
 - Family: Sperchonidae
 - genus: *Sperchon* sp.

Table 4.--Continued

Map No. 31 - South Fork Minton Creek near Salchaket

Phylum: Arthropoda
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Cricotopus*
Eukiefferiella
Micropsectra
Pseudodiamesa
Pseudokiefferiella
Rheotanytarsus

Map No. 32 - Shaw Creek near Delta Junction

Phylum: Mollusca
Class: Gastropoda (snails)
Order: Ctenobranchiata
Family: Valvatidae
genus: *Valvata*

Phylum: Arthropoda
Class: Crustacea
Order: Cladocera (water fleas)
Family: Chydoridae
genus: *Chydorus*

Order: Copepoda (copepods)
Family: Cyclopidae
genus: *Cyclops exilis*
Cyclops sp.

Family: Canthocamptidae
genus: *Attheyella dentata*
Paracamptus reggiae
Moraria duthiei

Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Ablabesmyia*
Chaetocladius
Constempellina
Corynoneura
Cricotopus
Dicrotendipes
Eukiefferiella
Heterotrissocladius
Micropsectra
Orthocladius
Paralauterbormiella

Table 4.--Continued

Shaw Creek near Delta Junction--Continued

Pentaneura
Polypedilum
Potthastia sp.
Procladius
Psectrocladius
Rheotanytarsus
Trichocladius
Order: Ephemeroptera (may flies)
 Family: Baetidae
 genus: *Neocloeon*
Order: Collembola (spring tails)
 Family: Entomobryidae
 genus: *Folsomia*
Order: Trichoptera (caddis flies)
 Family: Rhyacophilidae
 genus: *Agapetus*
 Family: Limnephilidae
 genus: *Dicosmoecus*
 Frenesia
Class: Arachnoidea
 Order: Acarina (water mites)
 Family: Lebertiidae
 genus: *Lebertia*

Map No. 33 - Fish Creek at mile 191 Richardson Highway near Paxson

Phylum: Mollusca
 Class: Pelecypoda (clams)
 Order: Heterodonta
 Family: Sphaeriidae
 genus: *Pisidium*
Phylum: Arthropoda
 Class: Crustacea
 Order: Cladocera (water fleas)
 Family: Chydoridae
 genus: *Alona*
 Chydorus
 Family: Bosminidae
 genus: *Bosmina*
 Order: Copepoda (copepods)
 Family: Canthocamptidae
 genus: *Attheyella dentata*
 Attheyella dogieli
 Attheyella (subgenus)
 Attheyella nordenskioldii (subgenus *Mrazekiella*)
 Attheyella sp.

Table 4.--Continued

Map No. 33 - Fish Creek at mile 191 Richardson Highway near Paxson--Continued

genus: *Bryocamptus cuspidatus*
Bryocamptus hiatus
Bryocamptus sp.
Bryocamptus zschokkei
Maraenobiotus insignipes
Maraenobiotus sp.
Moraria duthiei

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Chironomus*
Constempellina
Cricotopus
Diamesa
Diplocladius cultriger
Eukiefferiella
Hydrobaenus nivoriundus
Hydrobaenus paradoreus
Lasiodiamesa
Microsectra
Orthocladius
Paracricotopus
Potthastia longimanus
Potthastia sp.
Polypedilum
Psectrocladius
Pseudodiamesa
Pseudokiefferiella
Rheotanytarsus
Tanytarsus
Thienemanniella

Family: Simuliidae (black flies)

genus: *Prosimulium exigens*
Prosimulium fontanum
Prosimulium travisi
Simulium decorum
Simulium furculatum
Simulium hunteri
Simulium tuberosum

Family: Tipulidae (crane flies)

genus: *Dicranota*
Hexatoma
Pedicia
Phylidorea

Table 4.--Continued
 Map No. 33 - Fish Creek at mile 191 Richardson Highway near Paxson--Continued

