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STATE OF ALASKA

William A. Egan, Governor



ANNUAL REPORT OF PROGRESS, 1962 - 1963

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-4

SPORT FISH INVESTIGATIONS OF ALASKA

Alaska Department of Fish and Game

Walter Kirkness, Commissioner

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Alex H. McRea, Director

Sport Fish Division

Richard Haley, Coordinator

INTRODUCTION

This report of progress consists of Job Segment Reports from the State of Alaska Federal Aid in Fish Restoration Project F-5-R-4, "Sport Fish Investigations of Alaska".

The project is composed of 25 separate studies designed to evaluate the various aspects of the State's recreational fishery resources. While some studies are of a more general nature and deal with gross investigational projects, others have been developed to evaluate specific problem areas. These include studies of king salmon, silver salmon, grayling and State Access requirements. The information gathered will provide the necessary background data for a better understanding of local management problems and development of future investigational studies.

The assembled progress reports may be considered fragmentary in many respects due to the continuing nature of the respective studies. The interpretations contained therein, therefore, are subject to re-evaluation as work progresses and additional information is acquired.

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

State: ALASKA Name: Sport Fish Investigations of Alaska.

Project No: F-5-R-4 Title: Inventory and Cataloging of the Sport Fish and Sport Fish Waters of Southwest Alaska.

Job No: 5-A

Period Covered: July, 1962 to June, 1963.

Abstract:

Inventory and cataloging activities were carried on in areas adjacent to the road system on Kodiak Island.

The programs of past years were reviewed and used as aids to project continuity.

Standard survey techniques were used throughout the program and the results were tabulated.

Recommendations for management are given for several bodies of water.

Objectives:

To evaluate the extent, the potential and the current use of the waters readily available to the area's anglers.

To determine the relative need for further management investigations and to direct the course of such studies.

Introduction:

Sport fisheries in the southwestern area are primarily concerned with anadromous salmonoid fishes. An attempt has been made this year to experimentally introduce the Arctic Grayling, Thymallus arcticus, into the Kodiak area. For all practical purposes, no "dry fly" type fishing is available to Kodiak sportsmen, and it is felt that the grayling will fill this gap in the fishery. The grayling were introduced, experimentally, as yolk-sack fry, into three lakes; NC#54, on Pasagshak Point, AL#3, near Anton Larsen Bay road, and CC#42, at Pony Point. A total of approximately 60,000 grayling fry were planted in the three lakes.

The most important area concerned in these investigations is shown in Figure 1.

Investigations of a reconnaissance nature were made on some of the outlying fisheries (Table 1).

Techniques Used:

Information gathered during the past two seasons has been used to guide the course of future work by providing continuity of effort and avoiding repetition of phases already accomplished.

Species distribution and estimates of comparative abundance have been made by using variable mesh gill nets, limited creel census and through visual observation (Table 2).

Standard lake survey techniques were used to determine physical, chemical and biological properties. Surface and volumetric surveys were accomplished using an alidade, plane table and tripod, stadia rod and fathometer (Table 3).

Water samples were taken with a Kemmerer water sampler and fixed in the field with standard reagents. Dissolved oxygen determinations were made with a Hach DR Colorimeter. Determinations of pH were made with a Hellige Pocket Comparator.

