

B2231

This series includes unpublished preliminary reports and data records not intended for general distribution. They should not be referred to in publications without clearance from the issuing Board establishment and without clear indication of their manuscript status.

**FISHERIES RESEARCH BOARD
OF CANADA**

④

MANUSCRIPT REPORT SERIES

No. 1189

**Purse Seine Catches of Sockeye Salmon
(*Oncorhynchus nerka*) and other Species
of Fish at Babine Lake
British Columbia, 1971**

by

J. R. Scarsbrook and J. McDonald

Pacific Biological Station, Nanaimo, B.C.

July 1972

Ursah Upr
This series includes unpublished preliminary reports and data records not intended for general distribution. They should not be referred to in publications without clearance from the issuing Board establishment and without clear indication of their manuscript status.

**FISHERIES RESEARCH BOARD
OF CANADA**

MANUSCRIPT REPORT SERIES

No. 1189

**Purse Seine Catches of Sockeye Salmon
(*Oncorhynchus nerka*) and other Species
of Fish at Babine Lake
British Columbia, 1971**

by
J. R. Scarsbrook and J. McDonald

Pacific Biological Station, Nanaimo, B.C.

July 1972

INTRODUCTION

Babine Lake is the largest lake of the Skeena River drainage system, and produces one of British Columbia's major sockeye salmon (*Oncorhynchus nerka*) stocks. The lake is approximately 100 miles (160.9 km) long and has a surface area of 182 square miles (490 km). The Department of Fisheries is currently attempting to improve sockeye production by increasing the number of fry entering the lake, thus making fuller use of its potential as a nursery area (Dept. of Fish. 1965; McDonald 1969). The project involves extension and improvement of spawning grounds by constructing artificial spawning channels and by controlling stream flow on Fulton River (two channels) and Pinkut Creek (one channel). See Fig. 1. The construction phase of the project was completed in 1971.

A mark and recovery program was carried out in 1966, 1967, and 1968 to compare the distribution, growth and survival of channel-produced fry with wild fry (McDonald 1969). Details of recovery methods and procedures are described by Scarsbrook and McDonald (1970). In 1971, a second mark and recovery program was initiated for the purpose of examining the effects of increased population size resulting from fry outputs from spawning channels at Fulton River and Pinkut Creek on distribution, growth and survival in the lake. Fry from the Fulton River channel were marked by removing either a left pelvic fin or both pelvic fins, while those from the Pinkut Creek channel were marked by removing the right pelvic fin. This report gives details of the catches of sockeye and other species of fish made in the course of fishing to recover marked sockeye during the spring, summer and fall after their entry into the lake.

METHODS

Fish were captured by seining from a 35-ft drum seiner. Lake areas and set locations were as used earlier but are described again for convenience (Figs. 2-8).

Fishing was carried out in three periods throughout the summer and fall, July 3-14, August 16-27, and October 7-15. Some additional sets were made in May and June and are included in this report. In 1971, every lake area was fished at some time during each fishing session, except for Area 8 in the July session. Ten sets were made in areas 1 to 5 and 9, and five sets each in areas 8 and 10. Civil twilight (evening and morning) was used to classify day and night sets.

RESULTS

Table 1 lists catches of sockeye by set for 1971. All juvenile sockeye kept were counted and examined twice for missing fins to ensure an

accurate marked-to-unmarked ratio. The total catch of sockeye for the year is shown below:

Year	Number of sets	Catch	
		Age 0	Age 1 and older
1971	246	76,630	6,802

The incidental catches of other species are given in Table 2, set numbers correspond to those in Table 1. Information not reported herein is available in field record books on file at the Nanaimo Station.

Definition of terms used in Tables 1 and 2

Oncorhynchus nerka

- Underyearlings (Age 0) - fish in their first year of lake residence. These would be the progeny of the anadromous sockeye and non-anadromous sockeye (kokanee), but mainly of the former.
- Age 1 and older - these would consist mainly of kokanee, the non-anadromous form, but would include some sockeye in their second year which would emigrate to the sea the following spring.
- Adults - 3-, 4-, and 5-year old sockeye which have returned from salt water to spawn.
- Total catch - the total number of age 0 sockeye caught in a particular set, including marked fish. Catches with an asterisk are estimates only. The numbers in parenthesis refer to the actual numbers retained for a sample, and examined for marks.
- Marks - the number of marked age 0 fish recovered in each set.
 - R.P. - Right pelvic (Pinkut Creek fish)
 - L.P. - Left pelvic) - (Fulton River fish)
 - D.P. - Double pelvic)

Species other than *Oncorhynchus nerka*

- Juvenile coho (*O. kisutch*) - includes fish in their 1st and 2nd year of lake residence.
- Juvenile pinks (*O. gorbuscha*) - pink salmon in their 1st year.
- Trout (R.T.) - Rainbow trout (*Salmo gairdneri*)
- Char (L.T.) - Lake trout (*Salvelinus namaycush*)
- Whitefish - includes Lake whitefish (*Coregonus clupeaformis*)
Pygmy whitefish (*Prosopium coulteri*)
Rocky Mountain whitefish (*Prosopium williamsi*)
- Suckers - Largescale (*Catostomus macrocheilus*)
White (*Catostomus commersoni*)
- Peamouth chub - (*Mylocheilus caurinus*)
- Redside shiner - (*Richardsonius balteatus*)
- Sculpin - (*Cottus asper*)
- Ling - (*Lota lota*)
- Squawfish - (*Ptychocheilus oregonensis*)
- Unidentified - usually small "fry-like" fish which were not identified.

REFERENCES

- Department of Fisheries of Canada. MS 1965. Proposed sockeye salmon development program for Babine Lake. Can. Dep. Fish. 53 p.
- McDonald, J. 1969. Distribution, growth, and survival of sockeye fry (*Oncorhynchus nerka*) produced in natural and artificial stream environments. J. Fish. Res. Bd. Canada 26: 229-267.
- Scarsbrook, J. R., and J. McDonald. MS 1970. Purse seine catches of sockeye salmon (*Oncorhynchus nerka*) and other species of fish at Babine Lake, British Columbia, 1966 to 1968. Fish. Res. Board Can. MS Rep. 1075: 110 p.