- Family: Psychodidae (moth flies)
 - genus: *Pericoma* sp. D
 - Pericoma* sp. E
- Family: Empididae (dance flies)
 - genus: *Chelifera*
- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Baetis*
 - Ephemerella*
 - Pseudocloeon*
 - Family: Heptageniidae
 - genus: *Heptagenia*
- Order: Plecoptera (stone flies)
 - Family: Chloroperlidae
 - genus: *Alloperla*
 - Hastaperla*
 - Family: Nemouridae
 - genus: *Brachyptera*
 - Nemoura haysi*
 - Nemoura* sp.
 - Nemoura vallicularia*
 - Nemoura venosa*
 - Perlomyia*
 - Subfamily: Capniinae
 - genus: *Capnia*
 - Family: Perlodidae
 - genus: *Isogenus*
- Order: Trichoptera (caddis flies)
 - Family: Rhyacophilidae
 - genus: *Glossosoma*
 - Rhyacophila fuscula*
 - Rhyacophila* sp.
 - Family: Limnephilidae
 - genus: *Dicosmoecus*
 - Frenesia*
 - Glyphopsyche*
 - Limnephilus*
 - Platycentropus*
 - Family: Brachycentridae
 - genus: *Brachycentrus* sp.
 - Brachycentrus americanus*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Axonopsidae
 - genus: *Aturus*
 - Family: Feltriidae
 - genus: *Feltria*

Table 4.--Continued

Map No. 33 - Fish Creek at mile 191 Richardson Highway near Paxson--Continued

Family: Hygrobatidae
 genus: *Hygrobat*
Family: Lebertiidae
 genus: *Lebertia*
Family: Oribatulidae
 genus: *Oribatei cerazetes*
 Oribatei sp.
Family: Sperchonidae
 genus: *Sperchon* sp.
Family: Pionidae
 genus: *Tiphys*

Map No. 34 - Gulkana River 2 miles above gage at Sourdough

Phylum: Mollusca
 Class: Gastropoda (snails)
 Order: Ctenobranchiata
 Family: Valvatidae
 genus: *Valvata*
 Order: Pulmonata
 Family: Planorbidae
 genus: *Gyraulus*
Phylum: Arthropoda
 Class: Crustacea
 Order: Cladocera (water fleas)
 Family: Chydoridae
 genus: *Alona*
 Chydons
 Order: Copepoda (copepods)
 Family: Canthocamptidae
 genus: *Attheyella nordenskioldii*
 Moraria duthiei
 Paracamptus reductus
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Ablabesmyia*
 Chironomus
 Cricotopus
 Eukiefferiella
 Heterotrissocladius
 Paracladopelma
 Pentaneura
 Phaenopsectra
 Psectrocladius
 Psectrotanypus

Table 4.--Continued

Map No. 34 - Gulkana River 2 miles above gage at Sourdough--Continued

- genus: *Polypedilum*
- Pseudochironomus*
- Pseudokiefferiella*
- Rheotanytarsus*
- Stempellina*
- Stitochironomus*
- Tribelos*
- Trichocladius*
- Family: Simuliidae (black flies)
- genus: *Prosimulium* *fontanum*
- Prosimulium* *magnum*
- Prosimulium* *pleurale*
- Simulium* *arcticum*
- Simulium* *corbis*
- Simulium* *decorum*
- Simulium* *furculatum*
- Simulium* *tuberosum*
- Family: Tipulidae (crane flies)
- genus: *Prionocera*
- Family: Empididae (dance flies)
- Order: Ephemeroptera (may flies)
- Family: Baetidae
- genus: *Centroptilum*
- Ephemerella*
- Pseudocloeon*
- Family: Heptageniidae
- genus: *Cinygmula*
- Heptagenia*
- Iron*
- Order: Plecoptera (stone flies)
- Family: Chloroperlidae
- genus: *Alloperla*
- Family: Perlodidae
- genus: *Isogenus*
- Family: Nemouridae
- genus: *Brachyptera*
- Nemoura* sp.
- Nemoura* *vallicularia*
- Family: Pteronarcidae
- genus: *Pteronarcella* *regularis*
- Order: Trichoptera (caddis flies)
- Family: Rhyacophilidae
- genus: *Atopsyche*
- Glossosoma*
- Rhyacophila* sp.

