



Attn : Brenda Donas
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12/09/00

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The following is a summary of chinook assessment carried out during our recent broodstock collection activities on the upper Bulkley River.

Bulkley River Chinook (2000 brood)

Broodstock collection for the 2000 brood Bulkley chinook began on August 21, 2000 and by August 24th we had attained our target of 70,000 eggs. A total of 18 female and 62 male chinook had eggs or sperm collected from them, all of the males were then released back into the river after use. Eggs were transported unfertilized back to the hatchery and each female's eggs were then fertilized using sperm from 8 different males. Prior to incubation all eggs were rinsed, water hardened, disinfected and screened. Kidney samples were not taken this year as the Bulkley stock has been virtually BKD free.

Chinook assessment was carried out, in conjunction with these egg takes, including a helicopter count of salmon spawners on August 21, 2000. A total of 1,929 chinook were observed between the Morice River junction and the Bulkley Falls, with over 70 % occupying the section of river from Richfield Creek downstream to Knockholt. The salmon were well spread out into all of the spawning reaches this year, similar to last year's run. We sampled a total of 518 different chinook during our broodstock collection and assessment activities, and we also had 23 additional chinook recaptures identified by operculum punches. The overall composition of the sample this year was 69 % wild and 31 % adipose-clipped chinook. This indicates a very strong wild component to the run.

Assessment done during broodstock collection also allowed us to collect 65 heads from adipose-clipped chinook for coded-wire tag identification, these were taken from spawned-out fish. As well, scale samples were collected from all of the brood females.

Results of the helicopter count were as follows :

	<u>Aug. 21st</u>
Above Bulkley Falls	0 chinook
Meanwhile Creek	49 chinook
Topley	212 chinook
Richfield Creek	438 chinook
Perow Station	146 chinook
McQuarrie Creek	86 chinook
Below McQuarrie Creek	703 chinook
Below Knockholt	18 chinook
Houston	126 chinook
in Buck Creek	151 chinook
Total observed / flight	1,929 chinook

Visibility during the assessment flight was generally good, and was fairly consistent for the entire length of the system. Chinook that were actively spawning were clearly visible while some of the fish holding in the deeper pools were difficult to get a total count on. We did two comparative ground counts around McQuarrie Creek to verify the accuracy of the aerial count.

From these observations, and incorporating the two ground counts carried out during the same period, it is estimated the chinook escapement to the upper Bulkley in 2000 was approximately 2,560 adults (four to six year old chinook). We observed very few three year old jacks during broodstock collection, unlike 1999 when large numbers were present. The four-year old component of the run was extremely strong this year indicating a good showing of fives in 2001.

The condition of spawning chinook was very good again this year, and very few pre-spawn mortalities were seen. Egg quality was very good as well and the number of females in the run was high. It appears that both the four and five year old age classes were strong in 2000. Close to 60 % of the chinook captured this year were males, with most being four year olds. The average length (POH) of the brood females collected this year was 670 m.m. and the average weight was 6.0 kilograms, the females ranged from 560 m.m. to 750 m.m. in length.



Mike O'Neill, Manager

c.c. Hans Galesloot, DFO, Vancouver
Roberta Cook, DFO, Vancouver
Dave Peacock, DFO, Prince Rupert
Henry Ragetli, DFO, Smithers

ESCAPEMENT SUMMARY ATTACHMENT (2000)

Bulkley Chinook (478)

Hatchery staff estimate of the total chinook escapement in 2000 :

Ground sampling of two different sections of the upper Bulkley River was carried out on the same day as the helicopter flight. The total count on the ground sample was 280 spawners while the helicopter count for the same section was 211. This indicates a correction factor of 1.33 for the total count of 1,929, for an estimate of approximately 2,560 adult chinook spawners in 2000.

Hatchery staff estimates of Sport and Native fisheries :

Sport - based on 43 CWT heads turned in by anglers in 2000, and an estimated 50% recovery rate. This indicates 86 CWT's and 192 wild chinook from the Bulkley run harvested in 2000. The escapement sample of 518 spawners in 2000 indicated the stock was 31% adipose clips and 69% wild unmarked fish. None of the sport CWT's sampled that carried pins were identified as 3 year old jacks, twenty (51%) were 4 year olds, eighteen (46%) were five years old, and one (3%) was a 6 year old fish.

