

ADF&G TECHNICAL DATA REPORT NO. 55  
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## SURVEY OF LANDLOCKED LAKES IN NORTHERN SOUTHEASTERN ALASKA

By:  
Ron Smith  
and  
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1980

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ALASKA DEPARTMENT OF FISH AND GAME  
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Ronald O. Skoog  
Commissioner

## ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

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## TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES . . . . .	i
LIST OF FIGURES . . . . .	i
ABSTRACT . . . . .	ii
INTRODUCTION . . . . .	1
MATERIALS AND METHODS . . . . .	1
RESULTS . . . . .	3
DISCUSSION . . . . .	3
ACKNOWLEDGMENTS . . . . .	8
REFERENCES . . . . .	9
APPENDIX A . . . . .	12
APPENDIX B . . . . .	19

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1.	Ratings for lake criteria (coho salmon rearing). Scoring 1-5 with highest number preferred . . . . .	4

LIST OF FIGURES

<u>Figure</u>		
1.	Southeastern Alaska and that portion (shaded) surveyed for landlocked lakes . . . . .	2

## ABSTRACT

Northern Southeastern Alaskan lakes blocked to anadromous fish by barrier water falls were rated numerically for lake stocking potential for coho salmon (*Oncorhynchus kisutch*). Lakes considered were below 230 meters elevation and over 12 hectares in surface area. Fisheries management and enhancement considerations were addressed. The 54 lakes surveyed total 9,180 hectares in surface area. Lakes in the Juneau area identified as prime candidates for further study and possible stocking with coho salmon include Shelter, Glory, Peterson, Indian, Sweetheart, and Turner Lakes. In the Petersburg area, Colp, Farragut, Spurt Point, Point Agassiz, and Slippery Lakes appear to have the highest potential. Suitability for stocking must be determined on a lake by lake basis following one-site work, in accordance with policy of the Alaska Department of Fish and Game.

Key Words: Coho Salmon, *Oncorhynchus kisutch*, lake stocking, northern Southeastern Alaska.

## INTRODUCTION

Fisheries enhancement programs in Southeastern Alaska are developing at an accelerated rate. Work done by the National Marine Fisheries Service (United States Department of Commerce 1974; Crone 1976) at the Little Port Walter field station (56° 23'N, 134° 42'W) has shown the benefits of stocking lakes blocked to immigration of coho salmon (*Oncorhynchus kisutch*).

This study was undertaken in 1978 to rate the stocking potential of northern Southeastern Alaska lakes blocked to anadromous fish and to identify lakes suitable for more intensive study (Figure 1). Information sought included: (1) Lakes that are blocked to anadromous fish migration in the study areas; (2) a comparison of the effects of stocking each of the lakes on sport and commercial fishery management; (3) accessibility, size, location, and brood-stock availability of these lakes; and (4) potential for safe volitional migration from the lakes with the highest "potential".

## MATERIALS AND METHODS

A list of lakes in northern Southeastern Alaska which are blocked to immigration of anadromous fish was developed from Alaska Department of Fish and Game (ADF&G) lake and stream files in the Juneau area office (ADF&G 1978a, 1978b), ADF&G reports (Baade 1960, 1961, 1962, 1963, 1964; Andrews 1965; Andrews et al. 1966; Heckart et al. 1967, 1968, 1969; McHugh et al. 1970, 1971, 1972; Reed and Armstrong 1971; Schmidt et al. 1973; Schmidt 1974; and Schmidt and Robards 1975, 1976), and personal communication with local biologists. To limit the number of lakes considered, we arbitrarily selected lakes below 230 m elevation and over 12 ha in surface area.

Questionnaires were developed to assess commercial and sport fisheries management considerations of lake stocking programs through a numerical rating system. These questionnaires were completed by selected ADF&G area managers (Robert Armstrong, Richard Marriott, and Raymond Staska in the Juneau area; Darwin Jones and William Bergmann in the Petersburg area). Questionnaires used are found in Appendix A. The maximal score for management considerations was 20.

