

## Abstracts - Spawner Enumeration

### Nechako and Stuart Rivers Chinook Spawner Enumeration 1988 (M88-3)

Prepared by D. Rowland, J. Abbott (Envirocon Pacific Ltd.) and M. Fretwell (DFO) February 1989

In 1988, the Nechako and Stuart rivers adult chinook salmon (*Oncorhynchus tshawytscha*) escapements were enumerated in eight helicopter flights from August 17 to October 7. Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the (Nechako River) Settlement Agreement. Visibility and viewing conditions were considered good to excellent during the Nechako River flights and the counts can be considered a good estimate of the chinook present. Area-under-the-curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 2,692 chinook. The Stuart River was turbid during many of the 1988 flights. The AUC estimate (994) for the Stuart River was 47% of the 2,100 carcasses recovered by an intensive dead pitch program. This suggests that aerial enumeration was not suitable for estimating Stuart River escapement in 1988.

### Nechako and Stuart Rivers Chinook Spawner Enumeration 1989 (M89-1)

Prepared by G.J. Birch (Aquatic Resources Ltd.), J.S. Mathers (DFO) and W.O. Rublee (Triton Environmental Consultants Ltd.) April 1993

In 1989, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was enumerated by eight helicopter flights from August 16 to October 4. Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the (Nechako River) Settlement Agreement. Area-under-the-curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 2,915 chinook.

In the Stuart River, an index of spawning escapement was obtained by carcass recovery. A total of 970 chinook carcasses were recovered from the main spawning areas in the upper reaches of the Stuart River.

### Nechako and Stuart Rivers Chinook Spawner Enumeration 1990 (M90-1)

Prepared by R.J. Beniston (D.B. Lister and Associates) and Gail Faulkner (DFO) April 1993

Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the Settlement Agreement. In 1990, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was

enumerated by seven helicopter flights from August 22 to October 4. The mean female chinook residence time of  $9.4 \pm 2.1$  days was used to estimate the population. The area-under-the-curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 2,642 chinook.

In the Stuart River, an index of spawning escapement was obtained by carcass recovery. A total of 2,208 chinook carcasses were recovered from the main spawning areas in the upper reaches of the Stuart River.

#### Nechako and Stuart Rivers Chinook Spawner Enumeration 1991 (M91-1)

Prepared by G. Faulkner and B. Ennevor, DFO April 1994

Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the Settlement Agreement. In 1991, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was enumerated by nine helicopter flights from August 14 to October 9. The mean female chinook residence time of  $9.2 \pm 3.2$  days and the overflight observations were used to estimate the population. Area-Under-the-Curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 2,360 chinook.

In the Stuart River, an index of spawning escapement was obtained by adult tagging and subsequent carcass recovery. A total of 3,112 adult chinook carcasses were recovered from the main spawning areas in the upper reaches of the Stuart River. The population estimate of the Stuart River was 7,500 chinook.

#### Nechako and Stuart Rivers Chinook Spawner Enumeration 1992 (M92-1)

Prepared by G. Faulkner and B. Ennevor, DFO April 1994

Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the Settlement Agreement. In 1992, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was enumerated by seven helicopter flights from August 21 to October 2. The mean female chinook residence time of  $11.1 \pm 3.4$  days and the overflight observations were used to estimate the population. Area-Under-the-Curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 2,498 chinook.

In the Stuart River, an index of spawning escapement was obtained by adult tagging and subsequent carcass recovery. A total of 3,265 adult chinook carcasses were recovered from the main spawning areas in the upper reaches of the Stuart River. The population estimate of the Stuart River was 15,000 chinook.

#### Nechako and Stuart Rivers Chinook Spawner Enumeration 1993 (M93-1)

Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the Settlement Agreement. In 1993, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was enumerated by seven helicopter flights from August 20 to October 1. The mean female chinook residence time of  $10.2 + 1.7$  days and the overflight observations were used to estimate the population. Area under the curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 664 chinook.

In the Stuart River, an index of spawning escapement was obtained by adult tagging and subsequent carcass recovery. A total of 188 chinook carcasses were recovered from the main spawning areas in the upper reaches of the Stuart River. The population estimate of the Stuart River was 1,300 chinook.

#### Nechako and Stuart Rivers Chinook Spawner Enumeration 1994 (M94-1)

Prepared by G. Faulkner and B. Ennevor, DFO May 1995

Aerial counts of Nechako River chinook spawners provide the primary assessment of achievement of the Conservation Goal as outlined in the Settlement Agreement. In 1994, the Nechako River adult chinook salmon (*Oncorhynchus tshawytscha*) escapement was enumerated by nine helicopter flights from Aug. 19 to Oct. 7. The mean female chinook residence time of  $8.9 + 2.8$  days and the overflight observations were used to estimate the population. Area under the curve (AUC) methodology was applied to the Nechako River escapement data and yielded an estimated escapement of 1,144 chinook.

In the Stuart River, an index of spawning escapement was obtained by adult tagging and subsequent carcass recovery. A total of 176 adult chinook were tagged with a subsequent recovery of 664 chinook carcasses from the main spawning areas in the upper reaches of the Stuart River. The population estimate of the Stuart River was 2,420 chinook.