Table 4.--Continued
Map No. 34 - Gulkana River 2 miles above gage at Sourdough--Continued

Family: Hydropsychidae

genus: *Hydropsyche* sp.
Hydropsyche betteni
Hydropsyche bifida
Hydropsyche recurvata
Parapsyche
Macronemum zebratum
Macronemum sp.

Family: Limnephilidae

genus: *Astenophylex*
Dicosmoecus
Pycnopsyche

Family: Brachycentridae

genus: *Brachycentrus* sp.
Brachycentrus americanus

Class: Arachnoidea

Order: Acarina (water mites)

Family: Axonopsidae

genus: *Aturus*

Family: Feltriidae

genus: *Feltria*

Family: Hygrobatidae

genus: *Hygrobates*

Family: Lebertiidae

genus: *Lebertia*

Map No. 35 - Gakona River at Gakona

Phylum: Arthropoda

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae

genus: *Eukiefferiella*
Pseudodiamesa

Family: Tipulidae (crane flies)

genus: *Pedicia*

Order: Plecoptera (stone flies)

Family: Chloroperlidae

genus: *Alloperla*
Isoperla

Family: Perlodidae

genus: *Isogenus*

Family: Nemouridae

genus: *Nemoura* sp.
Nemoura vallicularia

Subfamily: Capniinae

genus: *Capnia*

Table 4.--Continued

Map No. 36 - Tazlina River near Glennallen

Phylum: Arthropoda
Class: Insecta
Order: Diptera
Family: Chironomidae (midges)
genus: *Cricotopus*
Diamesa sp. 2
Family: Simuliidae (black flies)
genus: *Simulium decorum*
Simulium furculatum
Order: Ephemeroptera (may flies)
Family: Baetidae
genus: *Ephemerella*
Order: Plecoptera (stone flies)
Family: Chloroperlidae
genus: *Alloperla*
Family: Nemouridae
genus: *Brachyptera*
Order: Trichoptera (caddis flies)
Family: Rhyacophilidae
genus: *Glossosoma*

Map No. 37 - Squirrel Creek 2 miles above gage at Tonsina

Phylum: Arthropoda
Class: Crustacea
Order: Cladocera (water fleas)
Family: Chydoridae
genus: *Alona*
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Chironomus*
Cricotopus
Diamesa
Eukiefferiella
Metricnemus
Orthocladus
Paracricotopus
Phaenopsectra
Psectrocladius
Pseudodiamesa
Pseudokiefferiella
Pseudosmittia
Rheotanytarsus
Smittia
Tanytarsus

Table 4.--Continued
Map No. 37 - Squirrel Creek 2 miles above gage at Tonsina--Continued

- genus: *Thienemanniella*
- Trichocladius*
- Family: Simuliidae (black flies)
- genus: *Prosimulium exigens*
- Prosimulium gibsoni*
- Prosimulium magnum*
- Prosimulium multidentatum*
- Prosimulium onychodactylum*
- Prosimulium pleurale*
- Simulium arcticum*
- Simulium decorum*
- Simulium furculatum*
- Simulium pugetense*
- Simulium quebecense*
- Simulium tuberosum*
- Simulium venustum*
- Family: Tipulidae (crane flies)
- genus: *Pedicia*
- Family: Psychodidae (moth flies)
- genus: *Pericoma* sp. D
- Pericoma* sp. E
- Family: Empididae (dance flies)
- Order: Ephemeroptera (may flies)
- Family: Baetidae
- genus: *Centroptilum*
- Ephemerella*
- Pseudocloeon*
- Family: Heptageniidae
- genus: *Cinygmula*
- Heptagenia*
- Iron*
- Ironopsis*
- Order: Plecoptera (stone flies)
- Family: Chloroperlidae
- genus: *Alloperla*
- Hastaperla*
- Family: Nemouridae
- genus: *Brachyptera*
- Nemoura* sp.
- Nemoura vallicularia*
- Nemoura venosa*
- Subfamily: Capniinae
- genus: *Capnia*
- Family: Perlodidae
- genus: *Claassenia*
- Isogenus*