Lakes were rated numerically for enhancement feasibility by location, accessibility, and size determined from United States Geological Survey maps (1:63,360 scale). Rating of donor stock availability was determined from information in stream catalogs (United States Department of the Interior 1965a, 1965b, 1970a, 1970b) and stream survey reports in the Juneau area office (ADF&G 1978a and 1978b). Physical descriptions of those lakes noted can be found in Appendix B. The form used in making numerical ratings is found in Appendix A. The maximal cumulative score for enhancement consideration was 20. This was a preliminary survey and as such did not address limnological, pathological, and genetic considerations.

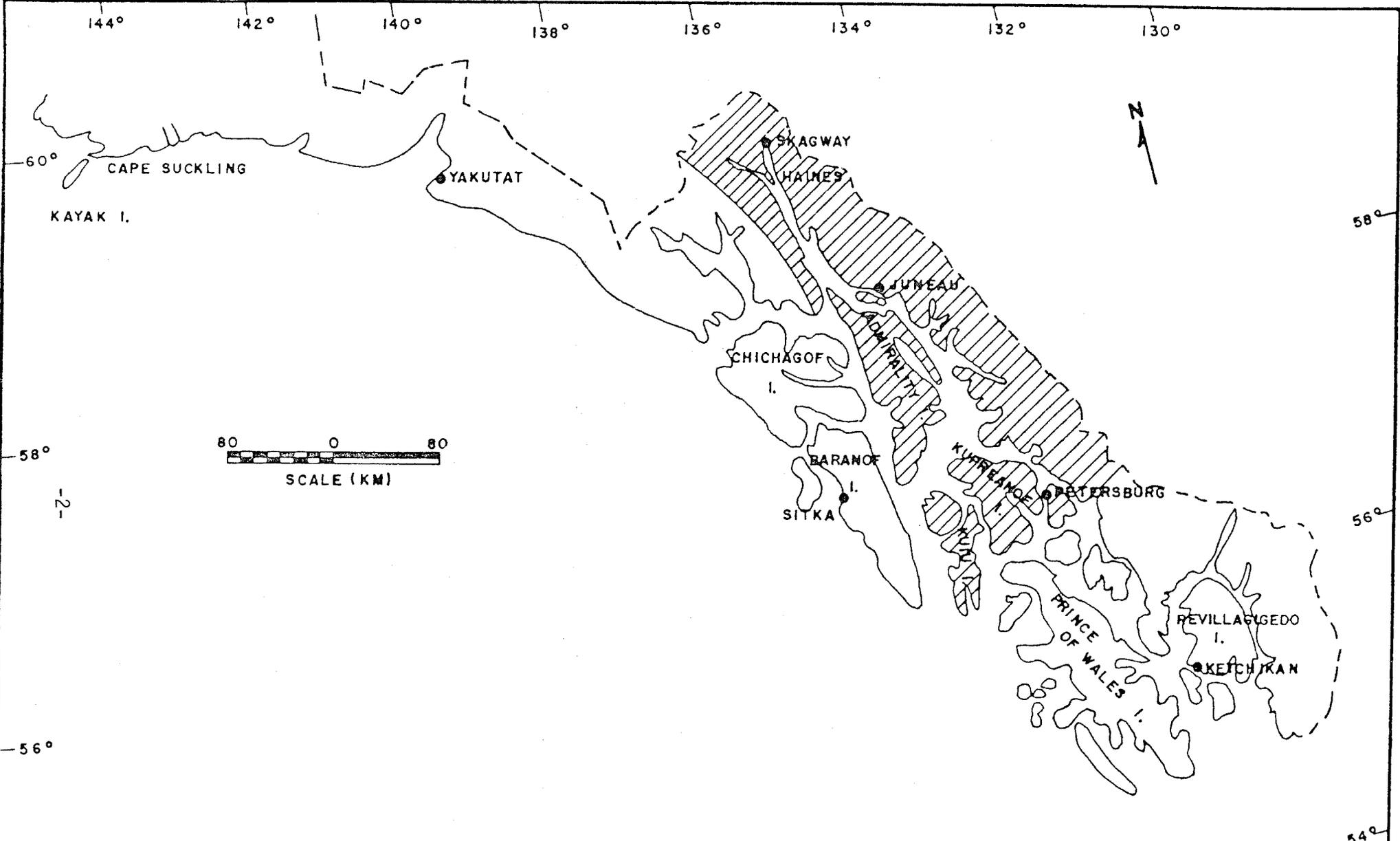


Figure 1. Southeastern Alaska and that portion (shaded) surveyed for landlocked lakes.

