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Seasonal growth of juvenile coho salmon *Oncorhynchus kisutch* scales in the Bolshaya River, West Kamchatka

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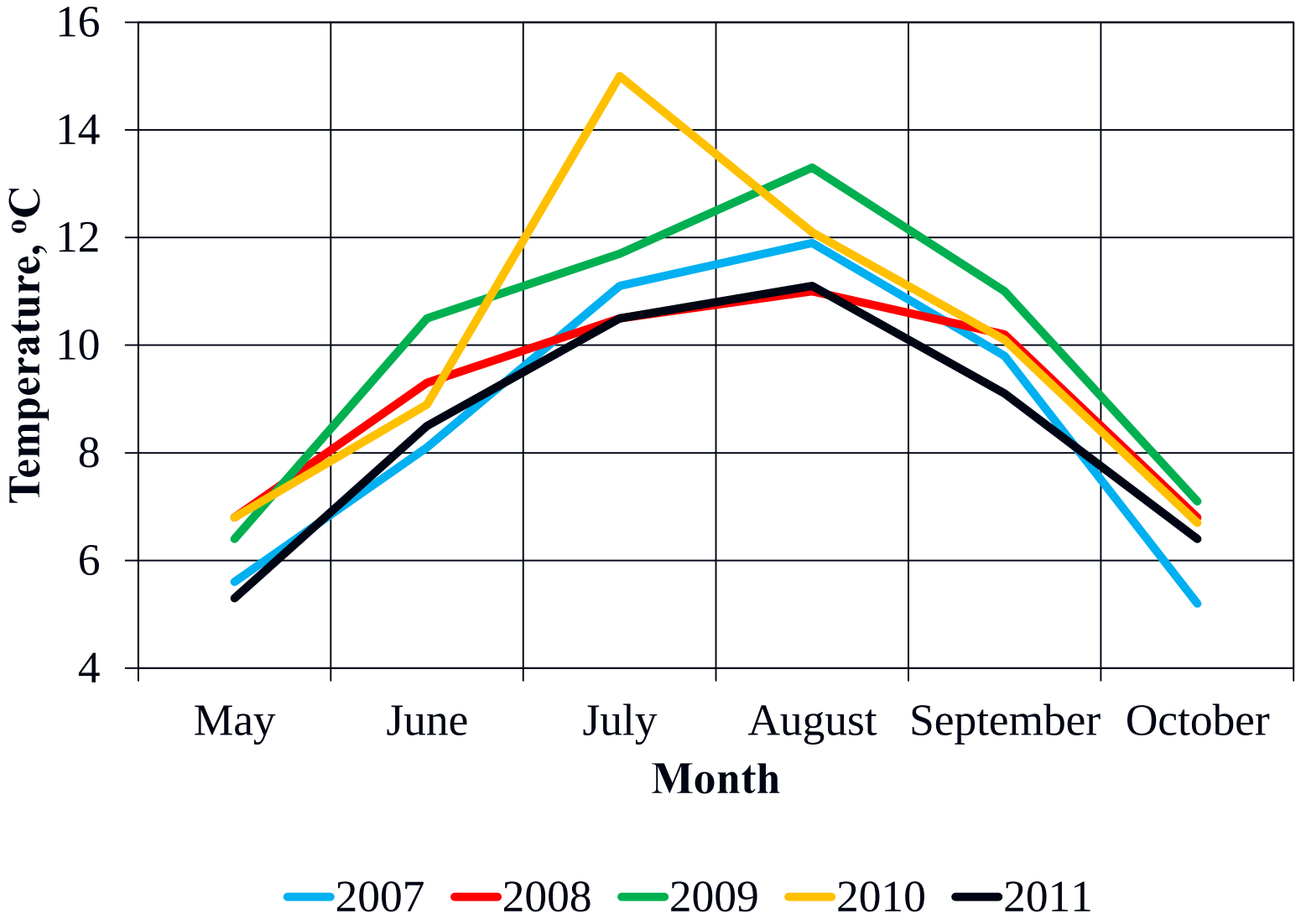
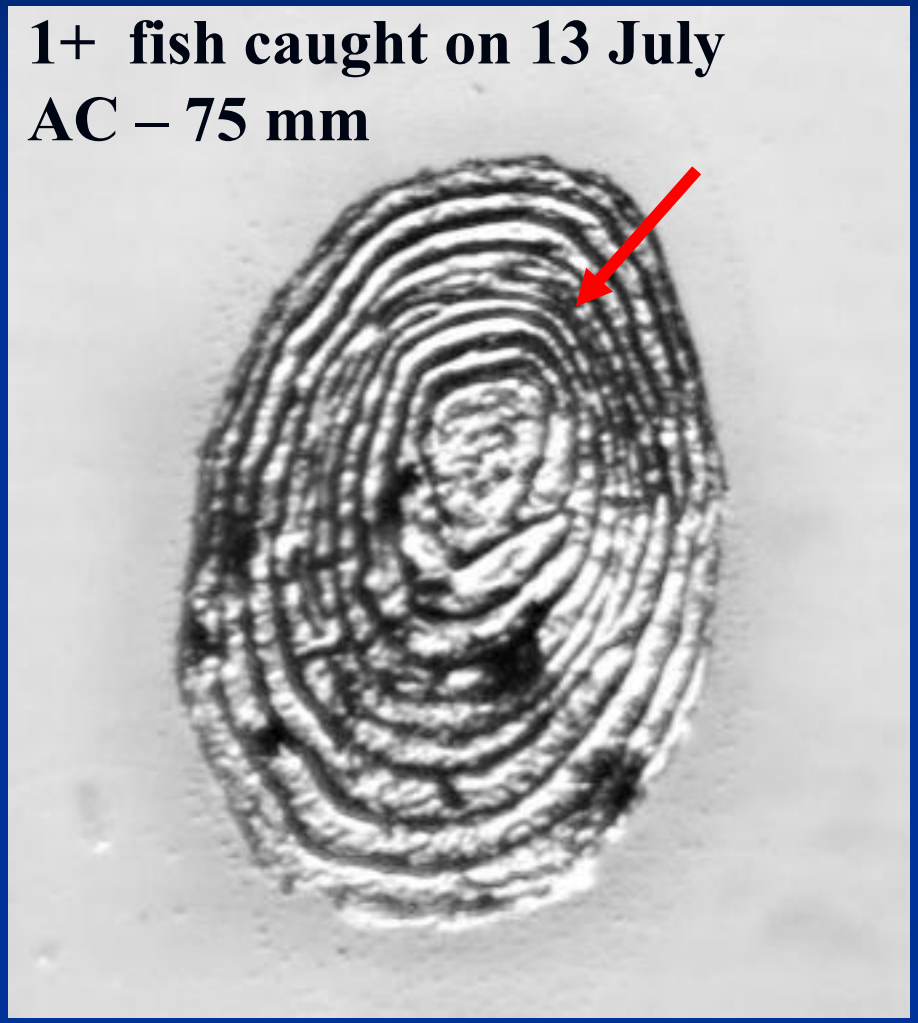
Research area
Bolshaya River watershed