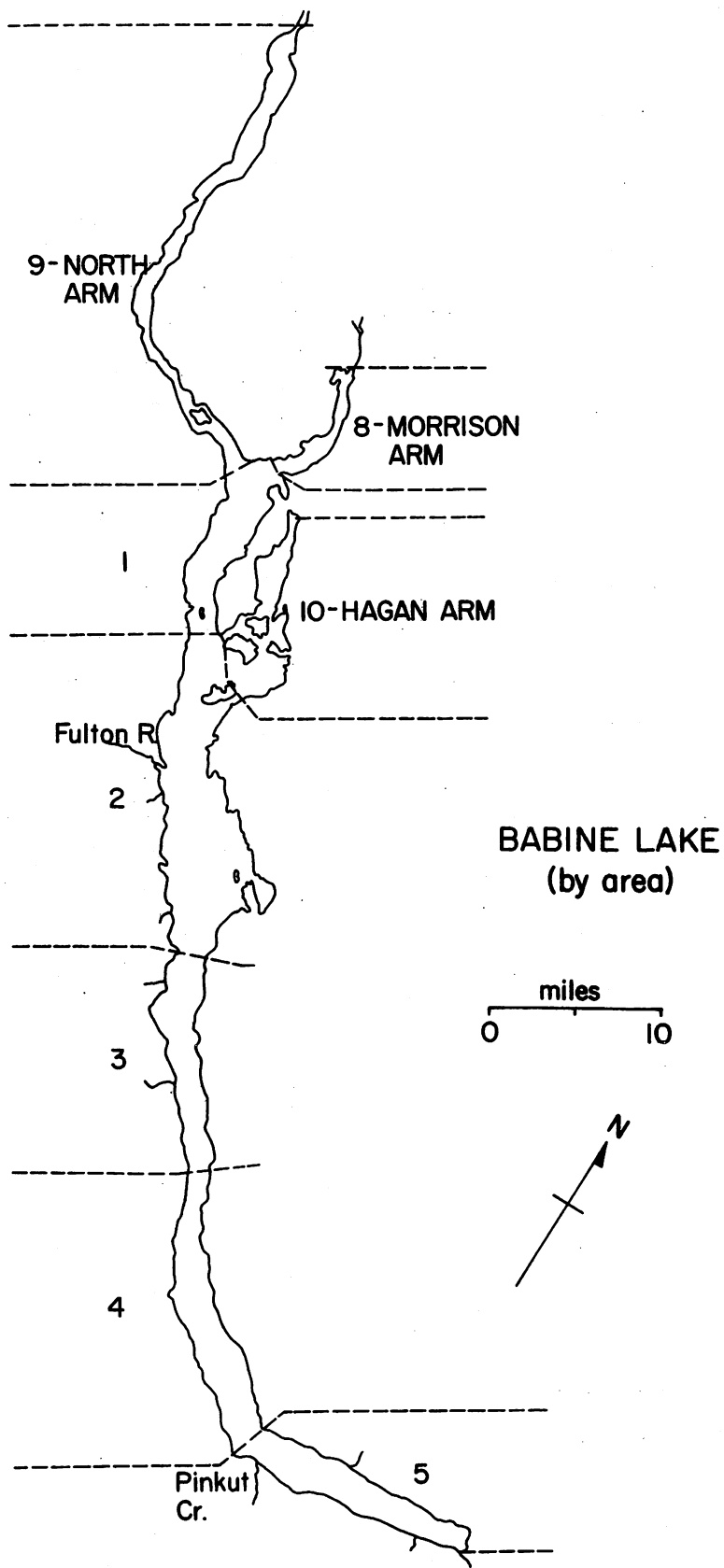


Fig. 1. Babine Lake showing the Fulton River and fishing areas.

AREA I

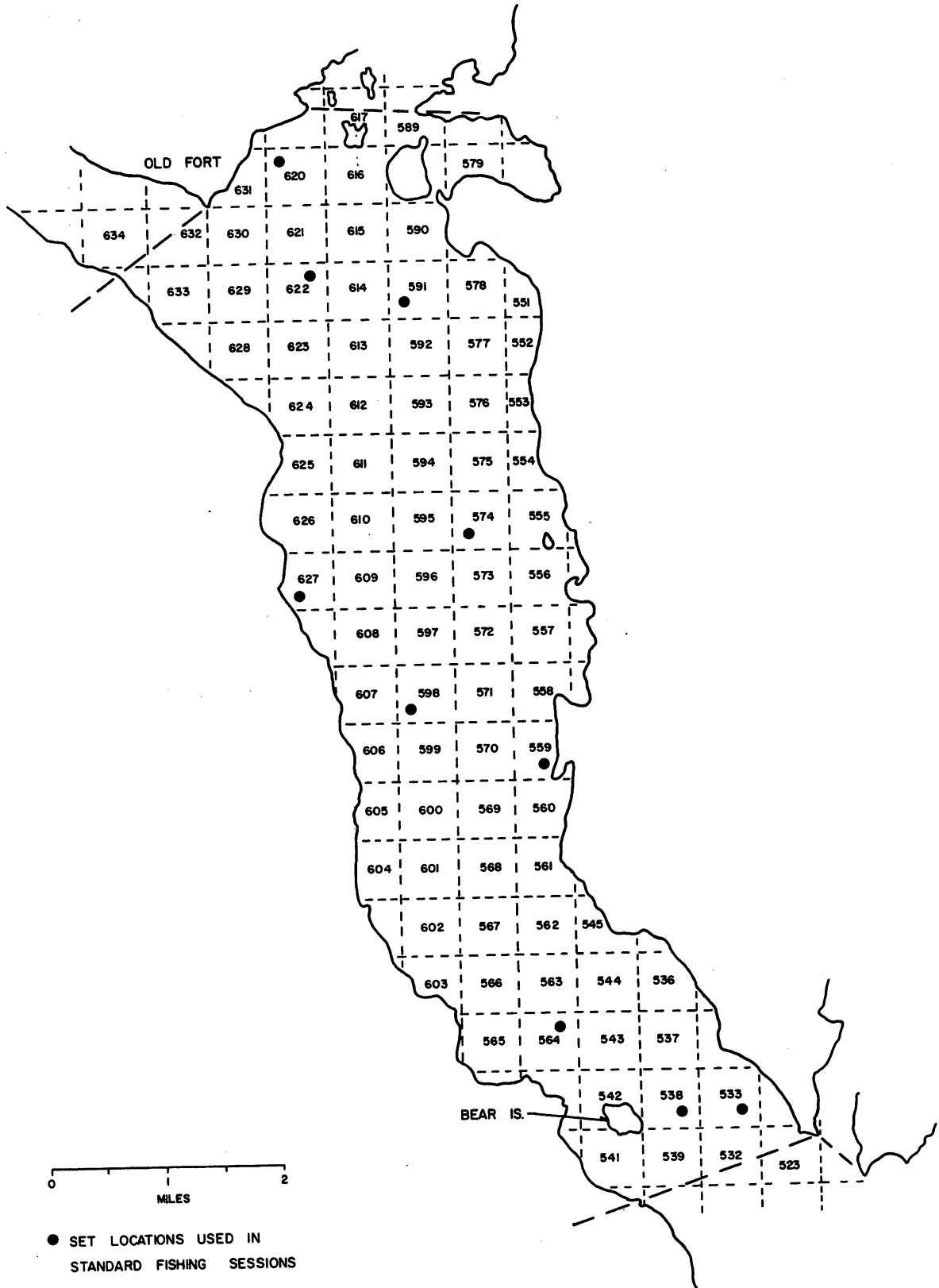


Fig. 2. Area I: set locations.

AREA 2

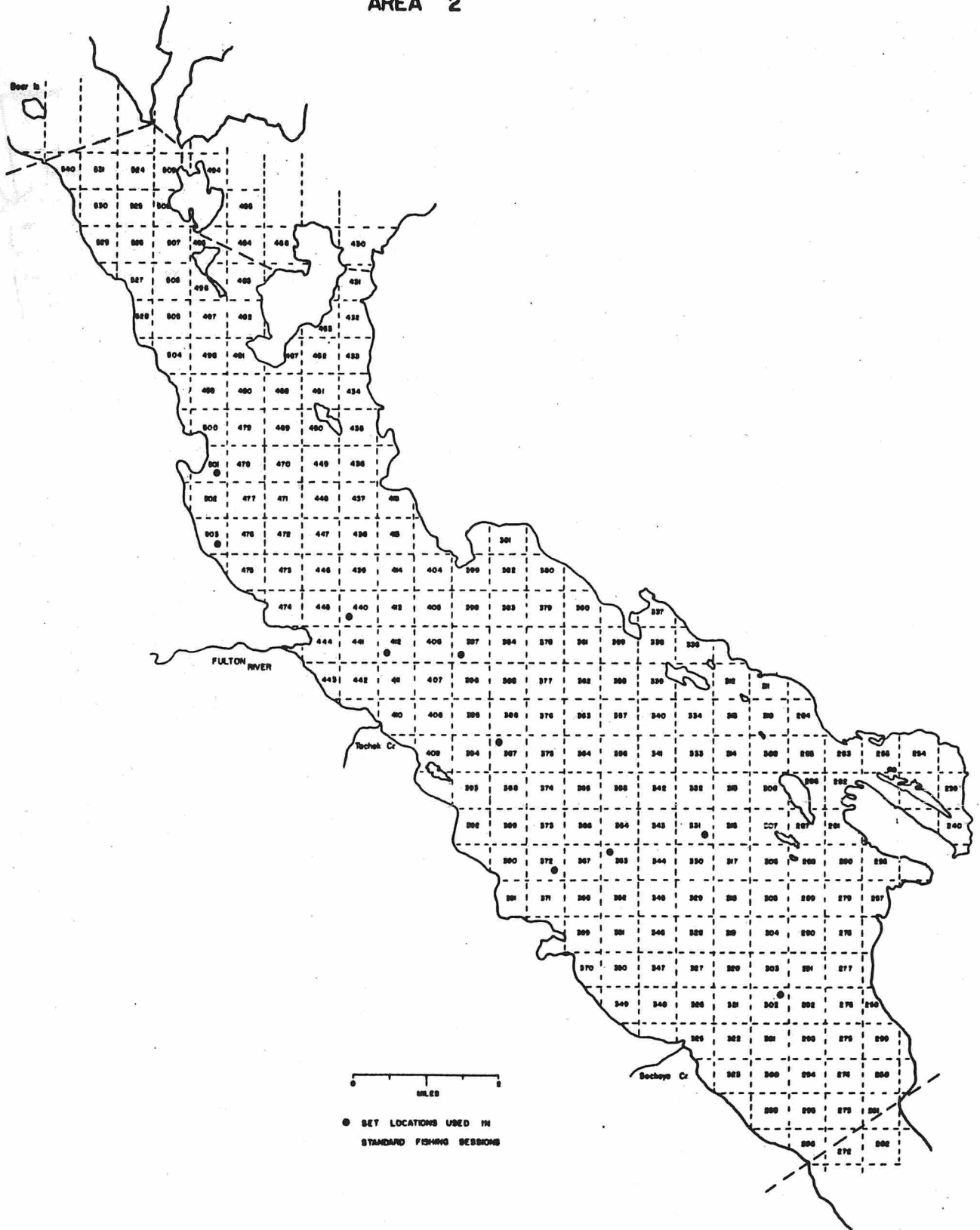


Fig. 3. Area 2: set locations.