Outlets of lakes which had a total cumulative score (management and enhancement) of 22 or greater and not more than one score of "1" for the above comparisons were visually surveyed and photographed from a helicopter. The form used to make comparisons is found in Appendix A.

One lake system, Irish Lakes, was not included here because a coho stocking program was already planned there when this study began.

## RESULTS

Approximately 9,180 hectares of lakes presently blocked to anadromous fish migration were rated in this study (Appendix B).

Cumulative scores for sport and commercial fisheries management considerations ranged from a low of 7 to a high of 16 of a possible 20. Ten lakes scored 14 or above (Table 1). These included: Shelter and Glory Lakes in the Juneau vicinity; Colp, Farragut, Spurt Point, Slippery, and "Point Aggassiz"<sup>1</sup> Lakes in the Petersburg vicinity; Taylor and "Seymour Canal"<sup>1</sup> Lakes on Admiralty Island and Adale Lake along Endicott Arm.

Scores in each of the four categories varied from system to system with poor commercial fishery run manageability appearing as a dominant concern in many cases.

Cumulative scores for enhancement feasibility ranged from a low of 10 to a high of 16 of a possible 20 (Table 1). Eight lakes scored 15 or above. Those included: Indian, Peterson, Shelter, and Turner Lakes in the Juneau area; Colp and North Arm Lakes in the Petersburg area, and Davidson and Hasselborg Lakes on Admiralty Island. Scores in each of the four categories varied from system to system.

Volitional emigration potential scores ranged from 2.0 to 5.0 of a possible 5.0 (Table 1).

## DISCUSSION

Lakes which are prime candidates for further study and possible stocking with coho salmon in the Juneau area include Shelter, Glory, Peterson, Indian, Sweetheart, and Turner Lakes. Of these, Shelter is probably the best candidate from a fisheries management standpoint. Sport Fish Division staff expressed a desire to maintain the resident cutthroat trout (*Salmo clarki*) population in Shelter Lake. Shelter Lake's outlet falls may be hazardous to emigrant fish. Glory, Peterson, Indian, Sweetheart, and Turner are considered good candidates with one exception - concern for probability of returning coho salmon mixing with native stocks during harvest and

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<sup>1</sup> Unnamed lakes identified by nearest geographical landmark.

Table 1. Ratings for lake criteria (coho salmon rearing). Scoring 1-5 with highest number preferred.