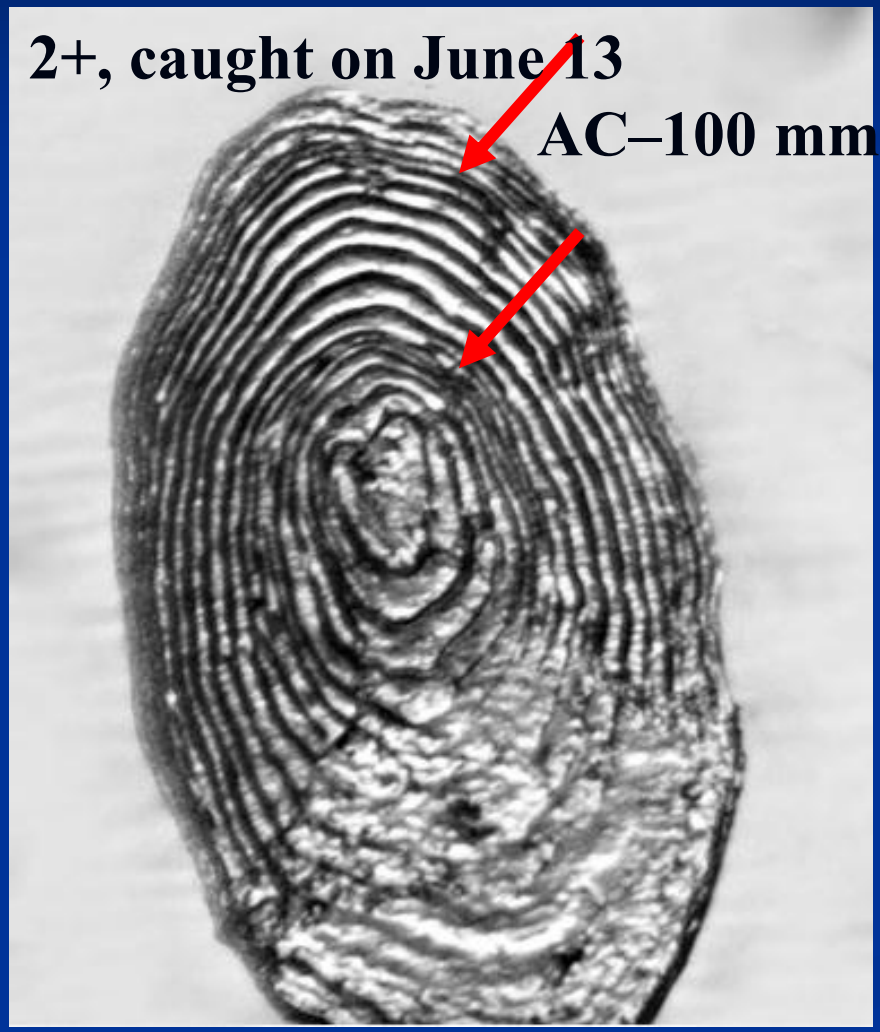
Water temperature in Bolshaya River



Scale of juvenile coho salmon demonstrating an intense seasonal growth and increment of new sclerites after the annual ring (red arrow)