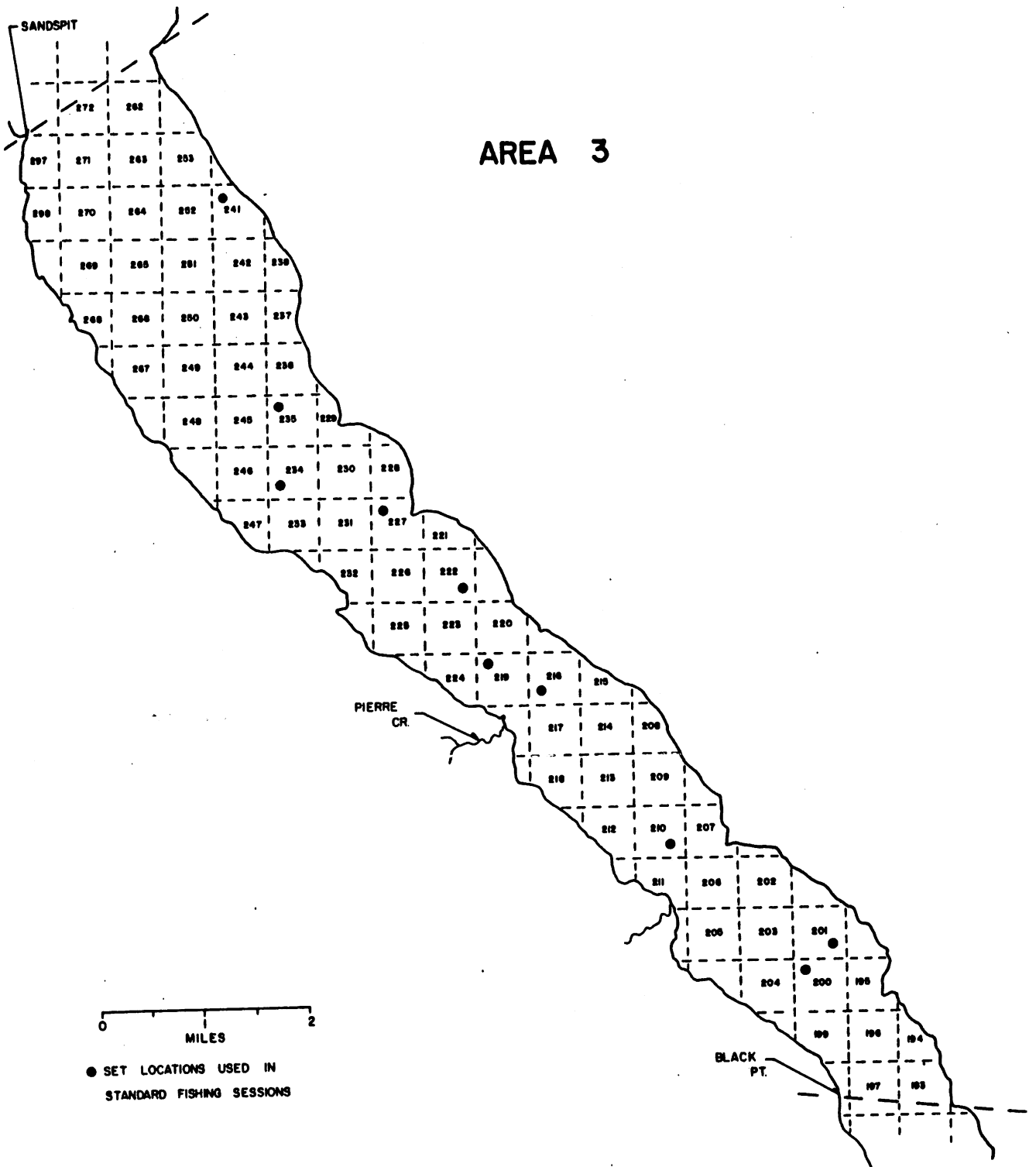


Fig. 4. Area 3: set locations.

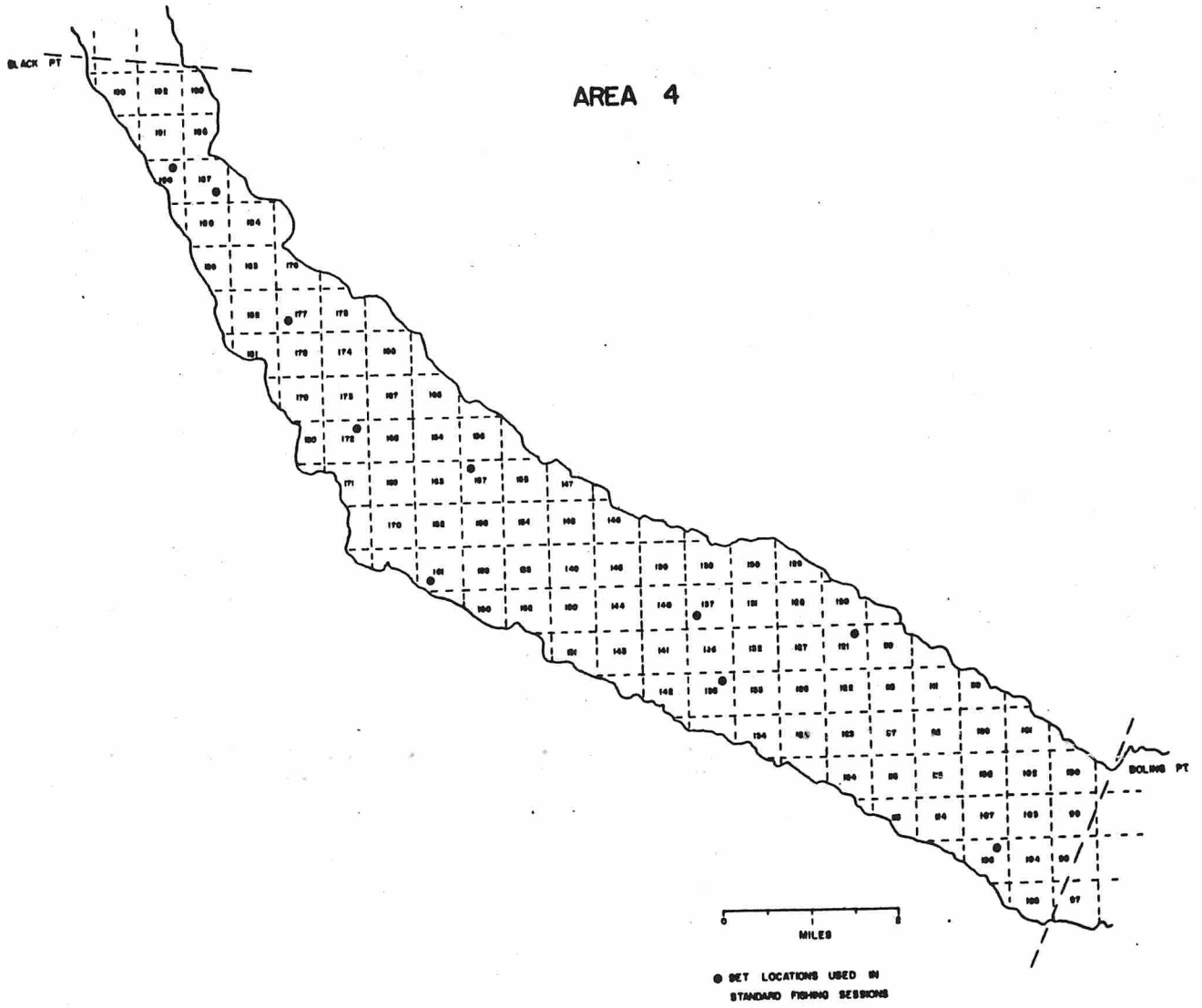


Fig. 5. Area 4: set locations.