Lake	Latitude	Longitude	Run Manageability	Commercial Harvest Feasibility	Sport Harvest Possibility	Sport Fishery Value	Subtotal (Management)	Size	Location	Donor Stock Avail.	Accessibility	Subtotal (Enhancement)	Volitional Migration Potential <sup>a/</sup>
Adale	57°45'N, 133°18'W		5	4	2	4	15	4	2	3	3	12	2.0
Barrie <sup>c/</sup>	56°28'N, 133°35'W		1	3	1	5	10	2	2	3	3	10	
Bohemian	56°56'N, 133°27'W		1	1	5	5	12	3	2	3	4	12	
Boundary <sup>c/</sup>	58°36'N, 133°43'W		1	5	2	4	12	3	2	3	3	11	
Colp	56°53'N, 133°01'W		2	5	5	4	16	3	5	3	4	15	2.0
Crane <sup>b/c/</sup>	56°39'N, 132°41'W		2	5	2	2	11	3	4	3	4	14	
Davidson <sup>c/</sup>	57°37'N, 134°22'W		1	5	2	1	9	5	2	5	3	15	
Eliza	57°11'N, 134°23'W		1	1	2	3	7	4	2	3	3	12	
Farragut <sup>c/</sup>	57°16'N, 132°57'W		4	3	4	5	16	5	3	3	3	14	5.0
Florence	57°48'N, 134°38'W		3	3	2	1	9	5	2	3	3	13	2.5
Glory	58°23'N, 134°08'W		1	5	4	4	14	4	3	3	4	14	4.0
Hassleborg <sup>c/</sup>	57°42'N, 134°16'W		1	5	2	1	9	5	2	5	3	15	
Indian <sup>c/</sup>	58°11'N, 133°39'W		1	4	2	4	11	5	2	4	4	15	3.5
Jim's <sup>c/</sup>	57°34'N, 134°17'W		1	5	2	1	9	4	2	5	3	14	
Kalinia	56°43'N, 133°28'W		1	1	3	5	10	3	3	4	4	14	
Kathleen	57°55'N, 134°44'W		3	3	2	1	9	5	2	3	3	13	2.0
Ledge <sup>c/</sup>	56°53'N, 134°17'W		3	2	2	5	12	3	1	3	3	10	

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Table 1. Continued

Lake	Latitude	Longitude	Run Manageability	Commercial Harvest Feasibility	Sport Harvest Possibility	Sport Fishery Value	Subtotal (Management)	Size	Location	Donor Stock Avail.	Accessibility	Subtotal (Enhancement)	Volitional Migration Potential <sup>a/</sup>
Lower Dewey	59°27'N, 135°18'W		5	5	2	1	13	2	5	3	4	14	
North Arm	56°42'N, 132°27'W		1	1	2	5	9	4	3	5	4	16	
Peanut	57°55'N, 134°43'W		1	5	3	2	11	3	3	3	4	13	
Peterson	58°26'N, 134°43'W		1	4	4	4	13	3	4	4	4	15	
Pleasant Bay <sup>b/</sup>	57°36'N, 134°02'W		3	3	2	2	10	3	3	3	3	12	4.5
Sand <sup>b/</sup>	56°41'N, 132°41'W		2	5	2	2	11	3	4	3	4	14	
Shelter	58°25'N, 134°52'W		3	5	4	3	15	3	4	3	4	14	3.0
Slide	58°00'N, 134°24'W		3	2	2	4	11	3	3	3	4	13	
Slippery <sup>b/</sup>	56°41'N, 133°53'W		3	4	4	3	14	3	2	3	3	11	
Spurt Point	57°04'N, 132°54'W		5	5	2	2	14	4	3	3	4	14	3.0
Stump	57°21'N, 133°01'W		2	1	2	5	10	3	2	3	3	11	2.0
Sweetheart	57°58'N, 133°35'W		2	4	2	4	12	5	3	3	3	14	2.5
Taylor	57°36'N, 133°23'W		3	4	2	5	14	3	2	3	3	11	
Thayer <sup>c/</sup>	57°39'N, 134°28'W		3	3	1	1	8	5	2	3	3	13	
Tower's Arm	56°53'N, 133°29'W		1	1	3	3	8	3	2	4	4	13	
Turner	58°18'N, 133°53'W		1	5	4	1	11	5	3	3	4	15	4.5
Unnamed lakes identified by geographic proximity.													
Douglas Bay <sup>b/</sup>	56°29'N, 133°19'W		2	2	2	5	11	3	3	3	3	12	