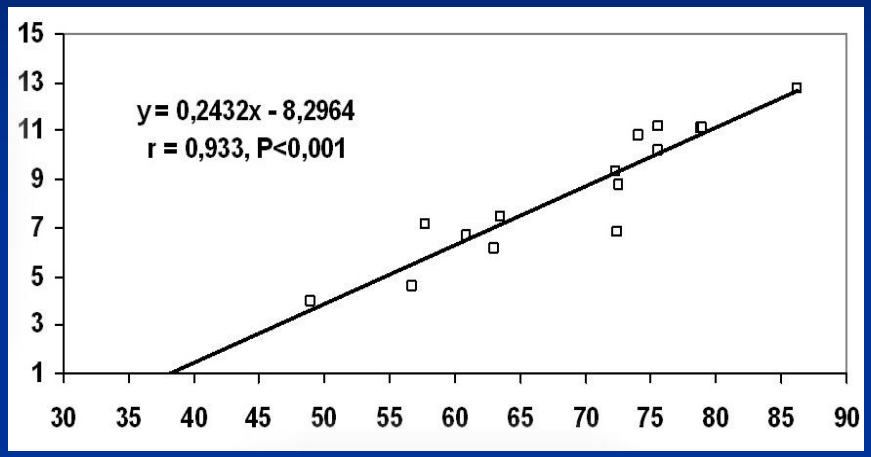


Scale of juvenile coho salmon when restarting the growing season has began not long ago, and there is a small increment of sclerites after the last annual ring

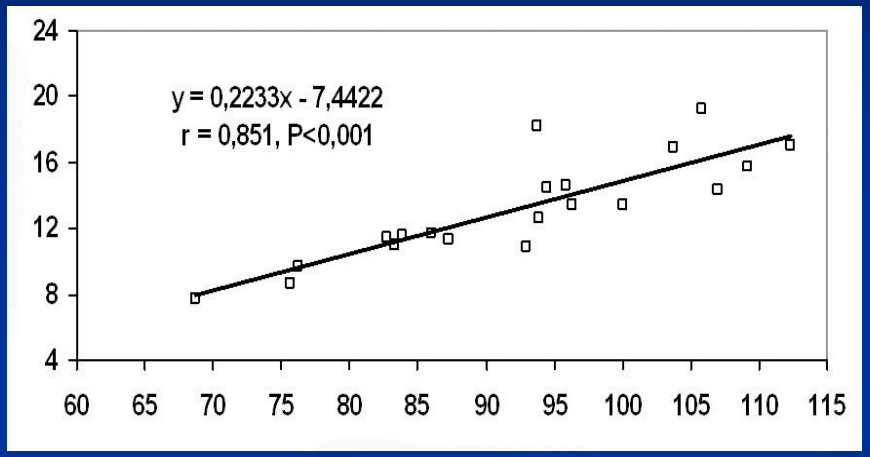


Correlation between averaged body length and averaged number of sclerites at scale

1



2



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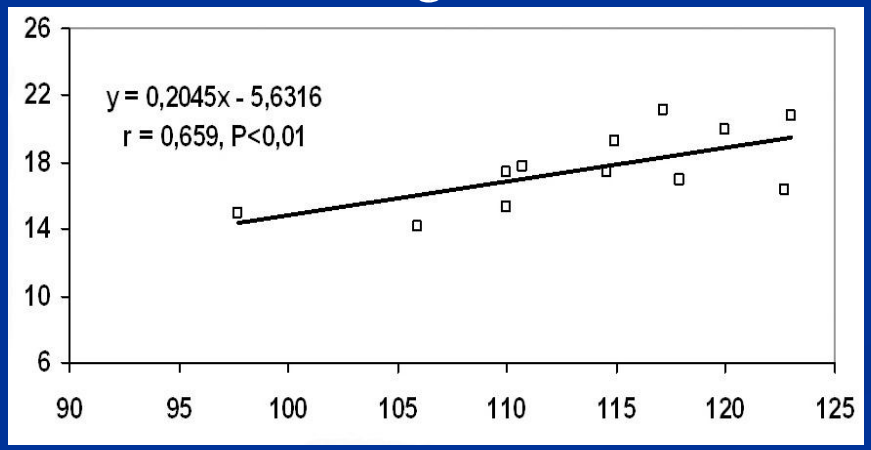


