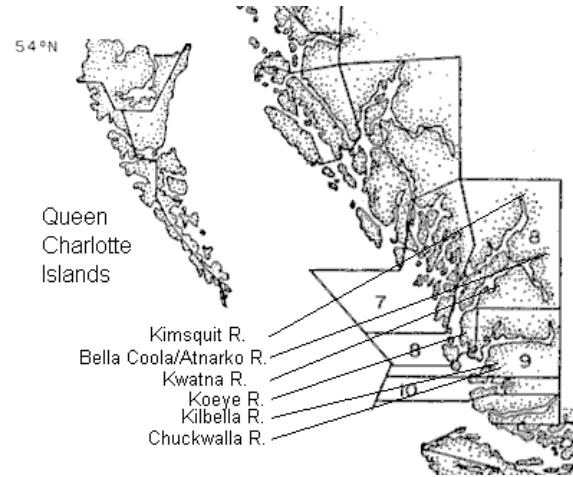


Central Coast Pink Salmon



Background

Pink salmon, *Oncorhynchus gorbuscha*, is the most abundant of the seven species of Pacific salmon. As adults they are also the smallest, averaging 1.0-2.5 kg (Heard 1991). Pink salmon have a two-year life span. Upon emergence from the gravel pink salmon fry swim quickly to sea and grow rapidly as they make extensive feeding migrations. After spending eighteen months in the ocean the maturing fish return to their natal rivers to spawn and die. Because of this fixed two-year life cycle, odd and even stocks spawning in the same stream are reproductively isolated from each other, and represent genetically different lines (Beacham et al. 1988).

The central coast of British Columbia (statistical areas 7-10) has over 130 streams and rivers supporting populations of pink salmon. Central coast streams support both odd and even year stocks. Since 1960, total returns among monitored streams indicate that even year pinks are usually more abundant than odd year fish. Area 8 encompasses over 40 pink salmon streams, which account for well over 75 % of total regional returns. Within this area, the Bella Coola/Atnarko River system supports the largest populations of pink salmon, with recent (1990-1996) even and odd year escapements numbering as high as 3.1

and 2.2 million fish, respectively. This system often accounts for over 50% of the central coast pink escapements. The Kwatna, Koeye and Kimsquit Rivers are also important pink salmon producers. Areas 7 and 9 each produce in the order of 200-300 thousand fish annually. Area 7 contains over 60 pink producing streams, though none of these support large populations. Area 9 contains fewer pink streams (~25) with the Chuckwalla and Kilbella Rivers supporting moderately large populations. Area 10 contains fewer than 10 pink streams, all supporting relatively small populations.

The Fishery

Average British Columbia Central Coast Pink Salmon Catch by Decade (millions of fish)

1961-70		1971-80		1981-90	
Even	Odd	Even	Odd	Even	Odd
5.8	1.3	2.5	0.6	3.4	1.3

For much of this century, the central coast has been an important area for commercial

catches of pink salmon. Catches reached a

1983, in order to minimize interceptions of Fraser River pink and sockeye, the fishery was moved further inshore, thus creating a more terminal fishery. Area 7 provides limited commercial fishing opportunities for a small fleet on a mix of numerous small stocks. The area 8 pink fishery is dominated by the Bella Coola/Atnarko River stock, but also harvests a Koeye River stock. Occasionally, small targeted fisheries are permitted in areas 9 and 10, when target escapement goals are met. There is no directed native food fishery for pink salmon on the central coast, though some pink are caught incidentally during fisheries for other Pacific salmon. The same is true for the sport fishery, though pinks will sometimes be targeted when chinook and coho catch rates are poor.