Table 4.--Continued

Map No. 37 - Squirrel Creek 2 miles above gage at Tonsina--Continued

- Order: Trichoptera (caddis flies)
 - Family: Rhyacophilidae
 - genus: *Agapetus*
 - Glossosoma*
 - Rhyacophila* sp.
 - Rhyacophila fuscula*
 - Rhyacophila lobifera*
 - Rhyacophila vibox*
 - Family: Limnephilidae
 - genus: *Frenesia*
 - Pycnopsyche*
 - Family: Brachycentridae
 - genus: *Brachycentrus* sp.
 - Brachycentrus americanus*
- Class: Arachnoidea
 - Order: Acarina (water mites)
 - Family: Axonopsidae
 - genus: *Aturus*
 - Family: Hygrobatidae
 - genus: *Hygrobates*
 - Family: Lebertiidae
 - genus: *Lebertia*
 - Family: Sperchonidae
 - genus: *Sperchon* sp.

Map No. 38 - Little Tonsina above Tonsina River near Tonsina

- Phylum: Mollusca
 - Class: Gastropoda (snails)
 - Order: Ctenobranchiata
 - Family: Valvatidae
 - genus: *Valvata*
 - Class: Pelecypoda (clams)
 - Order: Heterodonta
 - Family: Sphaeriidae
 - genus: *Pisidium*
- Phylum: Arthropoda
 - Class: Crustacea
 - Order: Copepoda (copepods)
 - Family: Cyclopidae
 - genus: *Cyclops capillatus*
 - Cyclops exilis*
 - Cyclops magnus*
 - Cyclops venustus*
 - Cyclops vernalis*

Table 4.--Continued

Map No. 38 - Little Tonsina above Tonsina River near Tonsina--Continued

Family: Canthocamptidae

genus: *Attheyella nordenskioldii*
Bryocamptus hiatus
Bryocamptus zschokkei
Paracamptus

Class: Insecta

Order: Diptera (true flies)

Family: Chironomidae (midges)

genus: *Ablabesmyia*
Constempellina
Corynoneura
Cricotopus
Eukiefferiella
Micropsectra
Orthocladius
Paracladopelma
Pseudodiamesa
Rheotanytarsus
Smittia
Trichocladius

Family: Tipulidae (crane flies)

genus: *Hexatoma*

Family: Simuliidae (black flies)

genus: *Prosimulium alpestre*
Simulium aureum
Simulium decorum
Simulium furculatum
Simulium hunteri
Simulium pugetense

Family: Empididae (dance flies)

Order: Ephemeroptera (may flies)

Family: Baetidae

genus: *Baetis*
Ephemerella
Neocloeon
Pseudocloeon

Family: Heptageniidae

genus: *Heptagenia*

Order: Plecoptera (stone flies)

Family: Chloroperlidae

genus: *Alloperla*
Isoperla

Family: Perlodidae

genus: *Isogenus*

Table 4.--Continued
Map No. 38 - Little Tonsina above Tonsina River near Tonsina--Continued

- Family: Nemouridae
 - genus: *Brachyptera*
 - Nemoura* sp.
 - Nemoura vallicularia*
- Subfamily: Capniinae
 - genus: *Capnia*
- Order: Trichoptera (caddis flies)
- Family: Rhyacophilidae
 - genus: *Agapetus*
 - Glossosoma*
- Family: Limnephilidae
 - genus: *Glyphopsyche*
 - Dicosmoecus*
 - Platycentropus*
 - Pycnopsyche*
- Family: Brachycentridae
 - genus: *Brachycentrus americanus*
- Order: Collembola (spring tails)
- Family: Entomobryidae
 - genus: *Isotoma*
- Class: Arachnoidea
- Order: Acarina (water mites)
- Family: Axonopsidae
 - genus: *Aturus*
- Family: Hygrobatidae
 - genus: *Hygrobates*
- Family: Lebertiidae
 - genus: *Lebertia*
- Family: Sperchonidae
 - genus: *Sperchon* sp.