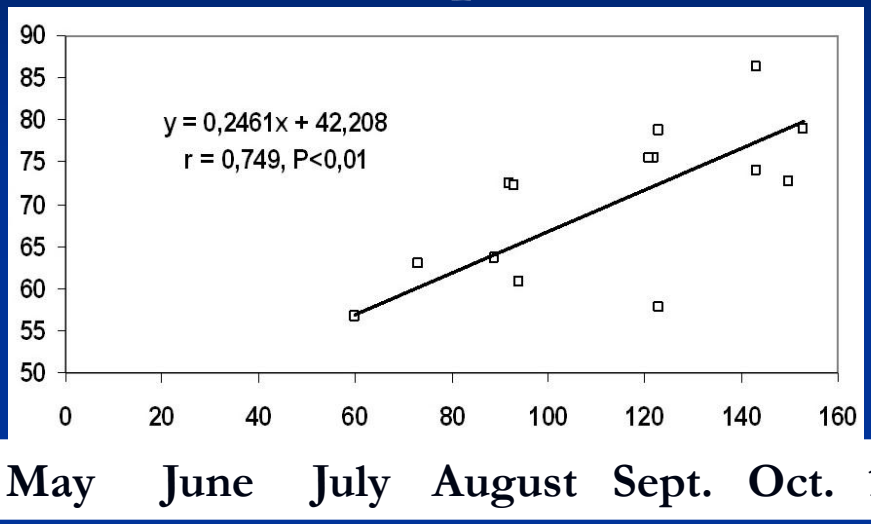
1 – underyearling (0+),

2 – one-year-old (1+),

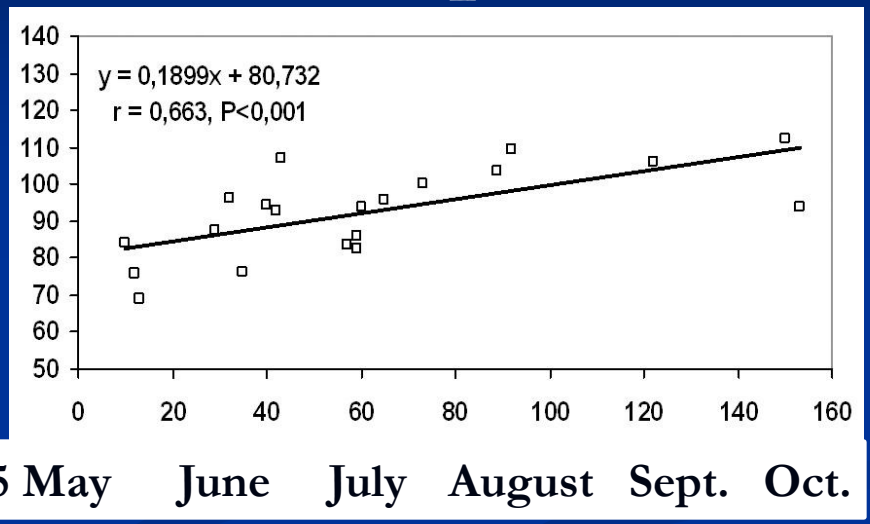
3 – two-years-old (2+).

Correlation between the date of catch (number of days since May 15) and averaged body length

