RC 008

United Cook Inlet Drift Association

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Date: December 6, 2013

Addressee: Karl Johnstone
Chairman, Alaska Board of Fisheries

RE: Petition to amend policy for the management of Sustainable Salmon Fisheries Policy (SSFP)

Dear Mr. Johnstone,

Please find the referenced Petition for amending the SSFP. We feel this additional definition, Stock of Habitat Concern, will be helpful in focusing our efforts to address salmon habitat issues in the Cook Inlet Region. However, this new definition has to legally exist before it could possibly be used at the Upper Cook Inlet regulatory meeting. Further, UCIDA believes that this new definition may be useful in other areas of the state.

Sincerely,

Roland Maw

Roland Maw, PhD
UCIDA Executive Director

PETITION

Re: 5AAC 39.222 Policy for the Management of Sustainable Salmon Fisheries (SSFP)

Petition

United Cook Inlet Drift Association (UCIDA) petitions the Alaska Board of Fisheries to add a new definition to the SSFP:

> 5AAC 39.222 (f)(xx) Stock of "Habitat Concern" means concerns arising from the inability of salmon to successfully spawn or rear in their freshwater habitats as a result of invasive species, parasites, disease, impaired water, migration impedances or other habitat disturbances.

Introduction

This new SSFP addition (stock of habitat concern) is necessary to adequately address the salmon habitat issues in SouthCentral Alaska. Current "Stock of Concern" definitions in the SSP do not adequately describe the variety of habitat issues affecting Chinook, Sockeye or Coho Salmon populations in the Cook Inlet Region.

In order to allow the Board of Fish (BOF), Alaska Department of Fish and Game (ADF&G) and the stakeholders to adequately design "Action Plans" to rehabilitate, remediate or restore salmon populations, this new definition would be beneficial. Once this new "stock of concern" is added to the SSFP, it can be used at the Upper Cook Inlet (UCI) regulatory meeting.

UCIDA encourages the BOF to find an emergency exists and schedule this petition so this new definition can be adopted then possibly be used at the UCI BOF meeting. The new definition of "Stock of Concern" has to legally exist before it can be used in designing "action" or "management plans."

UCIDA submits this petition as fulfilling the requirements of AS 44.62.270, emergencies will be held to a minimum and are rarely found to exist. In this section, an emergency is an unforeseen, unexpected event that either threatens a fish or game resource, or an unforeseen, unexpected resource situation where a biologically allowable resource harvest would be precluded by delayed regulatory action and such delay would be significantly burdensome to the petitioners because the resource would be unavailable in the future.

Susitna Sockeye
Stock of Yield Concern
"Stock of Habitat Concern"

Background

During the 2008 Board of Fisheries (BOF) meeting Susitna sockeye were designated a Stock of Yield Concern due to a chronic inability to meet the Yentna SEG (range 90-160,000) as measured by sonar. Sonar enumeration of salmon escapement into the Susitna system began in 1981 using the Bendix sonar and in 2006 with the DIDSON system. Considerable uncertainty was associated with the escapement assessment so in 2006 ADF&G initiated a three-year study using alternative methods including weir counts and mark-recapture.

In 2009 ADFG released a special report outside of the normal three year cycle of escapement goal review because the errors with the sonar enumeration were so significant. The results of the study suggested that both the Bendix and DIDSON were grossly underestimating the number of sockeye salmon spawning in the Yentna River.

Fair, L. F., T. M. Willette, and J. Erickson. 2009. Escapement goal review for Susitna River sockeye salmon, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-01, Anchorage.

The report recommended eliminating the Yentna SEG and replacing it with SEG's for 3 individual lakes (Chelatna, Judd and Larson) in the Susitna River watershed. The new escapement goals became effective for the 2009 salmon runs.

Data from pages 18 and 21 of the report indicates that the Bendix sonar count (dating back to 1981) was biased low by more than 100 percent. While it is not possible to go back and re-count the escapement, it is evident the escapement goals were being met and in all years, except for 2005, the upper end of the goal range was significantly exceeded.