AREA 5

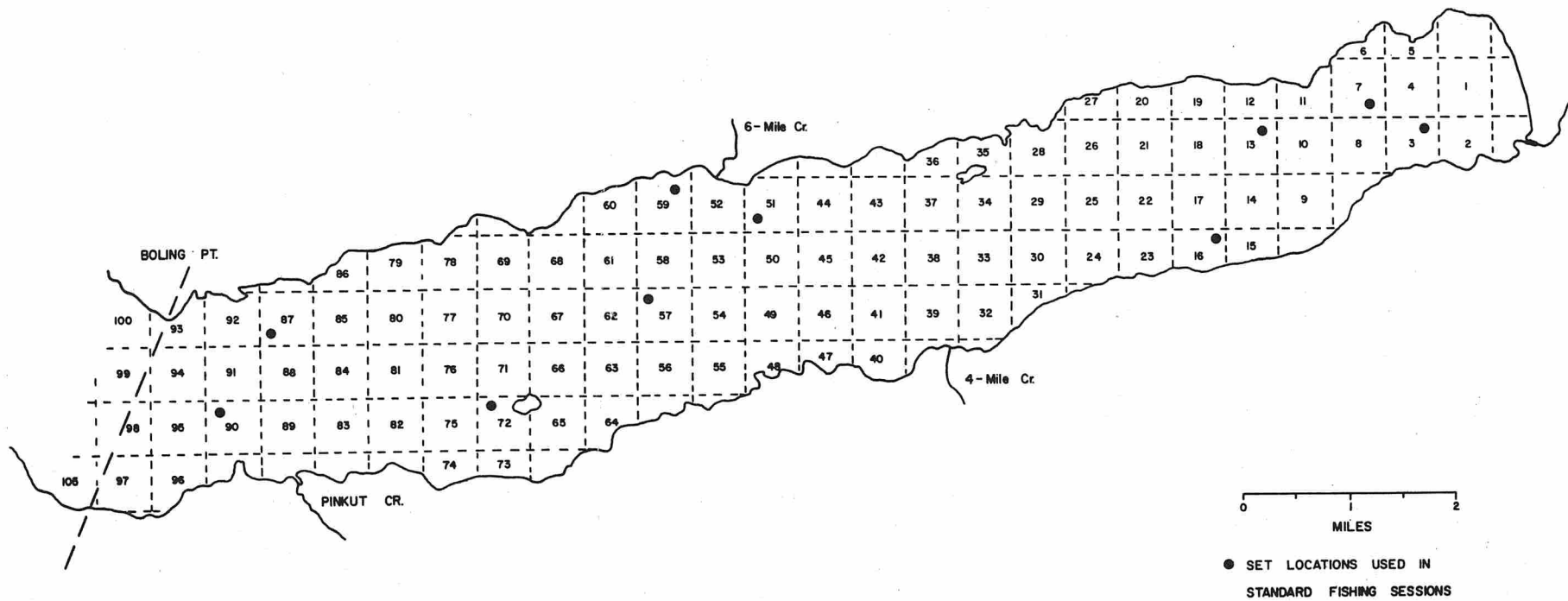


Fig. 6. Area 5: set locations.

AREA 9 (NORTH ARM)

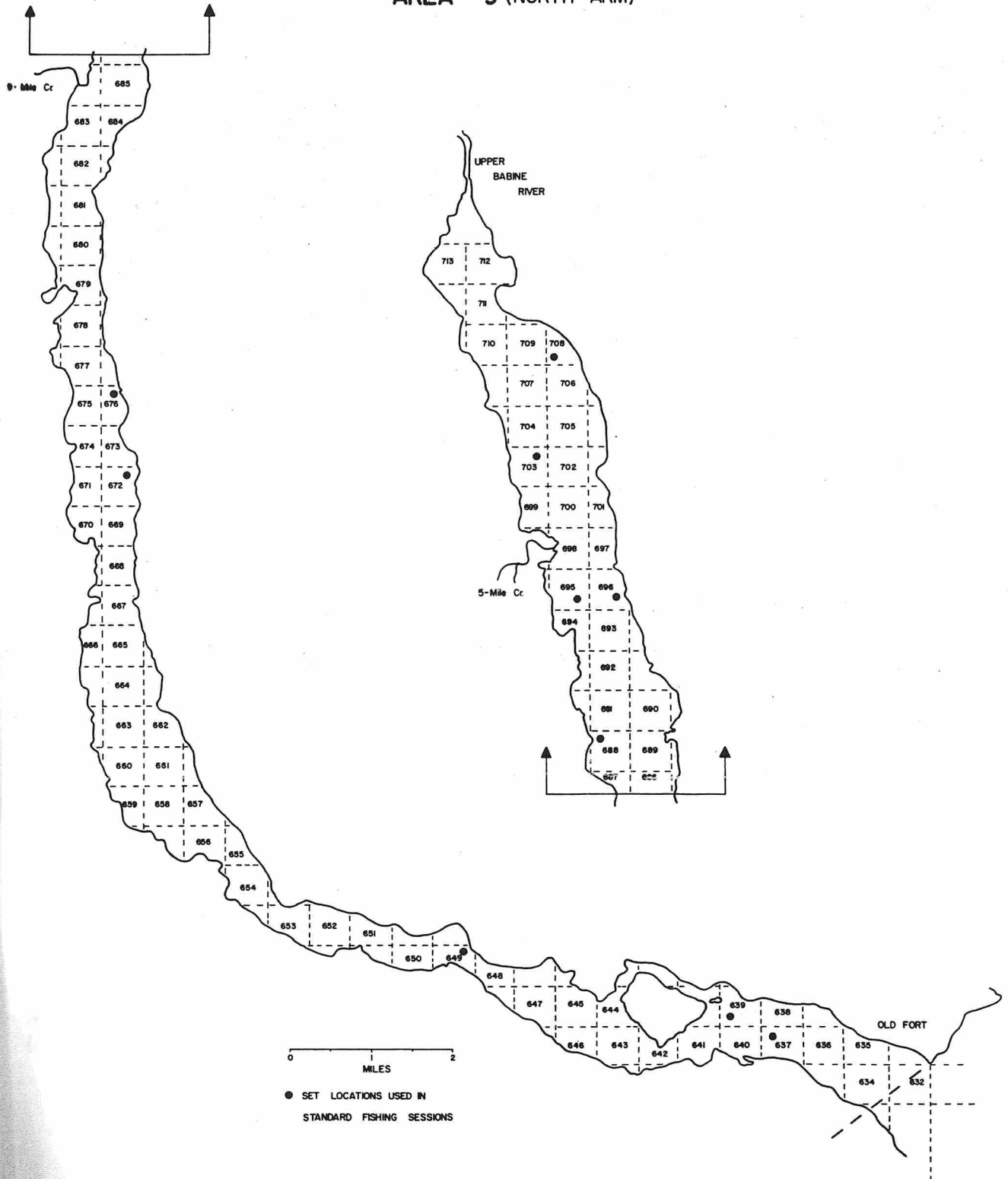


Fig. 7. Area 9: set locations.