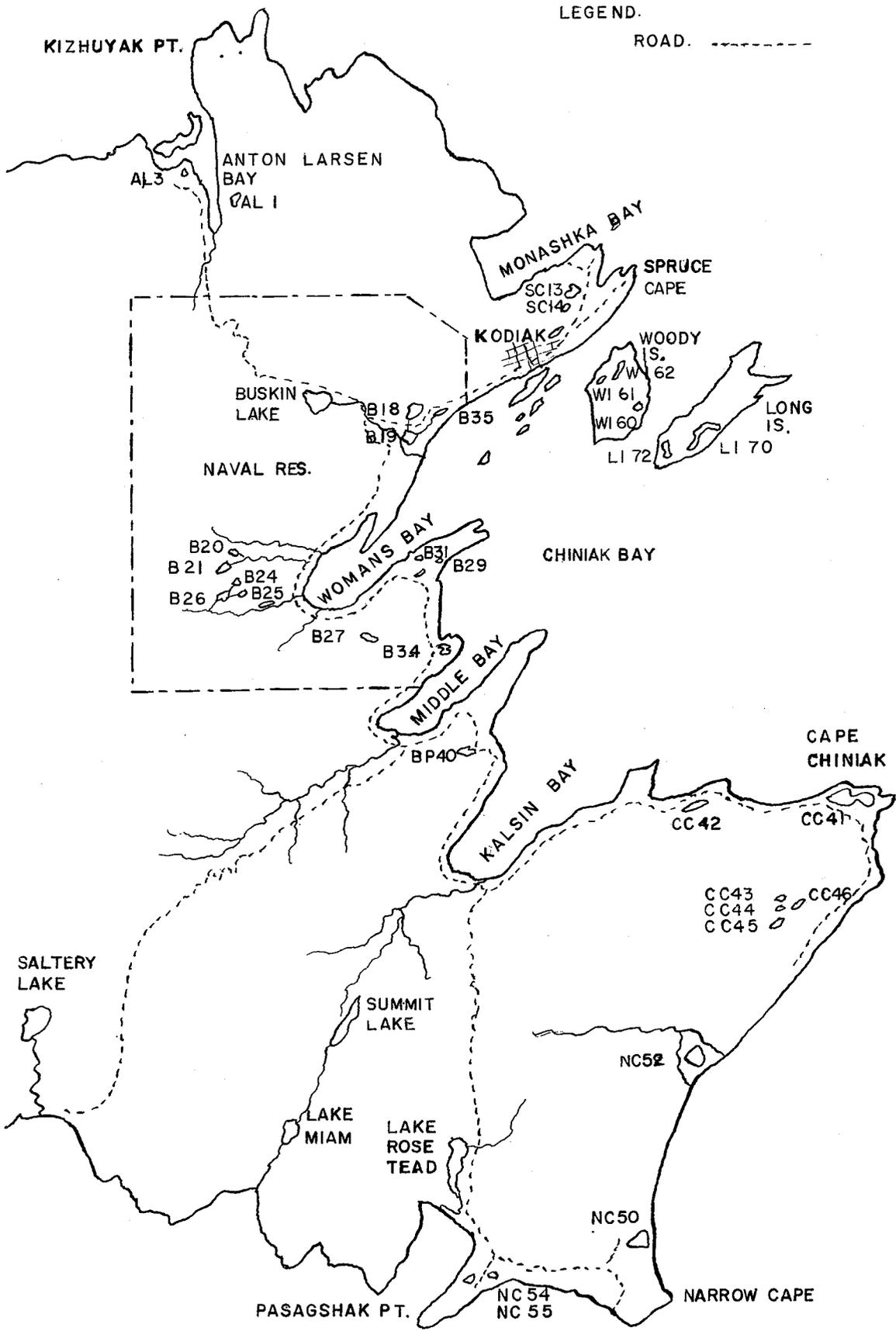


Figure 1. Kodiak Road System and Lakes

Findings:

Twenty-eight lakes have been partially cataloged during this segment. The absence of a stable ice cover virtually eliminated any opportunity for taking winter water samples this year.

Detailed information on cataloged waters is available at the Kodiak hatchery office located on the Kodiak Naval Station and at the Fish and Game office in Juneau.

Recommendations:

Three lakes would benefit immediately by rehabilitation. Lake Margaret, (B#35), and Lake Genevieve, (B#18), located on the Kodiak Naval Station and Starbird Lake, (BP#40), at Broad Point. They are readily accessible to the general public, have provided little recreational fishing in the past, but are of such a quality as to lend themselves readily to rehabilitation.

Lake Margaret:

9.26 surface acres; 127.1910 acre feet; maximum depth 22 feet; Dissolved oxygen 9.6 ppm (av.); pH 6.75 (av.); native species Stickleback.

Lake Genevieve:

47.05 surface acres; 1133.8140 acre feet; maximum depth 52 feet; Dissolved oxygen 10.2, (av.); pH 7.0, (av.); native species present by percentage of population; rainbow 1%, Dolly Varden 50%, sockeye salmon 10%, and stickleback 39%.

