Pacific Salmon

The range of Pacific salmon extends from southern California, north along the Canadian and Alaskan coasts to rivers draining into the Arctic Ocean, and south along the coasts of Russia, Japan, and Korea. There are eight species of Pacific salmon, six of which (sockeye, pink, chum, chinook, coho, and steelhead) are commonly found on the west coast of North America. All six are currently common in freshwater and marine ecosystems of PNCIMA.[1]

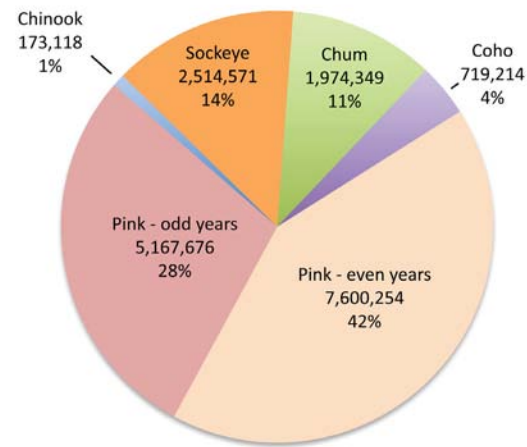### Salmon Escapement Database System (SEDS)

Escapement can be defined as the number of fish returning to spawning grounds to reproduce. NuSEDS is Fisheries and Oceans Canada (DFO) Pacific Region's centralized database that holds adult salmon escapement data. It was built to centrally store spawner survey data, spawner abundance data and the linkages between the two. The most commonly reported data are annual abundance estimates. These are stored against populations which typically have been defined by traditional groupings of fish based on freshwater locations and run timing. These estimates often go back as far as the early 1950s, but there can be huge variation in their reliability. NuSEDS is a revision of a previous database (SEDS).[2]

Data were collected through surveys consisting of ground level (walk, snorkel, boat) and aerial inspections (helicopter, fixed wing), mostly conducted after the mid-1990s.[2]

Photo: DFO/ PBS/ Nanaimo

Chinook mark recapture survey, Khutzemateen.
Photo: Coral Cargill

Salmon Escapement Data: Proportion of Escapement Observations by Species (1950-2009)

Chinook 173,118 — 1%
Sockeye 2,514,571 — 14%
Chum 1,974,349 — 11%
Coho 719,214 — 4%
Pink - odd years 5,167,676 — 28%
Pink - even years 7,600,254 — 42%

Methodology

NuSEDS is not a spatial database, so for the purposes of the accompanying map a spatial dataset was created to display salmon escapement observations within the PNCIMA region. Observational information was obtained for five species of salmon (chinook, chum, coho, pink and sockeye) for all DFO Management Areas within PNCIMA. Results were organized by stream name to display values for all five species surveyed within that stream. The breakdown of the data by species is presented in the pie chart. To adjust for effort, escapement values were averaged over the number of years a stream was surveyed.[2]

To convert the dataset to a map, the table of average escapement data was joined to the BC Watershed Atlas using the 1:50,000 BC Provincial Macro Reaches dataset, and the unique Watershed Code key. It is important to note that data displayed on this map do not represent actual fish distribution throughout the entire macro reach system. There could be barriers or obstacles present in streams or rivers that inhibit fish passage. Actual fish distribution may be contained to the lower portion of each macro reach system.[2]

1 Lucas, B.G., Verrin, S. and Brown, R. (Editors). 2007. Ecosystem overview: Pacific North Coast Integrated Management Area (PNCIMA). Can. Tech. Rep. Fish. Aquat. Sci. 2667: xiii + 104 p.
2 Bruce Baxter, NuSEDS Database Administrator, DFO. Personal communication, June 15, 2010.

NOTE: Content displayed on this map may not represent fish distribution through the entire macro reach system. See Methodology section on facing page.

Salmon Escapement Observations (1950 - 2009)
Avg Escapement / Year - All Species*

——	2 - 18963
——	18964 - 78698
——	78699 - 232554
——	232555 - 454495
——	454496 - 1877405
——	PNCIMA Boundary (including watersheds)
——	Exclusive Economic Zone Boundary

*Data classified using Natural Breaks (Jenks)

Source:
Fisheries and Oceans Canada, 2010
PNCIMA Basemap

Map projection: BC Albers
Datum: NAD 83

0 25 50 75 100
Kilometres