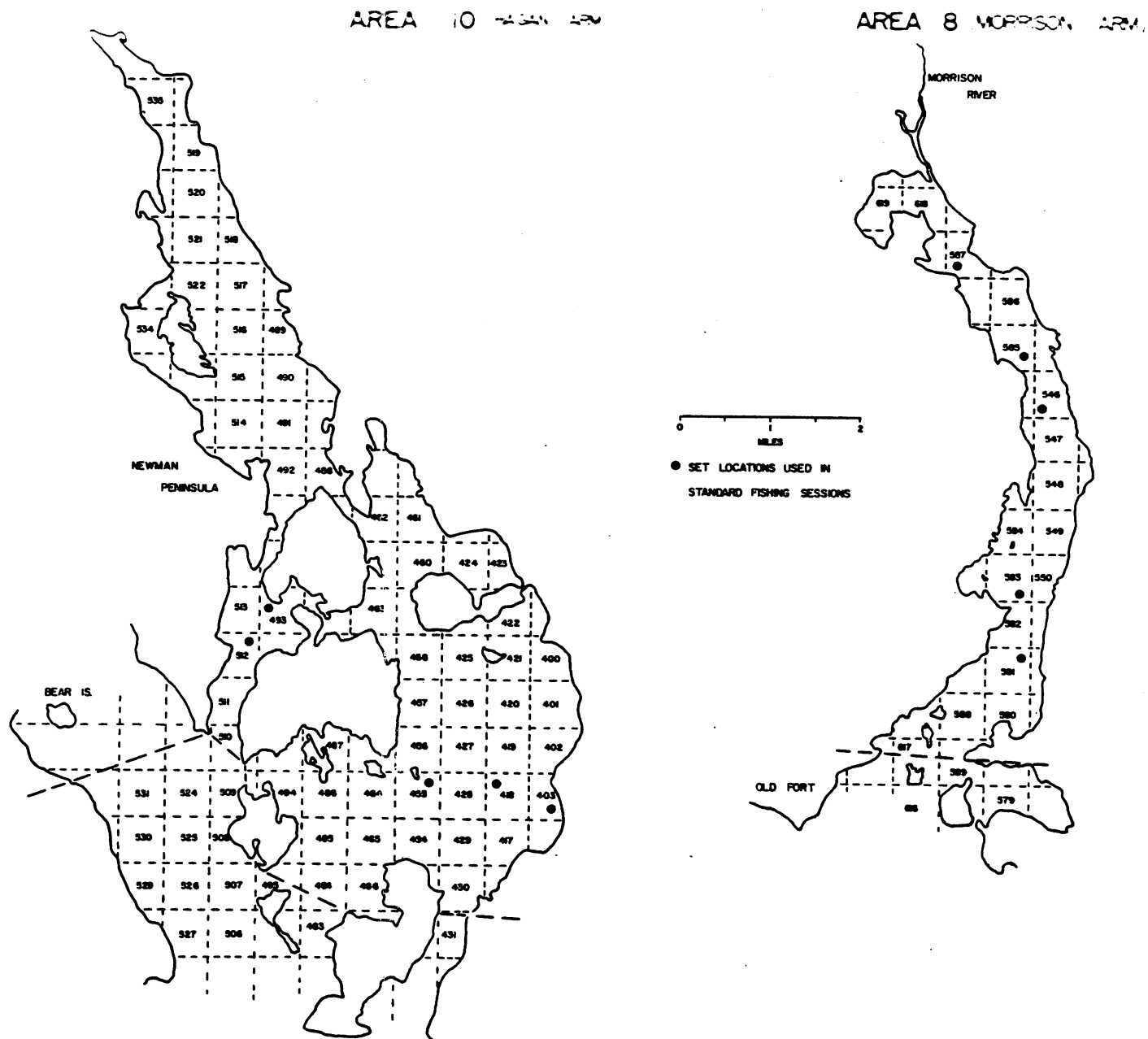


Fig. 8. Areas 8 and 10: set locations.

Table 1. Purse seine catches, 1971: catches of Oncorhynchus nerka.

Date	Set number	Area	Location	Time	Underyearlings (Age 0)			Age I and older	Adult sockeye	
					Total catch	No. of marked fish recovered				
						L.P.	R.P.			D.P.
May 19	1	3	226	21:02	1	-	-	-	1	-
	2	3	226	22:11	10	-	-	-	55	-
	3	3	226	23:00	36	-	-	-	42	-
20	4	3	226	00:01	37	-	-	-	91	-
	5	3	226	20:58	-	-	-	-	-	-
	6	3	226	22:00	6	-	-	-	85	-
	7	3	226	23:01	16	-	-	-	51	-
21	8	3	226	00:01	52	-	-	-	31	-
	9	3	226	01:00	32	-	-	-	43	-
	10	3	226	02:03	22	-	-	-	81	-
	11	3	226	03:01	6	-	-	-	27	-
	12	3	226	04:01	1	-	-	-	26	-
	13	3	226	04:58	1	-	-	-	1	-
23	14	3	197	22:16	12* (0)	-	-	-	300*	-
24	15	3	226	00:01	26	-	-	-	2	-
26	16	3	197	22:55	27	-	-	-	17	-
27	17	3	226	22:30	17	-	-	-	51	-
	18	2	302	23:56	209	1	-	-	39	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)					
					Total catch	No. of marked fish recovered			Age I and older	Adult sockeye
						L.P.	R.P.	D.P.		
June 2	19	3	226	21:30	-	-	-	-	-	-
	20	3	226	22:39	25	-	-	-	52	-
3	21	3	226	23:28	142	1	-	-	38	-
	22	3	226	00:28	129	1	-	-	28	-
	23	3	226	01:30	108	-	-	-	12	-
	24	3	226	02:29	195	-	-	-	24	-
	25	3	226	03:30	62	-	-	2	34	-
	26	3	226	04:29	-	-	-	-	75*	-
	27	3	197	22:47	121	-	-	-	33	-
	28	3	226	00:08	242	-	-	-	44	-
4	29	2	302	01:21	557	4	-	1	16	-
	30	3	197	22:47	1,139	3	-	1	215	-
10	31	3	226	00:17	302	1	-	-	14	-
	32	2	302	01:41	224	1	-	-	47	-
16	33	3	226	21:47	211	1	-	1	31	-
	34	3	226	22:45	152	-	-	-	22	-
	35	3	226	23:43	532	2	-	-	34	-
17	36	3	226	00:45	231	-	-	-	20	-
	37	3	226	01:16	520	2	-	-	38	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye	
						No. of marked fish recovered					
						L.P.	R.P.	D.P.			
June 17	38	3	226	02:45	556	2	-	-	39	-	
	39	3	226	03:46	62	-	-	-	14	-	
	40	3	226	04:44	2	-	-	-	7	-	
	41	3	197	21:41	3,000* (879)	2	-	2	30*	-	
	42	3	226	23:11	1,047	7	1	3	49	-	
18	43	2	302	00:34	153	-	-	1	88	-	
July 3	44	5	3-B	22:40	314	1	1	-	123	-	
	45	5	7-D	23:35	745	-	6	-	86	-	
	4	46	5	13-B	00:32	453	1	3	-	13	-
		47	5	16-B	01:22	945	-	5	1	76	-
		48	5	51-C	02:32	135	-	-	-	67	-
		49	5	59-B	03:15	117	-	-	-	89	-
	5	50	5	57-A	22:39	289	2	-	1	309	-
		51	5	72-A	23:36	729	2	1	-	74	-
		52	5	87-C	00:39	200	2	-	-	19	-
		53	5	90-A	01:29	983	3	-	-	28	-
54		4	106-B	02:32	460	-	-	-	45	-	
6	55	4	121-B	22:38	156	-	-	-	52	-	

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye	
						No. of marked fish recovered					
						L.P.	R.P.	D.P.			
July 6	56	4	135-B	23:27	202	1	-	-	16	-	
	7	57	4	137-C	00:09	140	-	-	-	1	-
		58	4	161-C	01:08	128	-	-	1	6	-
		59	4	157-A	01:43	225	-	-	-	8	-
		60	4	172-B	02:27	142	-	-	1	9	-
		61	4	177-C	22:41	261	1	-	-	102	-
		62	4	187-D	23:35	769	3	-	1	87	-
8	63	4	190-B	00:25	343	-	-	-	51	-	
	64	3	200-A	01:25	353	1	-	-	88	-	
	65	3	201-D	02:16	360	-	-	1	77	-	
	66	3	210-D	03:07	219	-	-	-	35	-	
	67	3	216-C	22:39	335	1	-	1	156	-	
	68	3	219-A	23:29	201	1	-	-	29	-	
	9	69	3	222-D	00:12	104	-	-	-	23	-
70		3	227-A	00:57	119	1	-	-	24	-	
71		3	234-C	01:50	169	-	1	-	43	-	
72		3	235-A	02:39	174	-	-	-	30	-	
73		3	241-A	03:23	104	-	1	-	62	-	
74		10	463-D	22:36	6	-	-	-	16	-	

(cont'd)