In the 2011 meeting on Upper Cook Inlet finfish, the Board of Fisheries, now aware that Susitna sockeye no longer met the criteria for a Stock of Concern, left the designation in place and enacted regulations to further restrict the Central District drift fleet in an attempt to reduce the yield (harvest) of northern bound stocks.

2013

In a memorandum to the BOF dated October 13, 2013, the ADF&G recommended that Susitna River sockeye salmon remain classified as a stock of yield concern because:

1) Five of the escapements in 3 different lakes (out of 15 total) have been below the minimum goal, and

2) Harvests in Central and Northern districts from 2008 through 2013 were generally less than the long-term averages.

Their justification was that in the Central District drift fishery, Susitna median yield (harvest) estimates in 2008–2013 were 26% larger than those from 2003–2007, and about 75% of those from 1983–2002 and 1993–2002, the two time periods to which recent (2003–2007) yields (harvest) were compared when determining the stock of yield-concern in February 2008.

The first glaring error with this justification is that the Department has no reliable data for run size, escapement or yield from 1981-2013 as the sonar counters used until 2008 were so inaccurate and there is still no reliable method for counting all the salmon that return to Mat-Su

streams. Without some reasonably accurate method for enumerating salmon escapement they have no way to determine the yield (harvest) as a percentage of run size.

The attempt to use reduced median yield (harvest) estimates as a justification for maintaining a Stock of Concern classification also fails as it does not recognize that there were new management regulations for the Central District drift fishery from 2008-2013 that were intended to reduce the yield (harvest). This application of circular logic has no business masquerading as science.

What does it mean? If the median yield (harvest) estimates from 2008-2013 were 26% larger than the 2003-2007 time period as the Department stated, then either the restrictions on the drift fishery are not effective at conserving particular stocks, or, these stocks are much more robust than were assumed. An alternative explanation is that the ADF&G engaged in a deliberate fabrication as they are using yields for comparison from a time period for which they have no reliable data.

The methodology of using combined escapement counts from three different lakes does not fit the criteria for a Stock of Yield Concern. The escapement goals for these 3 lakes (Chelatna, Judd and Larson) do need to be re-evaluated as the returns to Chelatna and Judd are showing oscillating patterns in their sockeye populations from year to year, this can be an indicator of over-escapement. In Judd Lake the fry size and weight suggest they are exceeding the rearing capacity of the lake and are near starvation. The Chelatna Lake escapement goal has been met four of the past five years, Judd Lake two of the past five years, and Larson Lake four of the past five years.

The October 13, 2013 memo from ADF&G to the BOF also failed to factor the increasing sport fish harvest into the yield (harvest). During the same time period, 2008-2013, while restrictions were placed on the commercial fisheries (both Central and Northern District) for conservation purposes, the sport fishery yield (harvest) had no similar restrictions and continued to increase.

Quote from ADF&G *Fisheries Management Report 10-50, 2011*: "The action plan states sport harvest will not be used to determine escapements or in developing escapement goals. Further, the Susitna sport fisheries will remain open with a three fish bag limit unless otherwise directed by the BOF and any harvest restrictions will be realized in the commercial fisheries..."

Stock of Habitat Concern

The Policy for the Management of Sustainable Fisheries (5 AAC 39.222) directs the ADF&G to provide the Alaska Board of Fisheries with reports on the status of salmon stocks and identify any salmon stock that presents a concern. The SSFP defines three levels of concern (Yield, Management and Conservation) with yield being the lowest level of concern and conservation the highest level of concern.

A stock of yield concern is defined as a "a concern arising from a chronic inability, despite the use of specific management measures, to maintain specific yields, or harvestable surpluses, above a stock's escapement needs".

A stock of management concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for the fishery".

A stock of conservation concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold or SET".

These three levels of concern all use the measurement of returning salmon, or escapement, as a threshold or trigger to determine the status of a stock. In the case of Susitna salmon stocks these levels of concern address the wrong end of the equation. The habitat for spawning and rearing salmon in the Susitna watershed is so affected by invasive Northern Pike, beaver dams, disease, culverts and the effects of urbanization that salmon production is the overriding problem; not the number of returning salmon.

