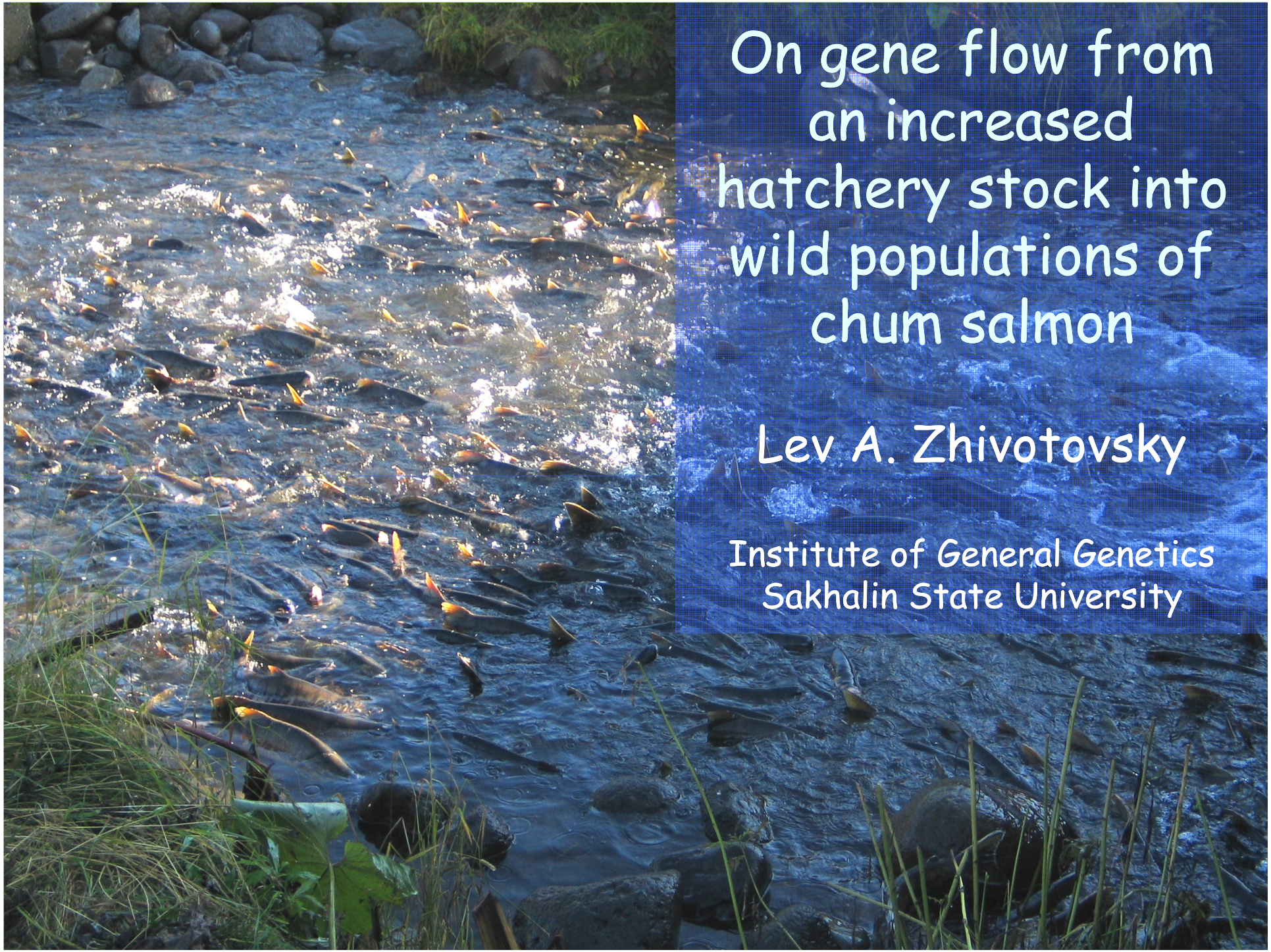

On gene flow from an increased hatchery stock