-continued-

Table 1. Continued

Lake	Latitude	Longitude	Run Manageability	Commercial Harvest Feasibility	Sport Harvest Possibility	Sport Fishery Value	Subtotal (Management)	Size	Location	Donor Stock Avail.	Accessibility	Subtotal (Enhancement)	Volitional Migration Potential <u>a/</u>
Frederick Snd.	56°59'N,133°33'W		2	3	1	5	11	2	3	3	3	11	
Hamilton Bay	56°55'N,133°46'W		1	2	1	5	9	2	2	4	3	11	
Hobart Bay <u>b/</u>	57°26'N,133°23'W		1	3	2	5	11	3	2	3	3	11	
Hood Bay	57°24'N,134°23'W		3	4	1	5	13	2	2	3	3	10	
Indian Point	56°42'N,133°16'W		1	2	5	5	13	3	3	3	4	13	
Indian Point	56°43'N,133°18'W		1	2	5	5	13	3	3	3	4	13	
Kake	57°02'N,133°51'W		1	3	1	5	10	3	2	3	3	11	
Keku Strait <u>b/</u>	56°51'N,134°06'W		1	2	3	5	11	3	2	3	3	11	
Mitchell Bay	57°34'N,134°17'W		1	5	2	4	12	3	2	5	3	13	
Pleasant Bay <u>c/</u>	57°34'N,133°58'W		2	2	2	4	10	3	3	3	3	12	3.0
Point Agassiz <u>c/</u>	56°58'N,132°54'W		2	5	2	5	14	2	4	3	4	13	
Point Houghton	57°25'N,132°57'W		1	1	3	5	10	5	3	3	3	14	4.0
Rocky Pass	56°46'N,133°48'W		2	2	2	5	11	2	2	3	3	10	
Seymour Canal	57°43'N,134°12'W		4	4	1	5	14	2	2	3	3	10	
Threemile Arm <u>b/</u>	56°40'N,133°51'W		3	2	3	5	13	3	2	3	3	11	
Tiedman Island	57°49'N,134°08'W		3	3	2	4	12	3	3	3	4	13	3.0

-continued-

Table 1. Continued

Lake	Latitude	Longitude	Run Manageability	Commercial Harvest Feasibility	Sport Harvest Possibility	Sport Fishery Value	Subtotal (Management)	Size	Location	Donor Stock Avail.	Accessibility	Subtotal (Enhancement)	Volitional Migration Potential <sup>a/</sup>
Wilson Cove	57°09'N, 134°27'W		3	1	1	5	10	2	2	4	3	11	
Wilson Cove <sup>c/</sup>	57°10'N, 134°33'W		5	1	1	5	12	3	2	4	3	11	
Winning Cove	57°51'N, 134°05'W		3	2	1	5	11	2	3	3	4	12	

<sup>a/</sup> Scores are averages from two observers. Additional lakes will be rated as time and budget permits.

<sup>b/</sup> Possibly accessible to anadromous fish.

<sup>c/</sup> Multiple lakes are listed under the largest lake in the chain.

spawning to the detriment of those native coho salmon stocks. Glory Lake's outlet falls do not appear to be hazardous to emigrant fish. There was concern whether Peterson Lake was suitable for stocking because of poor results from prior stocking with steelhead trout (*Salmo gairdneri*) there. Indian and Sweetheart Lakes ranked high because of their large size and proximity to Snettisham Hatchery. Outlet falls of these lakes could be hazardous to emigrant fish. Field surveys were initiated and an experimental lot of coho salmon was placed in the Indian Lake system in the summer of 1979. Turner Lake ranked high because of its large size. Stocking Turner Lake could jeopardize existing resident sport fisheries. Waterfalls on the outlet of Turner Lake were considered some of the least hazardous to emigrant fish of those observed in this study.

Top candidate lakes in the Petersburg area were Colp, Farragut, Spurt Point, "Point Agassiz", and Slippery Lakes. Of these, Colp might be considered the best candidate were it not for possible hazards to emigrant smolts in its outlet falls. Farragut Lake ranked moderately high in all categories. Outlet falls of this large lake system did not appear to be hazardous to the emigrant fish. Spurt Point ranked high in run manageability and commercial harvest feasibility, but ranked low in sport fishery categories. This lake received rainbow trout plans in the past. Coho salmon plants could detrimentally affect the rainbow trout stocking program. Outlet falls of Spurt Point Lake could be hazardous to emigrant fish. "Point Agassiz" received moderate to high scores in all categories as did Slippery Lake. The Slippery Lake system is scheduled for a U.S. Forest Service fish ladder project.