Starbird Lake: (BP#40)

Is located on Broad Point about 1/4 mile off Chiniak Highway. It was rehabilitated several years ago, but no attempt was made to keep it from being recontaminated by undesirable species. As a result, it contains the following species listed by percentage of the population:

rainbow 10%, Dolly Varden 40%, coho salmon 20%, and stickleback 30%.

Table 1. Reconnaissance Investigations; Outlying Waters.

<u>Location</u>	<u>Name</u>	<u>Information Obtained</u>
Sitkinak Island	Lake, no name	Continual use by 40 persons stationed at the Coast Guard Loran Station. Fishing from lake edge, unproductive. Fishing from boats produced 18"-20" rainbow trout.
South Kodiak	Karluk River	Fishery utilized 8 months each year: Approximately 12 angler hours/day. Yearly steelhead take, approximately 1,000. River also has runs of king, sockeye and coho salmon and Dolly Varden trout.
Afognak Island	Afognak Lake and River	Has a Navy recreation camp on the lake. Has runs of coho, sockeye, pink salmon, Dolly Varden and a few steelhead. Needs creel census and weir counts for better management.
North Kodiak	Summit Lake	Contains large rainbow from old plant. D.O. 10ppm. @62° F. Strictly a "fly-in" lake.
North Kodiak	Lake Maim	Pink and sockeye salmon only. No sport fishery.

Table 1. Reconnaissance Investigations (Con't).

<u>Location</u>	<u>Name</u>	<u>Information Obtained</u>
North Kodiak	Saltery Lake	Sockeye and steelhead. Served by an oftentimes impassable road. Utilized heavily by military personnel. No creel census data available.
North Kodiak	Lake Rose Tead and Pasagshak River.	Sockeye fishery. Run badly depleted and overfished. New regulatory proposals are needed.
North Kodiak	Barry Lagoon	A possible development project for rainbow trout or landlocked coho.
North Kodiak	NC#56 Lake	Can sometimes be reached by 4-wheel drive vehicles. Mostly fly-in fishing. Will be stocked with coho. Little sport fishing in the past.
South Kodiak	Fraser River and Lake	Has some steelhead fishing but confined mostly to sockeye. Sockeye development project being conducted by Commercial Fishery Division to re-establish a run.

Table 2. Species present and estimates of per cent composition of population.

Lake	River	Rainbow	Dolly Varden	Coho	Sockeye	Pink Chum	Grayling	Stickle- back	Cottidae
AL#3							100		
AL#1		95						5	
SC#12		95						5	
Melnitsa		65		25				10	
Dark				98				2	
135 Beaver		90						10	
Genevieve		1	50		10			39	
Margaret								100	
Louise			75	1	10			14	
Buskin	Buskin	10	10	10	20	15		5	30
Tanignak				85				15	
WI#62				90				10	
Elephant				85				15	

Table 2. Species present and estimates of per cent composition of population (Con't).

Lake	River	Dolly				Stickle-		Cottidae
		Rainbow	Varden	Coho	Sockeye	Pink Chum	Grayling	
LI#72				99				1
LI#70		5		90				5
Jack		100						
Lee		100						
Caroline		100						
Cicely		100						
Aurel		100						
Orbin		10	75					15
B#79		50						50
	Sargents		20			70		10
	Russian		10	10		30	40	10
	Salonie		20	10		65		5
	Panamaroff		20			75		5
Heitman		100						

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Table 2. Species present and estimates of per cent composition of population (Con't).

Lake	River	Dolly				Stickle-		Cottidae
		Rainbow	Varden	Coho	Sockeye	Pink Chum	Grayling	
CP#29		100						
CP#30		100						
CP#31		100						
CP#34		90					10	
	American		20	20	50	10		
BP#40		10	40	20			30	
	Olds-Kalsin		5	40	40			15
Summit		100						
Miam			25		75			
CC#42							75	25
CC#41		10	60					30
CC#43				95				5
CC#44				98				2

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Table 2. Species present and estimates of per cent composition of population (Con't).