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)			Age I and older	Adult sockeye	
					Total catch	No. of marked fish recovered				
						L.P.	R.P.			D.P.
July 9	75	10	458-A	23:21	10	-	-	-	107	-
10	76	10	426-C	00:06	4	-	-	-	15	-
	77	10	428-C	00:44	7	-	-	-	14	-
	78	2	501-D	01:46	22	-	-	-	23	-
	79	2	503-D	02:30	21	-	-	-	3	-
	80	2	440-C	03:16	78	-	-	-	27	-
	81	2	302-B	22:32	431	1	-	-	72	-
	82	2	331-D	23:14	96	-	-	-	25	-
	83	2	353-A	23:54	269	-	-	-	32	-
11	84	2	372-D	00:21	85	-	-	-	34	-
	85	2	387-A	01:30	190	-	-	-	46	-
	86	2	397-C	02:11	156	1	-	-	62	-
	87	2	412-C	02:54	95	-	-	-	58	-
	88	1	574-C	22:32	46	-	-	-	51	-
	89	1	627-C	23:13	32	-	-	-	91	-
	90	1	598-C	23:54	18	-	-	-	39	-
12	91	1	559-D	00:45	28	-	-	-	52	-
	92	1	564-B	01:31	39	-	-	-	72	-
	93	1	538-B	02:21	34	-	-	-	57	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye
						No. of marked fish recovered				
						L.P.	R.P.	D.P.		
July 12	94	1	533-D	02:54	29	-	-	-	44	-
	95	1	620-A	22:33	9	-	-	-	8	-
	96	1	622-B	23:08	5	-	-	-	13	-
	97	1	591-C	23:46	5	-	-	-	33	-
	13	98	9	707-D	22:29	2,000* (699)	-	-	-	33*
99		9	685-A	23:32	375	-	-	-	13	-
14	100	9	674-B	00:41	214	-	-	-	9	-
	Aug. 16	101	5	3-B	21:27	37	-	-	-	4
102		5	7-D	22:06	132	-	1	-	3	-
103		5	13-B	22:45	44	-	-	-	2	-
104		5	16-B	23:27	84	-	-	1	-	-
17		105	5	51-C	00:34	30	-	-	-	5
	106	5	59-B	01:14	13	-	-	-	1	2
	107	5	57-A	21:25	207	-	-	-	2	-
	108	5	72-A	22:01	76	-	-	-	2	-
	109	5	87-C	22:52	204	-	-	-	2	-
18	110	5	90-A	23:37	43	-	-	-	1	-
	111	4	106-B	00:27	824	1	-	-	3	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye	
						No. of marked fish recovered					
						L.P.	R.P.	D.P.			
Aug. 18	112	4	121-B	01:37	915	2	-	-	4	-	
	113	4	135-B	02:24	107	-	-	-	-	-	
	114	4	137-C	03:07	473	-	1	-	-	-	
	115	4	161-C	04:17	149	-	-	-	8	-	
	19	116	4	157-A	21:12	8,000* (2,218)	2	3	2	75*	-
		117	4	172-B	21:55	827	-	4	-	2	2
		118	4	177-C	22:43	1,229	-	1	-	3	-
		119	4	187-D	23:29	373	1	-	-	3	1
		120	4	190-B	00:12	77	-	-	-	1	-
20	121	3	200-A	01:06	981	-	4	-	4	-	
	122	3	201-D	01:51	16	-	1	-	3	-	
	123	3	210-D	02:43	303	-	-	-	9	-	
	124	3	216-C	03:37	211	2	-	-	5	-	
	125	3	219-A	04:17	45	-	1	-	3	-	
21	126	3	222-D	21:15	545	-	1	1	5	1	
	127	3	227-A	21:58	18	-	-	-	2	1	
	128	3	234-C	22:40	187	-	1	-	10	2	
	129	3	235-A	23:21	63	-	-	-	4	2	

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye
						No. of marked fish recovered				
						L.P.	R.P.	D.P.		
Aug. 22	130	3	241-A	00:14	125	-	-	-	21	-
	131	2	302-B	01:18	332	1	1	-	5	1
	132	2	331-D	02:15	587	-	1	-	2	-
	133	2	353-A	03:04	1,155	4	2	2	22	3
	134	2	372-D	03:54	81	-	-	-	2	-
	135	2	387-A	04:40	1,889	1	3	1	16	-
	136	2	397-C	21:21	173	-	-	-	2	-
	137	2	412-C	22:23	126	-	-	1	1	2
	138	2	440-C	22:47	40	-	-	-	-	-
	139	2	503-D	23:41	6	-	-	-	-	3
	140	2	501-D	00:27	21	-	-	-	2	-
23	141	9	708-C	21:41	4,000* (508)	-	-	-	-	1
24	142	9	703-B	22:18	3,000* (765)	-	-	-	1	2
	143	9	695-D	23:05	123	-	-	-	2	1
	144	9	696-D	23:41	969	-	-	-	2	2
	145	9	688-A	00:29	310	-	-	-	9	-
25	146	9	676-B	01:36	3,000* (568)	-	-	-	1	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)						
					Total catch	No. of marked fish recovered			Age I and older	Adult sockeye	
						L.P.	R.P.	D.P.			
Aug. 25	147	9	672-B	02:15	1,024	-	-	-	7	-	
	148	9	649-B	03:53	63	-	-	-	17	-	
	149	9	639-C	04:47	61	-	-	-	4	-	
	150	9	637-A	05:18	333	-	-	-	21	2	
	151	8	587-C	21:14	29	-	-	-	15	-	
	152	8	585-D	21:52	20	-	-	-	3	-	
	153	8	546-C	22:27	8	-	-	-	1	-	
	154	8	583-D	23:22	2	-	-	-	8	-	
	26	155	8	581-B	00:01	-	-	-	-	1	-
		156	1	620-A	00:52	15	-	-	-	6	-
		157	1	622-B	01:25	49	-	-	-	-	1
		158	1	591-C	02:00	30	-	-	-	1	-
		159	1	574-C	02:37	41	-	1	-	2	-
		160	1	627-C	03:21	79	-	-	-	-	-
161		1	598-B	04:06	14	-	-	-	1	-	
162		1	559-D	04:47	551	1	-	1	21	-	
163		1	564-B	21:14	954	1	-	2	34	-	
164		1	538-D	21:55	931	2	-	-	20	-	
165		1	533-D	22:37	93	-	1	-	1	-	

- 29 -

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)					
					Total catch	No. of marked fish recovered			Age I and older	Adult sockeye
						L.P.	R.P.	D.P.		
Aug. 26	166	10	493-A	23:29	24	-	-	-	2	-
27	167	10	512-B	00:02	15	-	-	-	7	-
	168	10	455-B	01:05	194	1	-	-	2	-
	169	10	418-A	01:41	16	-	-	-	5	-
	170	10	403-D	02:17	7	-	-	-	4	-
	171	3	197	20:55	1,408	3	1	2	12	-
	172	3	226	22:10	439	1	-	-	14	-
	173	2	302	23:53	20	-	-	-	2	-
Oct. 7	174	5	3-B	19:06	52	-	-	-	53	-
	175	5	7-D	20:05	10	-	1	-	5	-
	176	5	13-B	20:55	7	-	-	-	4	-
	177	5	16-B	21:50	17	-	-	-	1	-
	178	5	51-C	22:47	35	-	-	-	7	-
	179	5	59-B	23:38	24	-	-	-	12	-
8	180	5	57-A	00:30	176	-	-	1	10	-
	181	5	72-A	01:30	330	1	-	-	6	-
	182	5	87-C	02:25	431	1	-	2	4	-
	183	5	90-A	03:18	534	1	-	-	5	-
	184	4	106-B	04:29	498	-	-	-	13	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye
						No. of marked fish recovered				
						L.P.	R.P.	D.P.		
Oct. 8	185	4	121-B	21:46	183	-	2	-	-	-
	186	4	135-B	22:37	248	-	-	1	3	-
9	187	4	137-C	23:26	206	1	1	-	-	-
	188	4	161-C	00:31	130	-	-	-	9	-
	189	4	157-A	01:27	300	-	1	-	18	-
	190	4	172-B	02:15	152	-	1	-	1	-
	191	4	177-C	03:06	464	-	4	1	7	-
	192	4	187-D	04:06	309	-	-	1	10	-
	193	4	190-B	04:55	192	-	-	-	8	-
	194	3	200-A	19:21	337	-	1	-	53	-
	195	3	201-D	20:17	214	1	-	-	7	-
	196	3	210-D	21:12	183	-	-	-	4	-
	197	3	216-C	22:02	41	-	-	-	1	-
198	3	219-A	22:42	53	-	-	-	-	-	
199	3	222-D	23:35	383	-	-	-	2	-	
10	200	3	227-A	00:26	452	-	1	-	4	-
	201	3	234-C	01:13	309	1	3	-	4	-
	202	3	235-A	01:54	510	-	1	1	3	-
	203	3	241-A	02:41	282	2	-	-	5	-