Another top candidate for consideration was Adale Lake, located along Endicott Arm. This large, relatively low-elevation lake received a high score in run manageability and moderate scores in other categories. Based on field surveys, this may be one of the few barren lakes in the study area. Its outlet flows through piles of boulders making it difficult to assess the hazards to emigrant fish. It is not known whether adult returns from this system would return from the north past Juneau, or from the south through Frederick Sound.

Resource managers need to consider strong and weak points of each system. Suitability for stocking should be determined on a case-by-case basis following on-site work. Consideration must be given to fisheries management needs of the area (ADF&G 1976).

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APPENDIX A

Appendix A. Four forms were used in rating specific landlocked lakes in this study. The first two were filled out by local ADF&G fishery management personnel. The latter two were filled out by the authors following review of enhancement opportunities at each lake.

Subjective rating form used for lake criteria (coho salmon rearing) for commercial fisheries management. Scoring 1-5 with highest number preferred.

1. Fishery Management Considerations

A. Run Manageability

1. Existing run(s) in the proximity with a high probability of mixing during harvest and spawning to the detriment of natural stock(s).
2. Run(s) in the proximity with possibility of mixing during harvest and spawning.
3. Run(s) in the proximity but good chance of being segregated during harvest and spawning.
4. Run(s) in the proximity but will be segregated during harvest and spawning.
5. No existing run in the proximity.

B. Terminal commercial harvest feasibility

1. Difficult harvest location, distant from ports.
2. Moderate problems.
3. Marginal problems.
4. Good harvest location.
5. Good terminal harvest location, near ports.

Subjective rating form used for lake criteria (coho salmon rearing) for sport fisheries management. Scoring 1-5 with highest number preferred.

1. Fishery Management Considerations

A. Sport harvest possibilities:

1. Low migratory and/or terminal sport harvest possibilities.
2. Low to moderate migratory and/or terminal sport harvest possibilities.
3. Moderate migratory and/or terminal sport harvest possibilities.
4. Moderate to high migratory and/or terminal sport harvest possibilities.
5. High migratory and/or terminal sport harvest possibilities.

B. Sport Fishery Value

1. High sport fishery value on resident lake species.
2. Moderate to high sport fishery value in resident lake species.
3. Moderate sport fishery value on resident lake species.
4. Low to moderate sport fishery value on resident lake species.
5. Low sport fishery value on resident lake species.

Rating form used for lake criteria (coho salmon rearing) for enhancement category. Scoring 1-5 with highest number preferred.

1. Size
  - A. Less than 12.0 hectare
  - B. 12.0 - 16.2 hectare
  - C. 16.2 - 80.9 hectare
  - D. 80.9 - 161.0 hectare
  - E. More than 161.0 hectare
2. Location (distance by water)<sup>1</sup>
  - A. Over 161 kilometers from a large population center.
  - B. 80 - 161 kilometers from a large population center.
  - C. 32 - 80 kilometers from a large population center.
  - D. 16 - 32 kilometers from a large population center.
  - E. Within 16 kilometers from a large population center.
3. Donor Stock Availability<sup>2</sup>
  - A. Closest possible brood source over 161 kilometers.
  - B. Brood source 64 - 161 kilometers away.
  - C. Brood source less than 64 kilometers away.
  - D. Indigenous and donor stock during first cycle.
  - E. Indigenous stock sufficient for starting hatchery stock.
4. Accessibility
  - A. Difficult access for fish cultural support (helicopter).
  - B. Long and/or difficult boat or plane trip (more than 1 hour, one way, dangerous terrain).
  - C. Moderate boat or plane trip (from 0.5 to 1 hour, one way).
  - D. Short boat or plane trip (less than 0.5 hour, one way).
  - E. Easily accessible (road to lake).

- <sup>1</sup> Juneau, Petersburg, Haines or Skagway, Alaska.
- <sup>2</sup> This is a preliminary overview, relative to distance by water. Streams with annual adult coho escapements of approximately 200 or more were considered brood stock sources. Lake size, stocking rate, pathology, and genetic considerations were not rated.