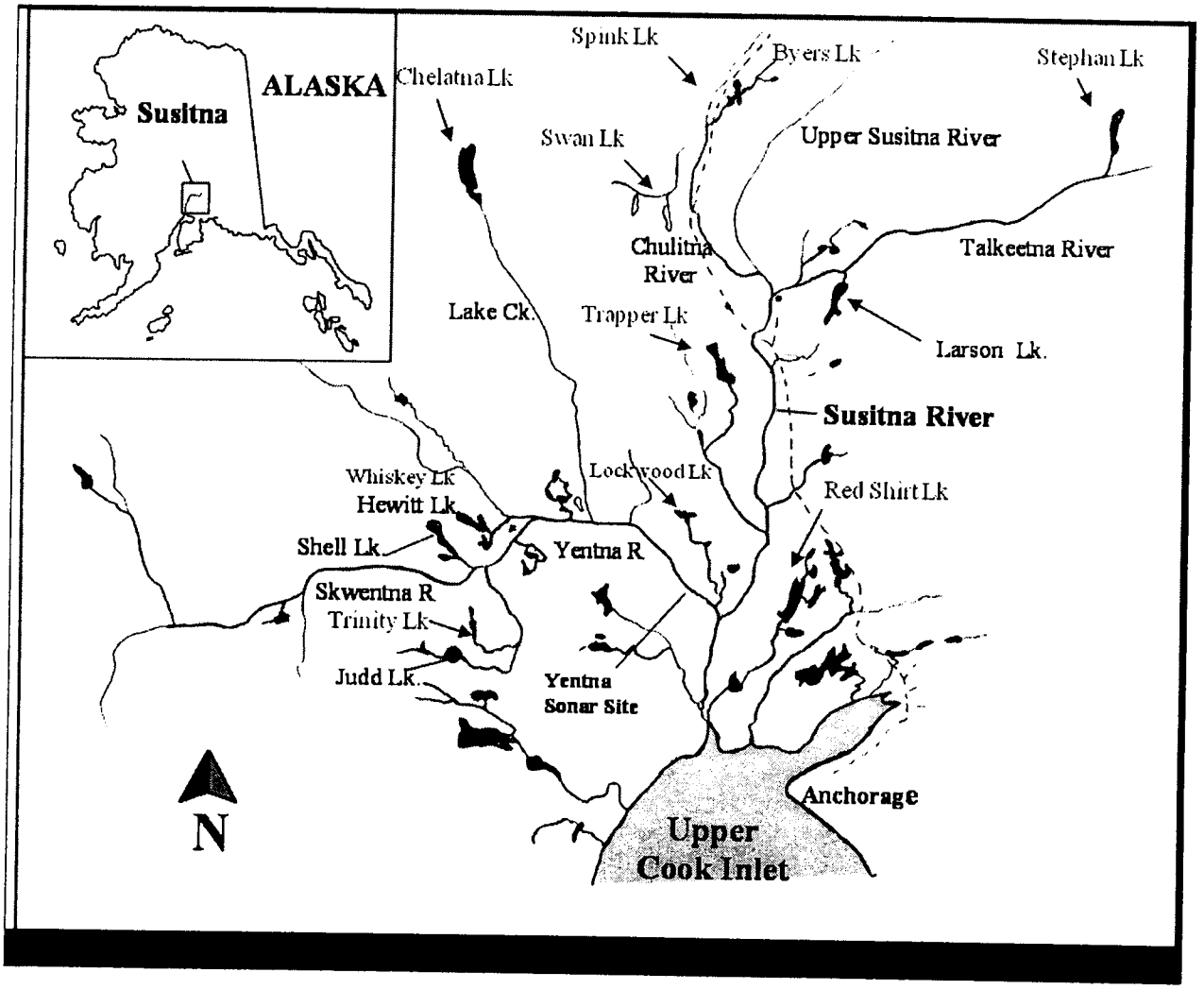
Quote from ADF&G *Upper Cook Inlet Management Report 2012* : "...unless the impacts from pike predation, disease and beaver dams can be significantly reduced, the total sockeye salmon production in the Susitna River drainage will continue to suffer, regardless of the amount of restrictions placed on commercial fisheries."