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)				Age I and older	Adult sockeye
					Total catch	No. of marked fish recovered				
						L.P.	R.P.	D.P.		
Oct. 10	204	2	302-B	03:45	332	1	1	-	5	-
	205	2	331-D	19:20	622	-	1	2	1	-
11	206	2	353-A	19:06	43	-	-	-	-	-
	207	2	372-D	19:45	53	-	-	-	1	-
	208	2	387-A	20:35	59	-	-	-	-	-
	209	2	397-C	21:14	14	-	-	-	-	-
	210	2	412-C	21:53	20	-	-	-	-	-
	211	2	440-C	22:41	25	-	-	-	1	-
	212	2	503-D	23:38	41	-	1	-	2	-
12	213	2	501-D	00:26	110	-	-	-	1	-
	214	1	533-D	01:56	144	-	-	-	3	-
	215	1	538-D	02:39	90	-	-	-	1	-
	216	1	564-B	03:31	182	-	-	-	2	-
	217	1	559-D	19:25	101	-	-	-	7	-
	218	1	598-C	20:06	130	-	-	-	-	-
	219	1	627-C	20:51	21	-	-	-	-	-
	220	1	574-C	21:37	31	-	-	-	-	-
	221	1	591-C	22:22	45	-	-	-	-	-
	222	1	622-B	23:01	24	-	-	-	-	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Total catch	Underyearlings (Age 0)			Age I and older	Adult sockeye
						No. of marked fish recovered				
						L.P.	R.P.	D.P.		
Oct. 12	223	1	620-A	23:54	10	1	-	-	3	-
13	224	9	708-C	19:06	1,000* (440)	-	-	-	-	-
	225	9	703-B	19:46	385	-	-	-	-	-
	226	9	695-D	20:38	213	1	-	-	-	-
	227	9	696-D	21:16	282	-	-	-	-	-
	228	9	688-A	22:09	316	-	-	-	-	-
	229	9	676-B	23:19	378	-	-	-	3	-
14	230	9	672-B	00:01	212	-	-	-	9	-
	231	9	649-B	01:45	45	-	-	-	2	-
	232	9	639-C	02:52	13	-	-	-	5	-
	233	9	637-A	03:31	43	-	-	-	14	-
	234	8	587-C	19:21	46	-	-	-	71	-
	235	8	585-D	20:09	16	-	-	-	38	-
	236	8	546-C	20:54	7	-	-	-	9	-
	237	8	583-D	21:40	3	-	-	-	29	-
	238	8	581-B	22:26	8	-	-	-	13	-
15	239	10	493-A	00:28	20	-	-	-	5	-
	240	10	512-B	01:14	31	1	-	-	7	-

(cont'd)

Table 1 (cont'd)

Date	Set number	Area	Location	Time	Underyearlings (Age 0)					
					Total catch	No. of marked fish recovered			Age I and older	Adult sockeye
						L.P.	R.P.	D.P.		
Oct. 15	241	10	455-B	02:21	85	-	-	-	5	-
	242	10	418-A	03:01	118	-	-	-	5	-
	243	10	403-D	03:40	104	-	-	-	11	-
17	244	3	197	18:38	788	-	6	-	1	-
	245	3	226	20:01	19	-	-	-	-	-
18	246	2	302	18:38	368	1	-	-	-	-

* Estimated catch.

Table 1. Purse seine catches, 1971 species other than Oncorhynchus nerka.

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-
7	-	1	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	1	-	-	-	-	-	-	-
9	-	1	-	-	-	-	-	-	-	-	-	-
10	-	1	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-
17	-	1	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
5	0	4	0	0	1	0	0	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
19	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	1	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	1	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	5	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-	-
(7)	0	1	0	0	0	6	0	0	0	0	0	0

(cont'd)