Map No. 39 - Stuart Creek near Tiekell

- Phylum: Arthropoda
- Class: Insecta
- Order: Diptera (true flies)
 - Family: Chironomidae (midges)
 - genus: *Cricotopus*
 - Eukiefferiella*
 - Family: Simuliidae (black flies)
 - genus: *Prosimulium exigens*
- Order: Ephemeroptera (may flies)
 - Family: Baetidae
 - genus: *Centroptilum*
 - Pseudocloeon*
 - Family: Heptageniidae
 - genus: *Ironopsis*

Table 4.--Continued
Map No. 39 - Stuart Creek near Tiekel--Continued

Order: Plecoptera (stone flies)
Family: Chloroperlidae
genus: *Alloperla*
Family: Nemouridae
genus: *Brachyptera*
Subfamily: Capniinae
genus: *Capnia*

Map No. 40 - Lowe River at Dayville Road near Valdez

Phylum: Arthropoda
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Brillia*
Corynoneura
Eukiefferiella
Order: Ephemeroptera (may flies)
Family: Heptageniidae
genus: *Cinygmula*
Heptagenia
Family: Baetidae
genus: *Pseudocloeon*
Order: Plecoptera (stone flies)
Family: Nemouridae
Subfamily: Capniinae
genus: *Capnia*

Map No. 41 - Solomon Gulch near Valdez

Phylum: Arthropoda
Class: Insecta
Order: Diptera (true flies)
Family: Chironomidae (midges)
genus: *Brillia*
Cricotopus
Eukiefferiella
Orthocladus
Pseudokiefferiella
Stictochironomus
Family: Simuliidae (black flies)
genus: *Prosimulium exigens*
Prosimulium fontanum
Prosimulium multidentatum
Order: Ephemeroptera (may flies)
Family: Baetidae
genus: *Centroptilum*
Pseudocloeon

Table 4.--Continued

Map No. 41 - Solomon Gulch near Valdez--Continued

Family: Heptageniidae
 genus: *Ironopsis*
Order: Trichoptera (caddis flies)
 Family: Rhyacophilidae
 genus: *Agapetus*
 Rhyacophila sp.

Map No. 42 - Allison Creek near Valdez

Phylum: Arthropoda
 Class: Crustacea
 Order: Copepoda (copepods)
 Family: Canthocamptidae
 genus: *Maraenobiotus insignipes*
 Class: Insecta
 Order: Diptera (true flies)
 Family: Chironomidae (midges)
 genus: *Ablabesmyia*
 Brillia
 Cardiocladius
 Chaetocladius
 Clunio
 Cricotopus
 Diamesa
 Eukiefferiella
 Heterotrissocladius
 Orthocladius
 Paracricotopus
 Pseudokiefferiella
 Rheotanytarsus
 Thienemanniella
 Trichocladius
 Family: Simuliidae (black flies)
 genus: *Prosimulium alpestre*
 Prosimulium fontanum
 Prosimulium pleurale
 Simulium pugetense
 Order: Ephemeroptera (may flies)
 Family: Heptageniidae
 genus: *Cinygmula*
 Iron
 Family: Baetidae
 genus: *Neocloeon*
 Pseudocloeon

Table 4.--Continued

Map No. 42 - Allison Creek near Valdez--Continued

Order: Plecoptera (stone flies)

Family: Chloroperlidae

genus: *Alloperla*

Paraperla frontalis

Order: Trichoptera (caddis flies)

Family: Limnephilidae

genus: *Dicosmoecus*

Pycnopsyche

Class: Arachnoidea

Order: Acarina (water mites)

Family: Axonopsidae

genus: *Aturus*

Family: Feltriidae

genus: *Feltria*