Quote from *A Watershed Perspective of Salmon Production in the Mat-Su Basin, 2013*: "The cause of declining salmon numbers in the Mat-Su Basin is linked to the decreasing ability of the salmon to successfully reproduce in its freshwater systems. It doesn't matter how many fish return to the Mat-Su rivers if they can't spawn or the young salmon can't survive there long enough to migrate out to sea. Invasive northern pike, beaver dams, rising water temperatures, over-escapement, parasites, pollution, improperly constructed culverts and other unmitigated effects of urbanization are slowly but surely chipping away at the future of salmon in the valley. Harvestable surpluses of sockeye, king and coho salmon in the Mat-Su Basin cannot be sustained without addressing the serious problems within the river systems".

Within the Sustainable Salmon Fisheries Policy, a new level of concern needs to be added - "A Stock of Habitat Concern," defined as "a concern arising from the inability of salmon to successfully spawn and rear in their freshwater habitats as a result of invasive species, parasites, disease, pollution, migration impedances or other habitat disturbances." This will enable the Board of Fisheries and ADF&G to focus their efforts on the cause of declining salmon runs, not just the effects.

Summary

- Sonar counts from 1981-2008 were inaccurate and biased low by more than 100%
- Stock of Yield Concern for Susitna sockeye was based on this bad data.
- Restrictions placed on the Drift Fleet and Northern District set nets for over 20 years were based on this bad data.
- Restrictions placed on commercial fisheries under the guise of conservation were not paired with restrictions on the sport fishery.
- Problems with Susitna salmon production have been identified and are the result of freshwater habitat issues.
- Intensive management of saltwater fisheries will never solve the problems found in the freshwater habitats of spawning and rearing salmon.


ALASKA
Susitna
Spink Lk
Byers Lk
Stephan Lk
Chelatna Lk
Swan Lk
Upper Susitna River
Chulitna River
Talkeetna River
Lake Ck.
Trapper Lk
Larson Lk.
Susitna River
Whiskey Lk
Hewitt Lk
Lockwood Lk
Red Shirt Lk
Shell Lk
Yentna R
Skwentna R
Trinity Lk
Judd Lk.
Yentna Sonar Site
N
Anchorage
Upper Cook Inlet

Susitna Sockeye Fry Size Relative to Escapement

Chelatna Lake	SEG range 20-65		
Year	Escapement*	Age 0 Fry Length (mm)	Age 0 Fry Weight (g)
2005		57.5	2.7
2006		50.8	1.7
2007	18,433*	68.1	4.0
2008	41,290*	45.6	1.3
2009	73,469*	60.6	2.8
2010	17,865*	48.2	1.7
2011	37,784*	52.2	2.0
2012	70,353*	46.9	1.3
2013	36,577*		
2014	70,555*		
*Weir count from previous year			

Judd Lake	SEG range 25-55		
Year	Escapement*	Age 0 Fry Length (mm)	Age 0 Fry Weight (g)
2005		43.8	1.0
2006		53.8	2.1
2007	40,633*	47.6	1.3
2008	58,134*	37.6	0.7
2009	54,304*	41.2	0.8
2010	43,153*	38.0	0.7
2011	18,361*	50.3	1.4
2012	39,997*	39.0	0.6
2013	18,303*		
2014	14,021*		
*Weir count from previous year			

Larson Lake	SEG range 15-50		
Year	Escapement*	Age 0 Fry Length (mm)	Age 0 Fry Weight (g)
2005		58.9	2.5
2006	9,751*	62.4	2.9
2007	57,411*	61.5	3.0
2008	47,736*		
2009	35,040*	64.2	3.1
2010	41,929*	59.9	2.9
2011	20,324*	71.9	4.4
2012	12,413*	61.7	2.9
2013	16,708*		
2014	21,813*		
*Weir count from previous year			