Table 1 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout T.R.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
37	-	-	-	-	-	1	-	-	-	-	-	-
38	-	-	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-	-	-
40	-	-	1	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	1	-	-	-	-	-	-	-	-
43	-	-	-	-	-	1	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-
47	-	1	-	-	-	-	-	-	-	-	-	-
48	-	-	1	-	-	-	-	-	-	-	-	-
49	-	1	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	-	-	-	-	-	-	-	-	-	-
52	-	1	-	-	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-	-	-	-	-
54	-	-	1	-	-	-	-	-	-	-	-	-
⑨	0	3	3	1	0	2	0	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
55	-	-	1	-	-	-	-	-	-	-	-	-
56	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-
58	-	-	-	-	-	-	-	-	-	-	-	-
59	-	-	-	-	-	-	-	-	-	-	-	-
60	-	-	1	-	-	-	-	-	-	-	-	-
61	-	1	-	-	-	-	-	-	-	-	-	-
62	-	1	1	-	1	-	-	-	-	-	-	-
63	-	-	-	1	-	-	-	-	-	-	-	-
64	-	-	-	-	1	-	-	-	-	-	-	-
65	-	-	-	-	-	1	-	-	-	-	-	-
66	-	-	-	-	-	-	-	-	-	-	-	-
67	-	-	-	-	-	-	-	-	-	-	-	-
68	-	-	-	-	-	-	-	-	-	-	-	-
69	-	-	-	-	1	-	-	-	-	-	-	-
70	-	1	-	-	1	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	-	-
72	-	-	-	-	-	-	-	-	-	-	-	-
73	-	1	-	-	-	-	-	-	-	-	-	-
(13)	0	4	3	1	4	1	0	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
74	-	-	1	-	4	-	-	-	-	-	-	-
75	-	-	-	1	-	-	-	-	-	-	-	-
76	-	-	-	-	1	-	-	-	-	-	-	-
77	-	-	-	-	-	1	-	-	-	-	-	-
78	-	-	1	-	-	1	-	-	-	-	-	-
79	-	-	-	-	-	-	-	-	-	-	-	-
80	-	-	-	-	1	-	-	-	-	-	-	-
81	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-
83	-	-	-	-	-	-	-	-	-	-	-	-
84	-	-	1	-	-	-	-	-	-	-	-	-
85	-	-	-	-	-	-	-	-	-	-	-	-
86	-	-	-	-	-	1	-	-	-	-	-	-
87	-	-	-	1	1	-	-	-	-	-	-	-
88	-	-	-	-	1	-	-	-	-	-	-	-
89	-	-	-	-	-	-	-	-	-	-	-	-
90	-	-	1	1	-	-	-	-	-	-	-	-
91	-	-	-	-	-	-	-	-	-	-	-	-
92	-	-	1	-	-	-	-	-	-	-	-	-
(19)	0	0	5	3	8	3	0	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
93	-	-	-	-	-	1	-	-	-	-	-	-
94	-	-	-	-	-	-	-	-	-	-	-	-
95	-	-	-	-	-	-	-	-	-	-	-	-
96	-	-	1	-	-	-	-	-	-	-	-	-
97	-	-	-	-	-	-	-	-	-	-	-	-
98	-	-	-	-	2	-	-	-	-	-	-	-
99	-	-	1	4	-	-	-	-	-	2	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-
101	-	-	-	-	-	-	-	-	-	-	-	-
102	-	-	-	-	-	-	-	-	-	-	-	-
103	-	-	-	-	-	-	1	-	-	-	-	-
104	-	-	1	-	-	-	3	-	-	-	-	-
105	-	-	1	-	-	-	-	-	-	-	-	-
106	-	-	-	-	1	-	1	-	-	-	-	-
107	-	-	-	-	-	-	-	-	-	-	-	-
108	-	-	-	-	-	-	-	-	-	-	-	-
109	-	-	2	-	-	-	-	-	-	-	-	-
110	-	-	1	-	-	-	-	-	-	-	-	-
(2)	0	0	7	4	3	1	5	0	0	2	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
111	-	-	1	-	-	1	-	-	-	-	-	-
112	-	-	1	-	-	-	-	-	-	-	-	-
113	-	-	1	-	-	-	-	-	-	-	-	-
114	-	-	1	-	-	-	1	-	-	-	-	-
115	-	-	-	-	-	1	1	-	-	-	-	-
116	-	-	-	-	-	-	-	-	-	-	-	-
117	-	-	4	-	-	-	1	-	-	-	-	-
118	-	-	1	-	-	-	-	-	-	-	-	-
119	-	-	1	-	-	-	-	-	-	-	-	-
120	-	-	-	-	-	1	-	-	-	-	-	-
121	-	-	-	-	-	-	-	-	-	-	-	-
122	-	-	-	-	-	1	-	-	-	-	-	-
123	-	-	1	-	-	-	-	-	-	-	-	-
124	-	-	-	-	-	-	-	-	-	-	-	-
125	-	-	-	-	-	-	-	-	-	-	-	-
126	-	-	-	-	-	-	-	-	-	-	-	-
127	-	-	-	-	-	-	1	-	-	-	-	-
128	-	-	-	-	-	-	-	-	-	-	-	-
(19)	0	0	11	0	0	4	4	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
129	-	-	1	-	-	-	-	-	-	-	-	-
130	-	-	-	-	-	-	-	-	-	-	-	-
131	-	-	3	-	-	-	-	-	-	-	-	-
132	-	-	-	-	-	-	-	-	-	-	-	-
133	-	-	1	-	-	-	-	-	-	-	-	-
134	-	-	1	-	1	-	1	-	-	-	-	-
135	-	-	-	-	-	-	-	-	-	-	-	-
136	-	-	2	-	-	-	-	-	-	-	-	-
137	-	-	1	-	-	-	-	-	-	-	-	-
138	-	-	-	-	-	1	-	-	-	-	-	-
139	-	-	-	-	-	2	6	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-	-
141	-	-	1	-	-	-	-	-	-	-	-	-
142	-	-	4	-	-	-	-	-	-	-	-	-
143	-	-	3	-	-	-	-	-	-	-	-	-
144	-	-	1	-	-	-	-	-	-	-	-	-
145	-	-	1	-	-	-	-	-	-	-	-	-
146	-	-	3	-	-	1	-	-	-	-	-	-
(34)	0	0	22	0	1	4	7	0	0	0	0	(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
147	-	1	-	-	-	3	-	-	-	-	-	-
148	-	-	-	-	1	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	1	-	-	2	-	-	-	-	-	-
151	-	-	-	-	1	-	1	-	-	-	-	-
152	-	-	2	-	4	3	5	-	-	-	-	-
153	-	-	2	-	1	-	35	-	1	-	-	-
154	-	-	-	-	1	3	23	1	-	-	2	-
155	-	-	-	-	1	2	16	-	-	-	-	-
156	-	-	1	-	-	-	2	-	-	-	-	-
157	-	-	-	-	-	-	-	-	-	-	-	-
158	-	-	1	-	-	-	-	-	-	-	-	-
159	-	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	1	-	-	-	-	-	-
161	-	-	-	-	-	-	-	-	-	-	-	-
162	-	-	-	-	-	-	-	-	-	-	-	-
163	-	-	-	-	-	-	-	-	-	-	-	-
164	-	-	-	-	1	-	-	-	-	-	-	-
(118)	0	1	7	0	10	14	82	1	1	0	2	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
165	-	-	3	-	-	-	-	-	-	-	-	-
166	-	-	-	-	1	-	-	-	-	-	-	-
167	-	-	-	-	-	-	-	-	-	-	1	-
168	-	-	-	-	-	-	-	-	-	-	-	-
169	-	-	1	-	-	-	-	-	-	-	-	-
170	-	-	-	-	1	-	-	-	-	-	-	-
171	-	-	-	-	-	-	-	-	-	-	-	-
172	-	-	-	-	-	-	-	-	-	-	-	-
173	-	-	1	-	-	-	-	-	-	-	-	-
174	-	-	-	-	-	-	-	-	-	-	-	-
175	-	-	1	-	-	-	-	-	-	-	-	-
176	-	-	-	-	-	-	-	-	-	-	-	-
177	-	-	-	-	-	-	-	-	-	-	-	-
178	-	-	-	-	-	-	-	-	-	-	-	-
179	-	-	-	-	-	-	-	-	-	-	-	-
180	-	-	2	-	-	-	-	-	-	-	-	-
181	-	-	-	1	-	-	-	-	-	-	-	-
182	-	-	1	-	-	0	0	0	0	0	1	0
(13)	0	0	9	1	2	0	0	0	0	0	1	(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
183	-	-	-	-	-	-	-	-	-	-	-	-
184	-	-	-	-	-	-	-	-	-	-	-	-
185	-	-	-	-	-	-	-	-	-	-	-	-
186	-	-	1	-	-	-	-	-	-	-	-	-
187	-	-	-	-	-	-	-	-	-	-	-	-
188	-	-	1	-	-	-	-	-	-	-	-	-
189	-	-	1	-	-	-	-	-	-	-	-	-
190	-	-	-	-	-	-	-	-	-	-	-	-
191	-	-	2	-	-	-	-	-	-	-	-	-
192	-	-	1	-	-	-	-	-	-	-	-	-
193	-	-	2	-	-	-	-	-	-	-	-	-
194	-	-	-	-	-	-	-	-	-	-	-	-
195	-	-	1	-	-	-	-	-	-	-	-	-
196	-	-	-	-	-	-	-	-	-	-	-	-
197	-	-	4	-	-	-	-	-	-	-	-	-
198	-	-	-	-	-	-	-	-	-	-	-	-
199	-	-	3	-	-	-	-	-	-	-	-	-
200	-	-	-	-	-	-	-	-	-	-	-	-
(16)	0	0	16	0	0	0	0	0	0	0	0	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
201	-	-	-	-	-	-	-	-	-	-	-	-
202	-	-	1	-	-	-	-	-	-	-	-	-
203	-	-	2	-	-	-	-	-	-	-	-	-
204	-	-	1	-	-	-	-	-	-	-	-	-
205	-	-	-	-	-	-	-	-	-	-	-	-
206	-	-	-	-	-	-	-	-	-	-	-	-
207	-	-	1	-	-	-	-	-	-	-	-	-
208	-	-	1	-	-	-	-	-	-	-	-	-
209	-	-	-	-	-	-	-	-	-	-	-	-
210	-	-	-	-	-	-	-	-	-	-	-	-
211	-	-	-	-	-	-	-	-	-	-	-	-
212	-	-	1	-	-	-	-	-	-	-	-	-
213	-	-	-	-	-	-	-	-	-	-	-	-
214	-	-	1	-	-	-	-	-	-	-	-	-
215	-	-	-	-	-	-	-	-	-	-	-	-
216	-	-	-	-	-	-	-	-	-	-	-	-
217	-	-	1	-	-	-	-	-	-	-	-	-
218	0	0	9	0	6	0	0	0	0	0	0	0

(cont'd)

(9)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
219	-	-	1	-	-	-	-	-	-	-	-	-
220	-	-	1	-	-	-	-	-	-	-	-	-
221	-	-	-	-	-	-	-	-	-	-	-	-
222	-	-	-	-	-	-	-	-	-	-	-	-
223	-	-	-	-	2	2	-	-	-	-	-	-
224	-	-	2	-	-	-	-	-	-	-	-	-
225	-	-	1	-	-	-	-	-	-	-	-	-
226	-	-	1	-	-	-	-	-	-	-	-	-
227	-	-	-	-	-	-	-	-	-	-	-	-
228	-	-	-	-	-	-	-	-	-	-	-	-
229	-	-	-	-	-	-	-	-	-	-	-	-
230	-	-	-	-	-	5	-	-	-	-	-	-
231	-	-	-	-	-	3	-	-	1	-	2	-
232	-	-	-	-	-	3	-	-	-	-	-	-
233	-	-	-	-	1	3	-	-	-	-	-	-
234	-	-	-	-	-	6	-	-	-	-	4	-
235	-	-	-	-	2	3	-	-	-	-	7	-
236	-	-	-	-	1	2	-	-	-	-	-	-
(53)	0	0	6	0	6	27	0	0	1	0	13	0

(cont'd)

Table 2 - (cont'd)

Set number	Juvenile coho	Juvenile pinks	Trout R.T.	Char L.T.	Whitefish	Sculpins	Redside shiner	Suckers	Ling	Squawfish	Peamouth chub	Unidentified
237	-	-	-	4	3	11	-	-	-	-	18	-
238	-	-	-	1	4	-	-	-	-	-	-	-
239	-	-	-	-	-	-	-	-	-	-	-	-
240	-	-	-	-	-	-	-	-	-	-	-	-
241	-	-	1	-	-	1	-	-	-	-	-	-
242	-	-	-	-	-	-	-	-	-	-	-	-
243	-	-	-	-	-	2	-	-	-	-	-	-
244	-	-	2	1	-	-	-	-	-	-	-	-
245	-	-	-	-	-	-	-	-	-	-	-	-
246	-	-	-	1	-	-	-	-	-	-	-	-
	0	0	3	7	7	14	0	0	0	0	18	0

(49)