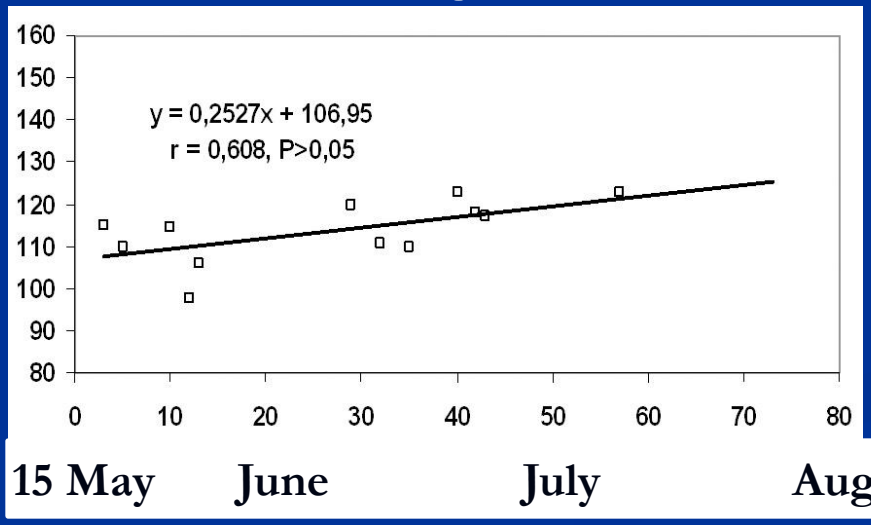
1



2



3

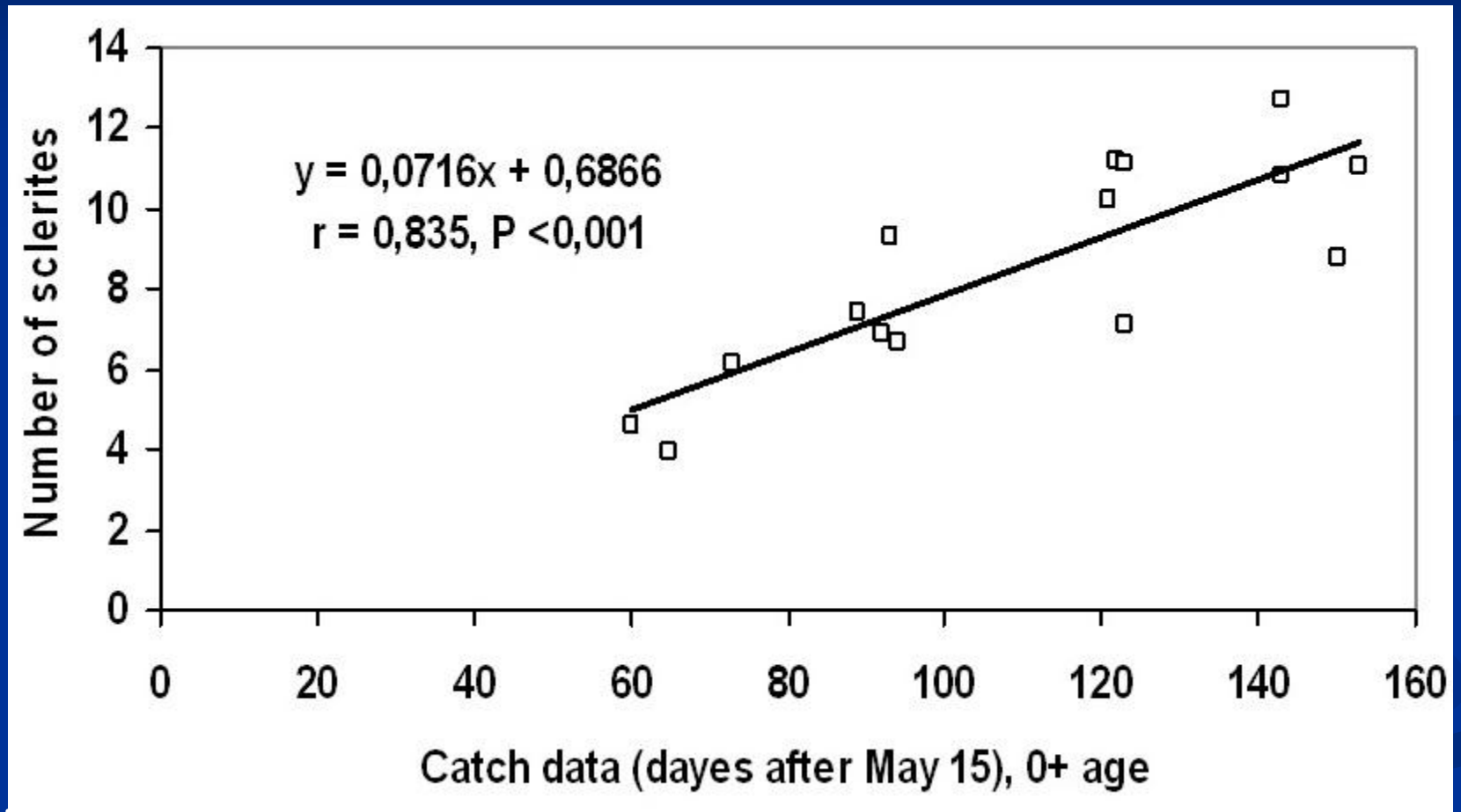


1 – underyearling (0+),

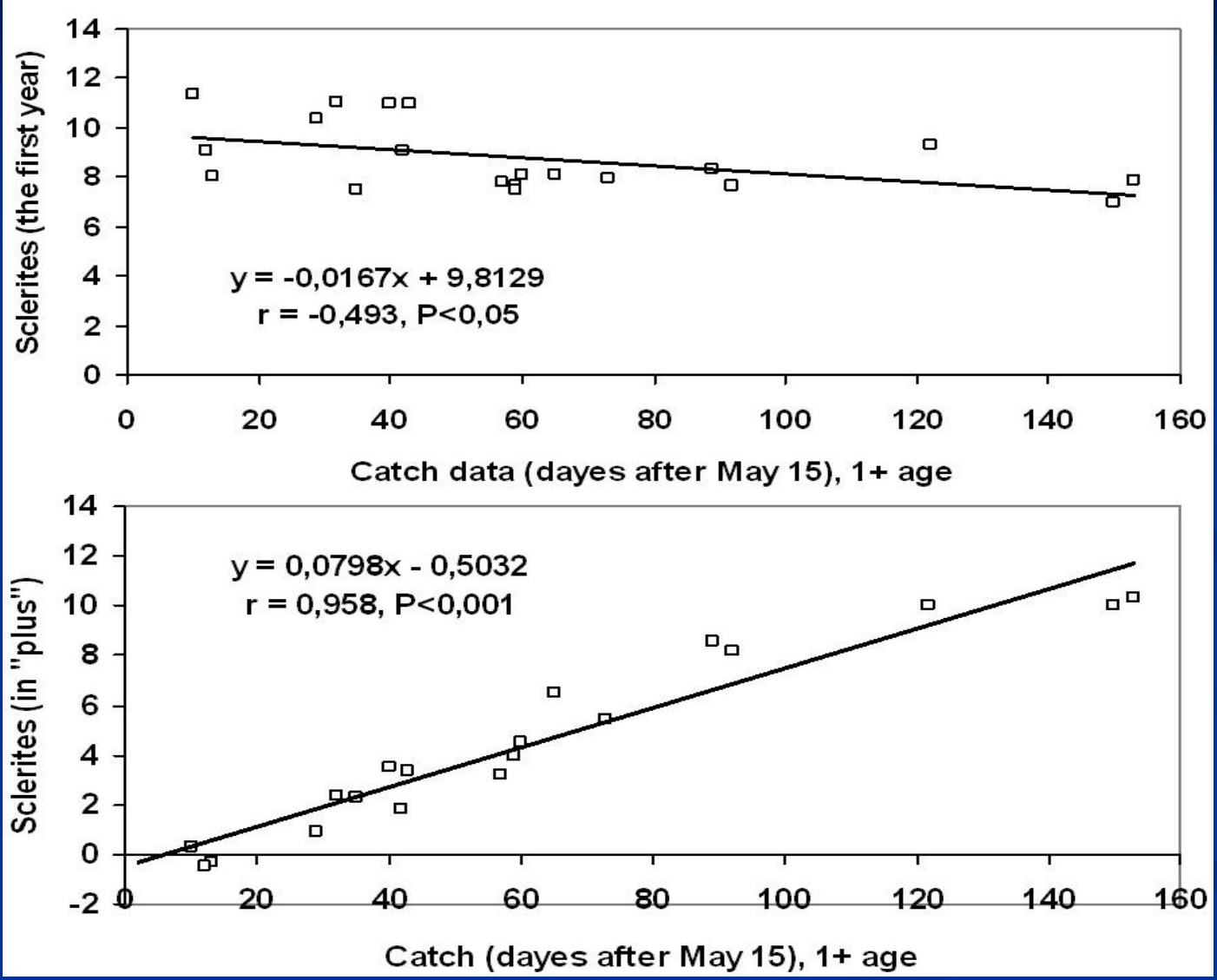
2 – one-year-old (1+),

3 – two-years-old (2+).

Correlation between the date of catch