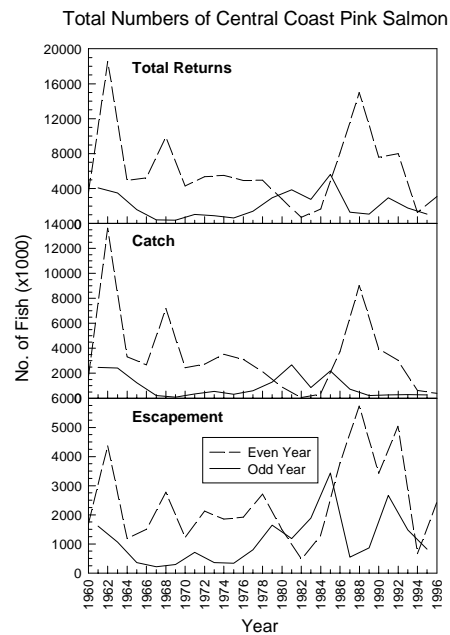
Resource Status

For management purposes, both catch and spawning escapement data are used as indicators of stock abundance. Each area contains key streams whose escapements are actively monitored in-season to determine run timing and size. This is accomplished through visual counts of fish in streams either by air or by walking the streams. Escapements to most other pink streams are also monitored, and generally follow the same abundance trends as those in key streams. Commercial catch-per-unit-effort is monitored as an indicator of overall pink abundance. This information provides managers with an indication of whether target escapements will be met, and hence which harvest strategies will be permitted. Stock-recruitment relationships are also used to provide forecasts of run size (Wood et al. 1995, 1996). In addition to adult enumeration, hydraulic sampling of the Atnarko River and spawning channel is

record high of 13.5 million fish in 1962. In

carried out in the fall and spring to estimate overwintering mortality. Such mortality can be high during unusually high or low flow conditions.

Returns of pink salmon to the central coast over the past 36 years have been highly variable in all areas, and in both even and odd years. As recently as 1988, returns peaked at over 15 million fish. Returns over the last several odd and even year cycles have been declining in some areas. The Bella Coola/Atnarko River system



suffered a large decline from over 3 million fish in 1992 to less than 500 thousand fish in 1994. However 1996 returns increased to 1.2 million fish. In fact, 1996 returns indicate that populations throughout the central coast are again rebounding. Escapements reached record levels in over half a dozen systems, including the Koeye, Kwatna and Chuckwalla Rivers. All of the six river systems previously mentioned reached their escapement targets. While odd year returns

have declined recently in some systems, returns were not low by historical standards.

Outlook

Even year central coast populations appear to be increasing after several cycles of low abundance. Increased returns for odd year stocks in areas 8 and 9 are predicted for 1997 as well (Wood et al. 1996). The conservative harvest management approach currently in place in this region appears to be effective in conserving pink salmon, and should ensure their long-term viability.

For more information contact:

Contact: Rick McNicol
Stock Assessment Division
Pacific Biological Station
Nanaimo, BC V9R 5K6

Tel: (250) 756-7092
Fax: (250) 756-7053
E-Mail: mcnicolr@pac.dfo-mpo.gc.ca

References

Beacham, T. D., R. E. Withler, C. B. Murray and L. W. Barner. 1988. Variation in body size, morphology, egg size, and biochemical genetics of pink salmon in British Columbia. *Trans. Am. Fish. Soc.* 117: 109-126.

Heard, R. L. 1991. Life history of pink salmon (*Oncorhynchus gorbuscha*). In C.

Groot and L. Margolis (eds.). *Pacific Salmon*. UBC Press.

Wood, C., D. Rutherford, D. Peacock, and S. Cox-Rogers. 1995. Assessment of recruitment forecasting methods for selected salmon stocks in northern British Columbia. PSARC Working Paper S95-12.

Wood, C., D. Rutherford, D. Peacock, and S. Cox-Rogers. 1996. Preseason 1997 run size forecasts for major sockeye, pink, and chum salmon stocks in northern British Columbia. PSARC Working Paper S96-20.

This report is available from:

PSARC Secretariat
Pacific Biological Station
Nanaimo, B.C. V9R 5K6

Phone: (250) 756-7208
Fax: (250) 756-7209
Email: psarc@pac.dfo-mpo.gc.ca

ISSN 1480-4913 (for English series)
ISSN 1480-4921 (for French series)

La version française est disponible à l'adresse ci-dessus.



Correct citation for this publication

DFO, 1999. Central Coast Pink Salmon. DFO Science Stock Status Report D6-03 (1999).