Rating form used for lake criteria (coho salmon rearing) for volitional migration potential. Scoring 1-5 with highest number preferred.

A. Lake's downstream barrier(s):

1. Appear too hazardous to consider further.
2. Appear hazardous but ground survey recommended.
3. Could be hazardous; ground survey recommended.
4. Do not appear hazardous but ground survey recommended.
5. Definitely are not hazardous, ground survey not needed.

APPENDIX B

Appendix B. Nonandromous Lakes in Northern Southeast Alaska Rated for Coho Salmon Rearing Potential.

Lake	Latitude	Longitude	Approx. Size (ha)	Elevation (m)	Max. Depth (m)	Fish Species Present <sup>a/</sup>	Possible Brood Source (Distance in km)
Adale	57°45'N, 133°18'W		93	197	10	none	Chuck R., King Salmon R., 48
Barrie <sup>c/</sup>	56°28'N, 133°35'W		14	92			Kushneahin Cr., Tunehean Cr., 24
Bohemian	56°56'N, 133°27'W		49	165	30	D.V., CT.	Duncan Cr., 8
Boundary <sup>c/</sup>	58°36'N, 133°43'W		34	122		D.V.	Moose L., Yehring Cr., 24
Colp	56°53'N, 133°01'W		20	179		CT.	Petersburg Cr., 19;
Crane <sup>b/c/</sup>	56°39'N, 132°41'W		12	24	13	D.V., CT.	Big Cr., 8
Davidson <sup>c/</sup>	57°37'N, 134°22'W		265	84	14	D.V., CT., Kok.	Hasselborg R., 8
Eliza	57°11'N, 134°23'W		83	66	67	D.V.	Eliza Hbr., Pybs Hbr., 8
Farragut <sup>c/</sup>	57°16'N, 132°57'W		729	135		D.V.	Petersburg Cr., 64
Florence	57°48'N, 134°38'W		336	41		CT., Kok.	Pavlov R., Hasselborg R., 16
Glory	58°23'N, 134°08'W		90	30	91	D.V.	Sockeye Cr., 16
Hasselborg <sup>c/</sup>	57°42'N, 134°16'W		1417	91		D.V., CT., Kok.	Hasselborg R.
Indian <sup>c/</sup>	58°11'N, 133°39'W		202	54		D.V., Kok.	Speel L.
Jim's	57°34'N, 134°17'W		121	71		D.V., CT. Kok.	Hasselborg R., 8
Kalinia	56°43'N, 133°28'W		49	137	20	D.V., CT.	Duncan Cr., 24
Kathleen	57°55'N, 134°44'W		182	144		D.V., Kok.	Pavlov R., Hasselborg R., 19
Ledge <sup>c/</sup>	56°53'N, 134°17'W		36	30		CT.	Saginaw Cr., 16
Lower Dewey	59°27'N, 135°18'W		16	145	9	D.V., E.B., Rb.	Ferebee R., Chilkoot R., 32

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## Appendix B. Continued.