and averaged number of sclerites at scale of underyearling (0+) coho salmon



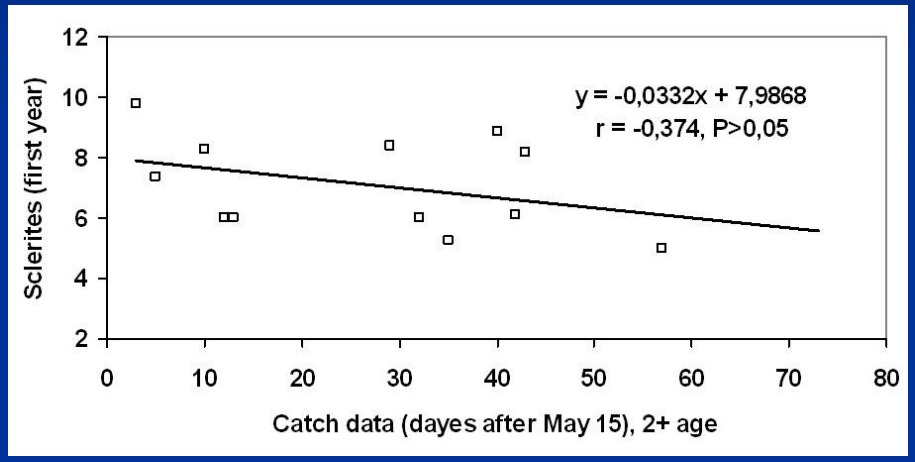
Correlation between the date of catch and averaged number of sclerites within zone of growth at scale of one-year-old coho salmon