Native - in years past the harvest/mortality rate in the Moricetown fishery has been estimated at 50% to 60%. A reduction in the gaffing done at this location, and increased dipnet harvesting, has lowered the estimated mortality rate in this fishery to 30% for 2000. No heads were turned in this year.

ESCAPEMENT SUMMARY FORM

Prepared: 14-Mar-01

TOTAL RETURNS TO RIVER FOR : 2000 Bulkley River Chinook Spring-run Page 1
478

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
FISH REMOVED FROM THE SYSTEM						
Number of fish taken for brood stock		62	18	80		
Number of fish given to natives (not including brood stock carcasses)				0		
Number of fish sold for surplus (not including brood stock carcasses)				0		
Number of mortalities and/or fish used for other purposes				0		

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
TOTAL NATURAL SPAWNING RIVER POPULATION						
Number sampled for marks and released		247	191	438		
Number counted but NOT sampled for marks	1,929			1,929		
Additional estimate NOT counted or sampled	113			113		
+ Total Hatchery staff estimate of natural spawners	2,042	1,465	1,015	2,480	0	0
Other Branch / Agency estimate of natural spawners				0		

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
ESTIMATED FRESH WATER SPORT FISHERY (IF APPLICABLE)						
+ Total Hatchery staff estimate of sport fishery		166	112	278		
Other Branch / Agency estimate of sport fishery				0		

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
ESTIMATED NATIVE FISHERY (IF APPLICABLE)						
+ Total Hatchery staff estimate of native fishery		722	490	1,212		
Other Branch / Agency estimate of native fishery				0		

- INDICATE METHODS USED TO ESTIMATE POPULATION.
(IF COMMENTS ARE REQUIRED, PLEASE USE REVERSE)
- Fence, Fishway, flashboard or tower (Continuous Count- 24 hrs /day)
 - Fence, fishway, flashboard or tower (Interpolated Count < 24hrs / day)
 - Petersen estimate
 - Index by Redd count, peak count, dead pitch, floats, helicopter, etc.
 - Visual estimate from brood stock collection, walks or spotchecks, etc.
 - Other method - Use reverse or space below to describe.

PLEASE STAPLE

COMPLETE FOR EACH STOCK

ESCAPEMENT SUMMARY FORM

COMPLETE FOR EACH STOCK AND STAPLE

Prepared: 14-Mar-01

SAMPLING INFORMATION FOR : 2000 Bulkley River Chinook Spring-run Page 2

SAMPLE: 478

- Hatchery Swim-Ins
- Channel Dead Pitch
- Live +
- Dead -
 - Salt Water
 - Estuary
 - Fresh Water
 - + Lake
 - + River
 - + Above Fence
 - + Below Fence
 - + At Fence
 - + Total Count
 - + Partial Count

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
NUMBER OF FISH COUNTED (at trap or fence if appropriate)	1,929			1,929		
NUMBER OF FISH EXAMINED FOR MARKS		309	209	518		
NUMBER OF C.W.T. MARKS FOUND		82	79	161		
NUMBER OF other MARKS FOUND		0	0	0		
NUMBER OF HEADS REMOVED FOR TAG DECODING		33	32	65		
NUMBER OF HEADS DISSECTED FOR TAGS		33	32	65		
NUMBER OF LOST OR MISSING HEADS (recorded as NO-DATA by the Head Lab)		0	0	0		

IF ANGLING OR NETTING, ARE LIVE FISH RETURNED TO THE RIVER SAMPLED FOR MARKS BEFORE RELEASE
 YES NO

IF YES, ARE RELEASED FISH MARKED TO PREVENT DOUBLE COUNTING?
 (If released fish are not marked, describe the method used to obtain a representative mark rate. Use reverse if necessary.)
 YES NO

ARE RECAPTURES A SIGNIFICANT PORTION OF FISH EXAMINED FOR MARKS?
 YES NO (23 out of 541)

NUMBER OF ADIPOSE CLIPS RECORDED AS:

	Unknown Adults	Males	Females	Total Adults	Jacks	Immatures
No data	500000			0		
Cut short	600000			0		
Unreadable	700000			0		
No pin	800000			0		
Lost pin	900000			0		
Subtotal	0	0	0	0	0	0