Lake	River	Dolly				Stickle-			
		Rainbow	Varden	Coho	Sockeye	Pink Chum	Grayline	back	Cottidae
CC#45				98				2	
CC#46				95				5	
NC#52				100					
Rose Tead			20		80				
NC#55									
138 NC#54		100					100		
Saltery		40	10		40			10	
	Karluk	20	10	10	30	20 (king salmon 2%)		3	5
	Fraser	10	10		80				
Afognak	Afognak	10	20	10	20	30		10	

Table 3. Lake surface and volumetric surveys, Kodiak road system.

<u>SURFACE AREA SURVEYS</u>					
Lake	Surface Acres	Lake	Surface Acres	Lake	Surface Acres
Aurel (B#26)	15.75	Arrowhead (B#17)	3.00	Jack (B#20)	4.73
No name (SC#15)	15.63	Dark (SC#14)	15.03	Cicely (B#24)	15.05
Horseshoe (CP#34-35)	4.75	Caroline (B#25)	6.64	Tanignak (WI#61)	29.74
Melnitsa (SC#13)	45.38	Louise (B#19)	37.00	No name (CP#29)	5.00
No name (CP#31)	7.59	No Name (NC#54)	7.48	No Name (NC#55)	9.92

<u>VOLUMETRIC SURVEYS</u>					
Lake	Surface Acres	Acre Feet	Lake	Surface Acres	Acre Feet
Genevieve (B#18)	47.05	1133.81	Gertrude (SC#12)	18.67	241.77
Margaret (B#35)	9.26	127.19	Lee (B#21)	14.26	110.59
Starbird (BP#40)	12.42	181.19			

Table 4. Water sample data, road system lakes, Kodiak.

Lake Name	Date of Sample	Depth of Sample	D. O. in ppm	pH	Water Temp
Genevieve	2/3/63	20 feet	10.2	7.0	33 ^o F.
Margaret	4/18/63	22 feet	9.6	6.75	44
Louise	4/25/63	20 feet	10.1	7.0	51
Orbin	8/10/62	5 feet		7.25	58
Jack	8/10/62	Surface	9.4	7.25	52
Lee	8/10/62	Surface	10.2	7.25	48
Cicely	8/11/62	Surface	10.1	7.25	46
Caroline	8/11/62	Surface	10.3	7.0	48
Aurel	8/11/62	Surface	9.8	6.75	47
AL#3	8/12/62	Surface	9.6	6.60	52
Starbird	6/15/63	Surface	10.1	7.25	41
Gertrude	7/8/62	15 feet	9.8	6.75	50
Melnitsa	7/8/62	10 feet	7.2	6.75	53

Table 4. Water sample data, road system lakes, Kodiak (Con't).

Lake Name	Date of Sample	Depth of Sample	D. O. in ppm	pH	Water Temp.
Dark	7/8/62	10 feet	7.3	6.75	53° F.
NC#55	8/12/62	Surface	6.8	7.0	50
NC#54	8/12/62	Surface	7.0	7.0	51
Chiniak Lagoon	8/12/62	Surface	9.1	6.75	62
Pony Point	8/12/62	Surface	8.9	7.0	63
CC#42	6/12/63	Surface	9.1	6.75	52
CC#44	6/12/63	Surface	9.1	6.75	52
CC#45	6/12/63	Surface	8.9	7.0	53
CC#46	6/12/63	Surface	9.0	6.75	52
Elephant	7/10/62	Surface	8.9	6.75	52
WI#62	7/19/62	Surface	9.1	7.0	53
Una	6/20/63	Surface	6.8	6.5	58
Tanignak	6/20/63	Surface	8.8	7.0	52

Table 4. Water sample data, road system lakes, Kodiak (Con't).

Lake Name	Date of Sample	Depth of Sample	D. O. in ppm	pH	Water Temp.
Icehouse	6/20/63	Surface	8.9	7.0	55° F.
Dolgoi	6/13/63	Surface	9.1	7.0	54

Continuation of cataloging is deemed necessary. Many lakes and streams in outlying areas have not been worked on because of the more pressing need to catalog the heavily fished lakes and streams adjacent to the road system. A new road is being constructed from Monashka Bay around the north end of the island to Anton Larsen Bay. This will open several hundred square miles of area for sport fishing. The area should be cataloged and management measures recommended before this area is opened to general use. The surveys have been made and construction should start in the summer of 1964. No completion date has been announced as yet.