Lake	Latitude	Longitude	Approx. Size (ha)	Elevation (m)	Max. Depth (m)	Fish Species Present <u>a/</u>	Possible Brood Source (Distance in km)
North Arm	56°42'N, 132°27'W		81	145	30	D.V., CT.	Stikine R., 16
Peanut	57°55'N, 134°43'W		75	90		D.V., Kok.	Pavlov. R., Hasselborg R., 19
Peterson	58°26'N, 134°43'W		21	212	14	D.V., Rb.	Peterson Cr.
Pleasant Bay <u>b/</u>	57°36'N, 134°02'W		45	42	24	D.V., CT., Kok.	Windfall Hbr., 32
Sand <u>b/</u>	56°41'N, 132°41'W		17	24	8	CT.	Big Cr., 8
Shelter	58°25'N, 134°52'W		24	30	7	D.V., CT.	Berner's R., Fish Cr., 16
Slide	58°00'N, 134°24'W		73	155	35	D.V.	King Salmon R., 16
Slippery <u>b/</u>	56°41'N, 133°53'W		59	34		D.V., CT.	Kadake Cr., 19
Spurt Point	57°04'N, 132°54'W		107	127	52	D.V., Rb., E.B.	Petersburg Cr., 64
Stump	57°21'N, 133°01'W		49	158	46	D.V.	Sandborn Canal 24
Sweetheart	57°58'N, 133°35'W		509	167		D.V., Rb.	Speel L., 24
Taylor	57°36'N, 133°23'W		28	61		D.V., CT.	Chuck R., 8
Thayer <u>c/</u>	57°39'N, 134°28'W		1255	112	85	D.V., CT., Kok.	Hasselborg R., 24
Tower's Arm	56°53'N, 133°29'W		73	67	14	D.V., CT.	Duncan Cr., 24
Turner	58°18'N, 133°53'W		1251	22		D.V., CT., Kok.	Sockeye Cr., 16
Unnamed lakes identified by geographic proximity.							
Douglas Bay <u>b/</u>	56°29'N, 133°19'W		18	31+			Kasheets Cr., 24
Frederick Sound	56°59'N, 133°33'W		14	166			Big Cr., Kadake Creek, 56

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Appendix B. Continued

Lake	Latitude	Longitude	Approx. Size (ha)	Elevation (m)	Max. Depth (m)	Fish Species Present <u>a/</u>	Possible Brood Source (Distance in km)
Hamilton Bay	56°55'N, 133°46'W		15	75			Hamilton Cr., 2
Hobart Bay <u>b/</u>	57°26'N, 133°23'W		59	31+			Sandborn Canal, 36
Hood Bay	57°24'N, 134°23'W		12	141			Hood Bay, North Arm, 8
Indian Point	56°42'N, 133°16'W		16	55			Duncan Cr., 19
Indian Point	56°43'N, 133°18'W		18	55			Duncan Cr., 19
Kake	57°02'N, 133°51'W		23	182			Hamilton Cr., 19
Keku Striat <u>b/</u>	56°51'N, 134°06'W		45	77			Kadake Cr., 8
Mitchell Bay	57°34'N, 134°17'W		20	61+			Hasselborg R.
Pleasant Bay <u>c/</u>	57°34'N, 133°58'W		40	61			Windfall Hbr., 40
Point Agassiz <u>c/</u>	56°58'N, 132°54'W		12	107			Petersburg Cr., 24
Point Houghton	57°25'N, 132°57'W		486	110			Sandborn Canal, 16
Rocky Pass	56°46'N, 133°48'W		15	50			Kadake Cr., 16
Seymour Canal <u>c/</u>	57°43'N, 134°12'W		13	211	20	D.V.	Windfall Hbr., 32
Threemile Arm <u>b/</u>	56°40'N, 133°51'W		22	31+			Tunehean Cr., 24

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Appendix B. Continued.

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Lake	Latitude	Longitude	Approx. Size (ha)	Elevation (m)	Max. Depth (m)	Fish Species Present <u>a/</u>	Possible Brood Source (Distance in km)
Tiedman Island	57°49'N,134°08'W		16	61			Windfall Hbr., 24
Wilson Cove	57°09'N,134°27'W		15	155			Whitewater Bay, 18
Wilson Cove <u>c/</u>	57°10'N,134°33'W		24	107			Whitewater Bay, 18
Winning Cove	57°51'N,134°05'W		12	213			Windfall Hbr., 24

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a/ Based on recorded surveys. Abbreviations include:

- D.V. - Dolly Varden (*Salvelinus malma*)
- CT. - Cutthroat (*Salmo clarki*)
- Kok. - Kokanee (*Oncorhynchus nerka*)
- E.B. - Eastern Brook (*Salvelinus fontinalis*)
- Rb. - Rainbow (*Salmo gairdneri*)

b/ Possibly accessible to anadromous fish.

c/ Multiple lakes are listed under the largest lake in the chain.

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