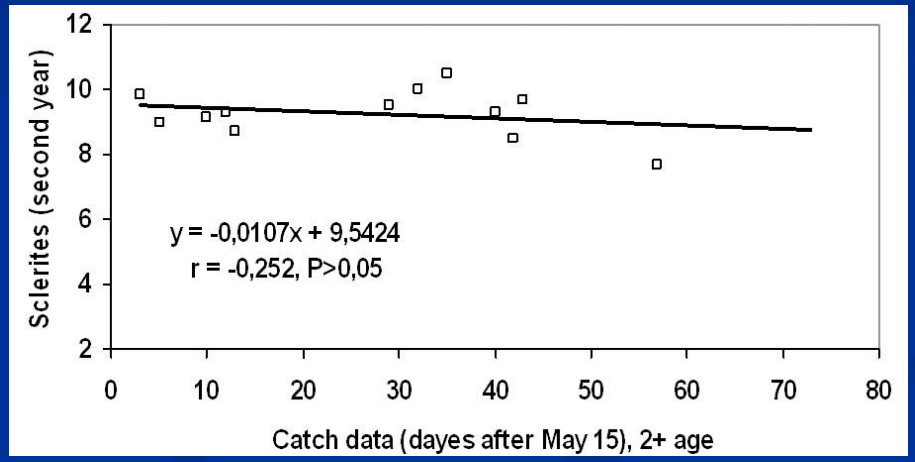
15 May June July August Sept. October

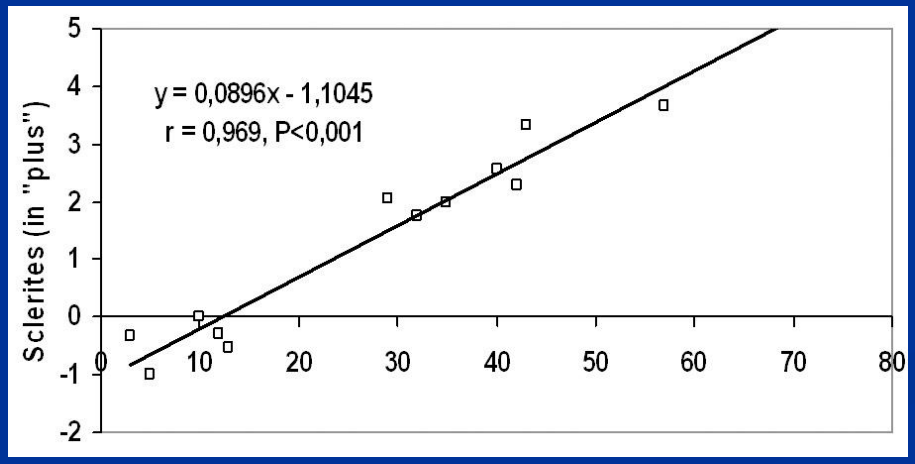
Correlation between the date of catch and averaged number of sclerites within zone of growth at scale

of two-years-old (2+) coho salmon in the first year of freshwater growth



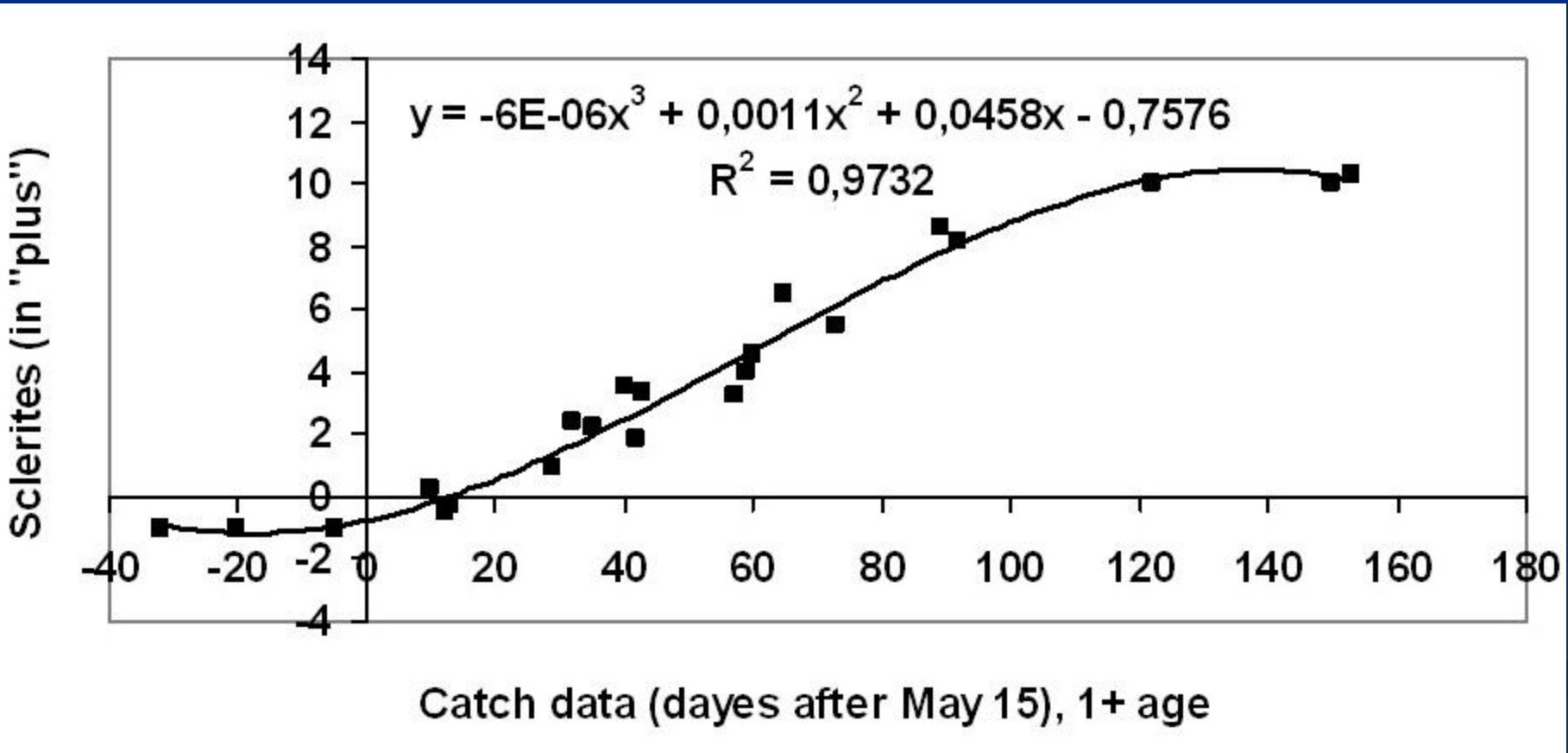
of two-years-old (2+) coho salmon in the second year of freshwater growth