Prepared by:

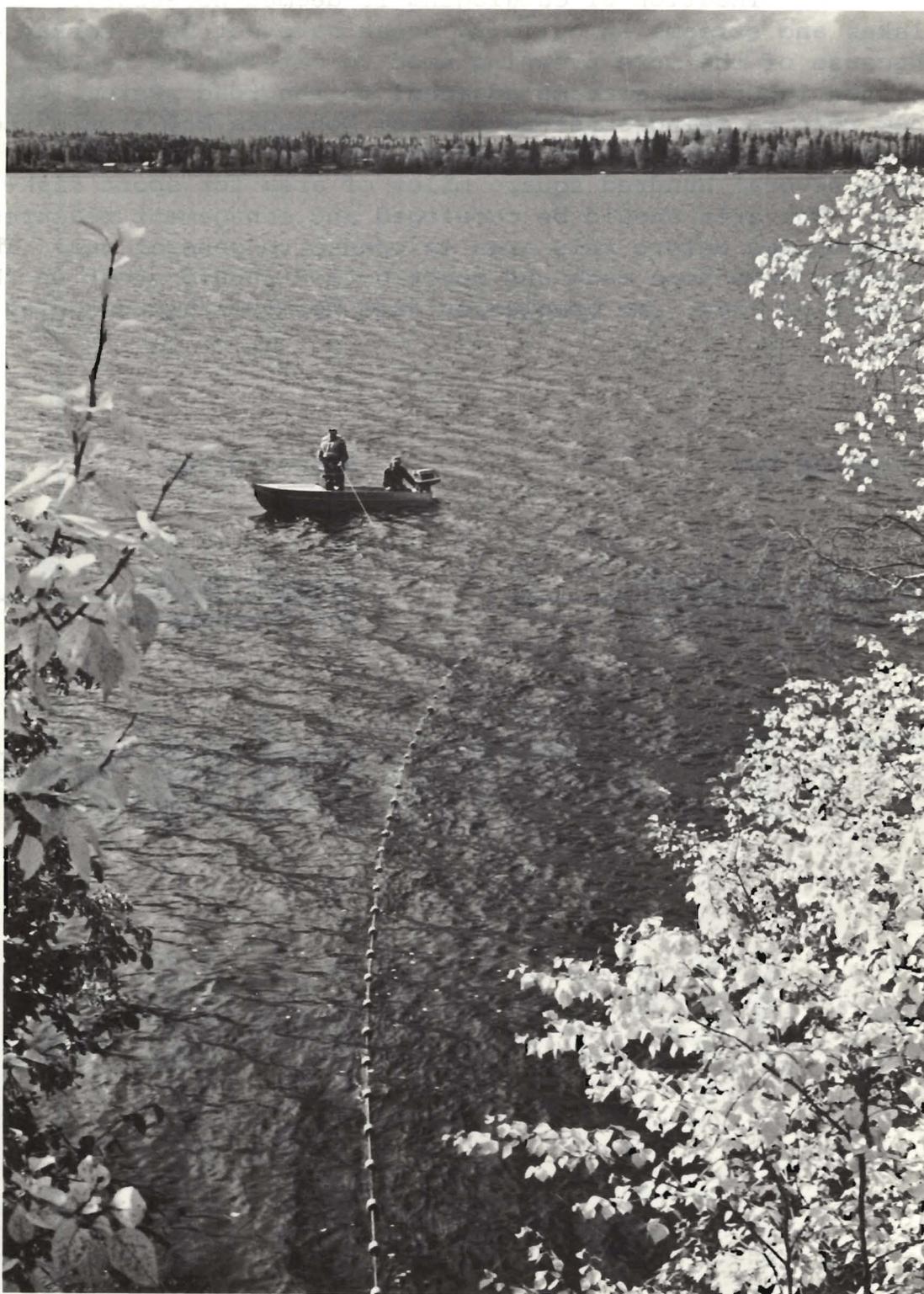
Approved by:

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Fishery Biologist

Richard Haley
D-J Coordinator

Date: March 1, 1963.

Alex H. McRea, Director
Sport Fish Division



Gill netting with variable mesh gill nets is a basic tool of the fishery biologist.