Historic Yentna Escapement Data from ADF&G reports

Year	Original Bendix Escapement Number	DIDSON Equivalent*	Upper End of Escapement Goal	DIDSON Adjusted for Fish Wheel Selectivity	Escapement Goal Exceeded Percentage	DIDSON Adjusted for Mark/Recapture	Escapement Goal Exceeded Percentage	Run Reconstruction	Escapement Goal Exceeded Percentage
1982	113,847	253,982	100,000	667,733	568%	523,203	423%		
1983	104,414	210,105	100,000	323,461	223%	432,816	333%		
1984	149,375	298,383	100,000	773,450	673%	614,669	515%		
1985	107,124	211,806	100,000	417,147	317%	436,320	336%		
1986	92,076	169,048	150,000	974,513	550%	348,239	132%	318,128	112%
1987	66,054	130,040	150,000	291,897	95%	267,882	79%	204,760	37%
1988	52,330	101,854	150,000	286,421	91%	209,819	40%	173,552	16%
1989	96,269	189,554	150,000	491,489	228%	390,481	160%	289,003	93%
1990	140,290	259,729	150,000	682,631	355%	535,042	257%	378,011	152%
1991	109,632	217,158	150,000	347,900	132%	447,345	198%	294,785	97%
1992	66,074	130,966	150,000	463,272	209%	269,790	80%	234,390	56%
1993	141,694	282,837	150,000	593,576	296%	582,644	288%	381,969	155%
1994	128,032	251,856	150,000	413,317	176%	518,823	246%	330,839	121%
1995	121,220	232,856	150,000	416,842	178%	479,683	220%	331,507	121%
1996	90,660	172,882	150,000	308,169	105%	356,137	137%	245,835	64%
1997	157,822	308,949	150,000	379,445	153%	636,435	324%	342,240	128%
1998	119,623	211,500	150,000	445,538	197%	435,690	190%	304,513	103%
1999	99,029	186,981	150,000	280,900	87%	385,181	157%	257,519	72%
2000	133,094	291,848	150,000	409,266	173%	601,207	301%	342,096	128%
2001	83,532	153,847	150,000	376,228	151%	316,925	111%	248,753	66%
2002	78,591	158,564	160,000	479,228	200%	326,642	104%	268,665	68%
2003	180,813	344,224	160,000	609,591	281%	709,101	343%	431,430	170%
2004	71,281	142,187	160,000	347,900	117%	292,905	83%	247,263	55%
2005	36,921	71,264	160,000	131,541	-18%	146,804	-8%	145,152	-9%
2006	92,051	166,697	160,000	390,567	144%	343,396	115%	311,197	94%
2007	79,901	125,146	160,000	206,146	29%	257,801	61%	239,849	50%
2008	90,146	131,772	160,000	252,804	58%	271,450	70%	233,677	46%
Average	103,774	200,224		435,592	214%	412,460	196%	285,006	87%