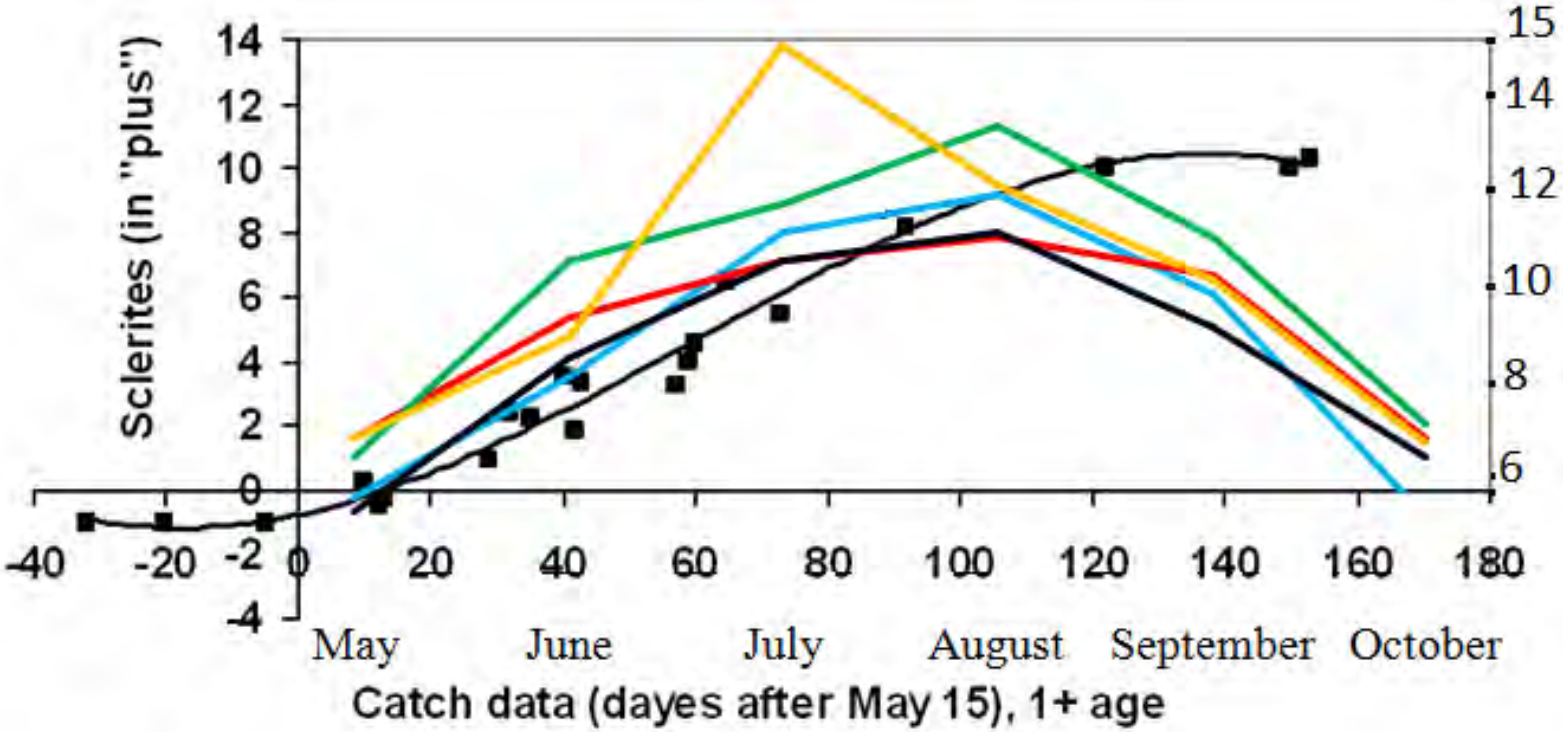


of two-years-old (2+) coho salmon in the year of downstream migration

Correlation between the date of catch and the averaged number of sclerites "in plus" at scale of coho salmon



Comparison of seasonal growth of coho salmon and seasonal changes of water temperature in lower part of Bolshaya river



Summary

- Seasonal revival of the growth and forming the annual ring in juvenile coho salmon in the lower part of the river generally takes place in the third decade of May: in its' early phase in one-year-old fish and in the late phase in two-years-old fish. The seasonal growth rate demonstrates significant slowing along the water temperature decrease in the last half of September down to complete stagnation since October.

- One sclerites on the scale of juvenile coho salmon of different ages is forming for a similar time period: 12.9 days (June - the second half of September) for underyearlings, 10,1 days (June - the second half of September) for one-year-old individuals and 11,2 days (June – July) for two-years-old individuals.

Summary

- The additional zones of adjacent sclerites is forming on scale of juvenile coho salmon in the lower part of the Bolshaya River in the course of feeding and growth in July-August (underyearlings) or in the last half of September-first half of October (underyearlings and one-year-old fish).

- Juvenile coho salmon in the Bolshaya River demonstrate scheme and timings of reviving the growth, which is regular for all Pacific salmon species with long freshwater period (sockeye, Chinook and masu salmon) in similar types of watersheds and sites in Kamchatka.

Thank you for your kindly attention