* Actual DIDSON counts used for 2006-2008

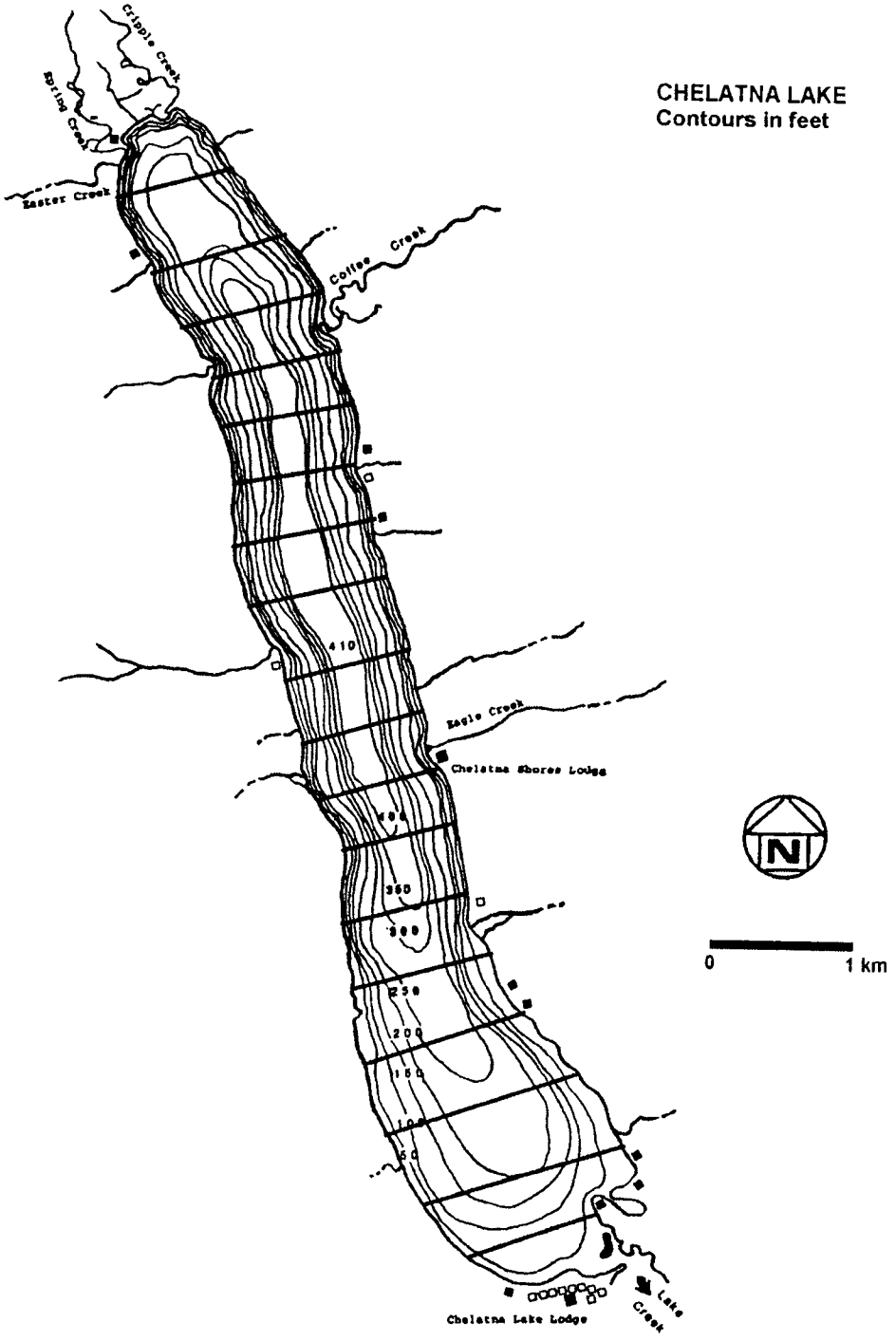
Appendix A12. Susitna River sockeye salmon studies, 2006-2013.

Yentna River Passage	2006	2007	2008	2009	2010	2011	2012	2013
Bendix	92,051	79,901	90,146	28,428				
DIDSON-adjusted	166,697	125,146	131,772	43,972–153,910	53,399–144,949	62,231–140,445	30,462–89,957	76,227–212,125

Weir Data	2006	2007	2008	2009	2010	2011	2012	2013
Chelatna	18,433	41,290	73,469	17,865	37,784	70,353	36,577	70,555
Judd	40,633	58,134	54,304	43,153	18,361	39,997	18,303	14,088
Larson	57,411	47,736	35,040	41,929	20,324	12,413	16,708	21,821
Weir Totals	116,477	147,160	162,813	102,947	76,469	122,763	71,588	106,464

Susitna Population Estimates	2006	2007	2008	2009	2010	2011	2012[b]	2013[c]
Mark Recapture	418,197	327,732	359,760	219,041	190,460	314,447	141,804	
MR : Weirs ratio	3.6	2.2	2.2	2.1	2.5	2.6	2.0	
MR : Bendix ratio	4.5	4.1	4.0	9.7	ND	ND	ND	ND

[a] Mark recapture estimates from 2009 to 2011 are preliminary values


CHELATNA LAKE
Contours in feet
Crippple Creek
Spring Creek
Easter Creek
Coffee Creek
410
Eagle Creek
Chelatna Shores Lodge
400
350
300
250
200
150
100
50
N
0
1 km
Chelatna Lake Lodge
Lake Creek