into wild populations of chum salmon

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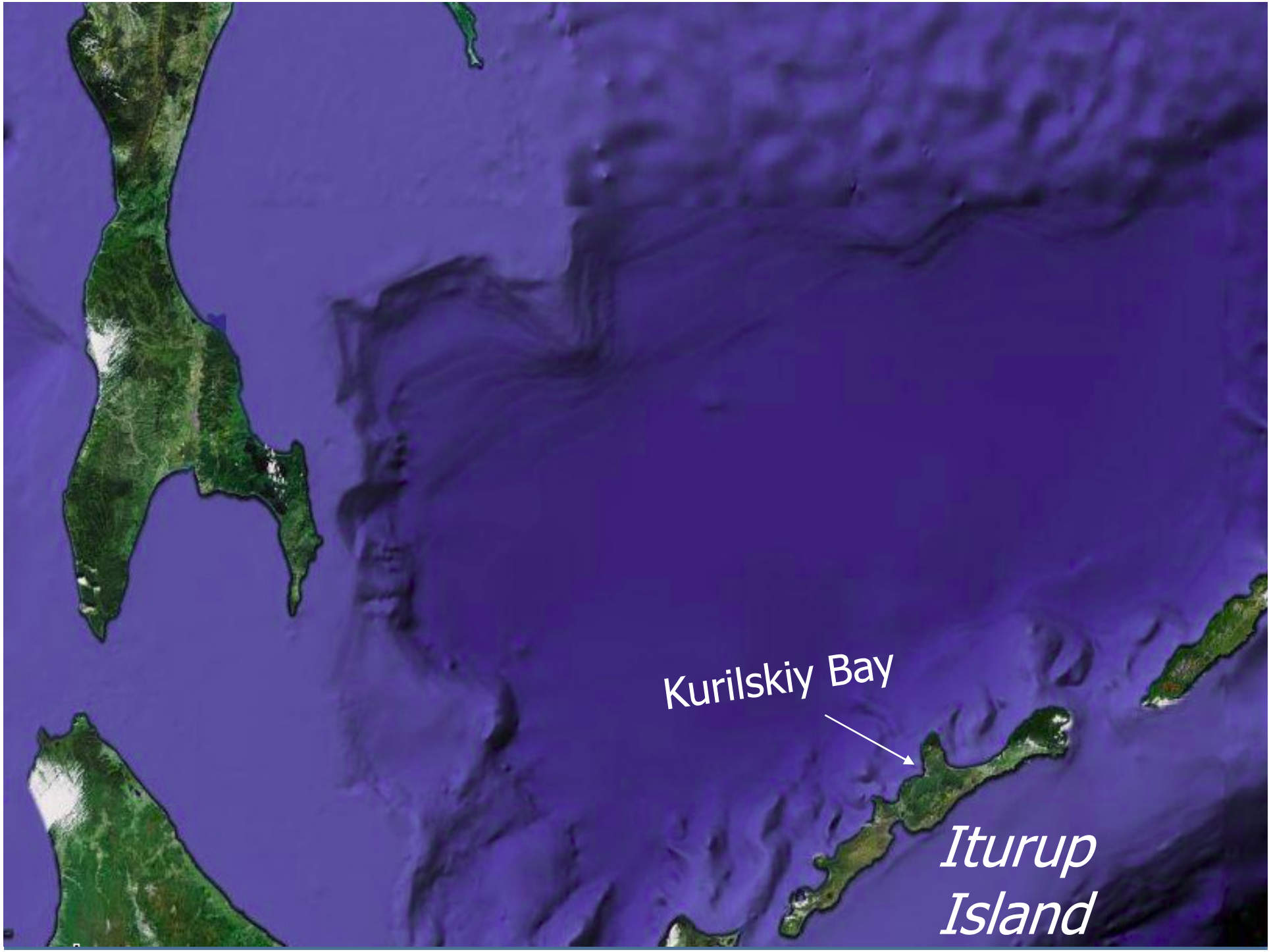
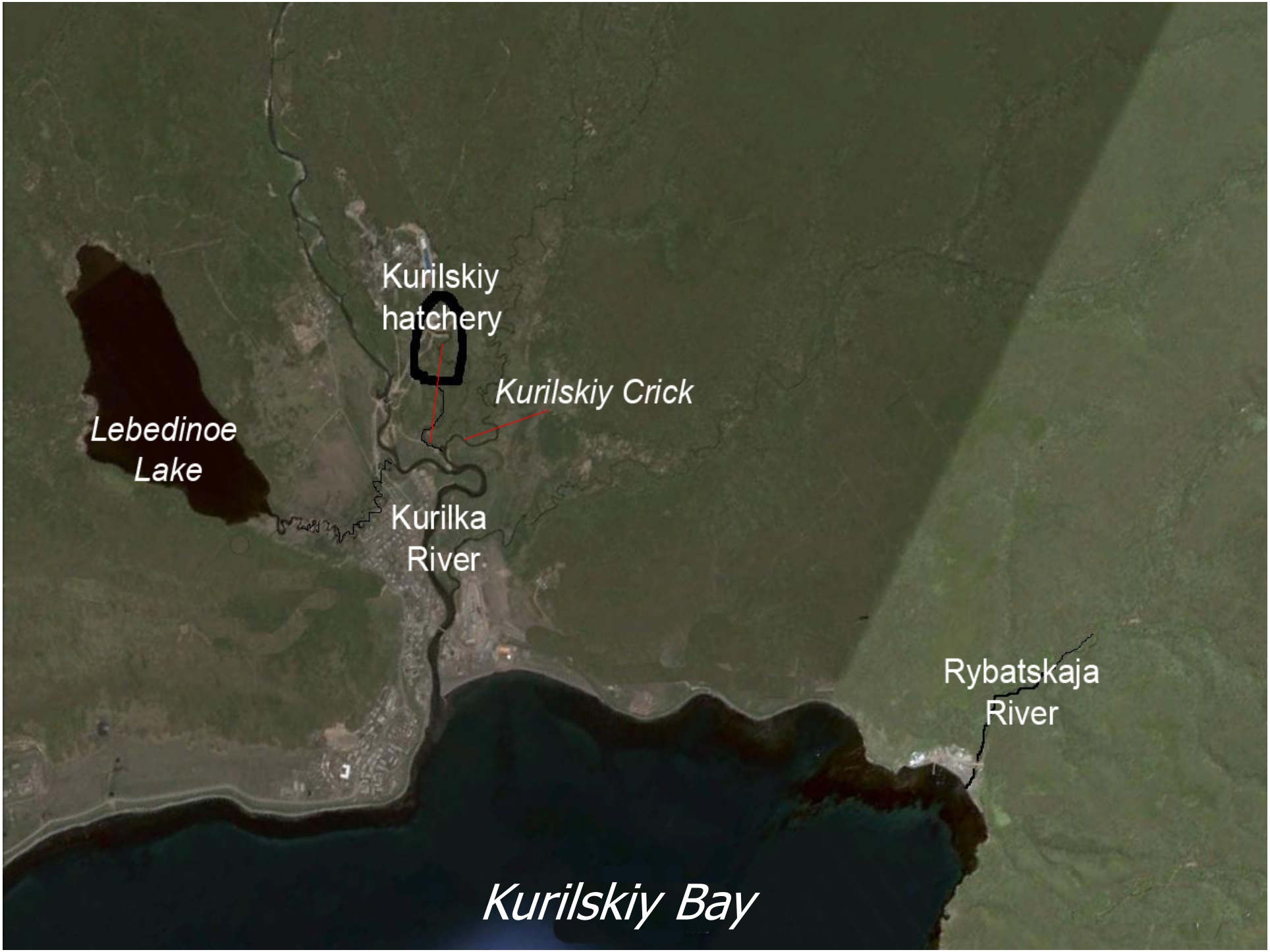
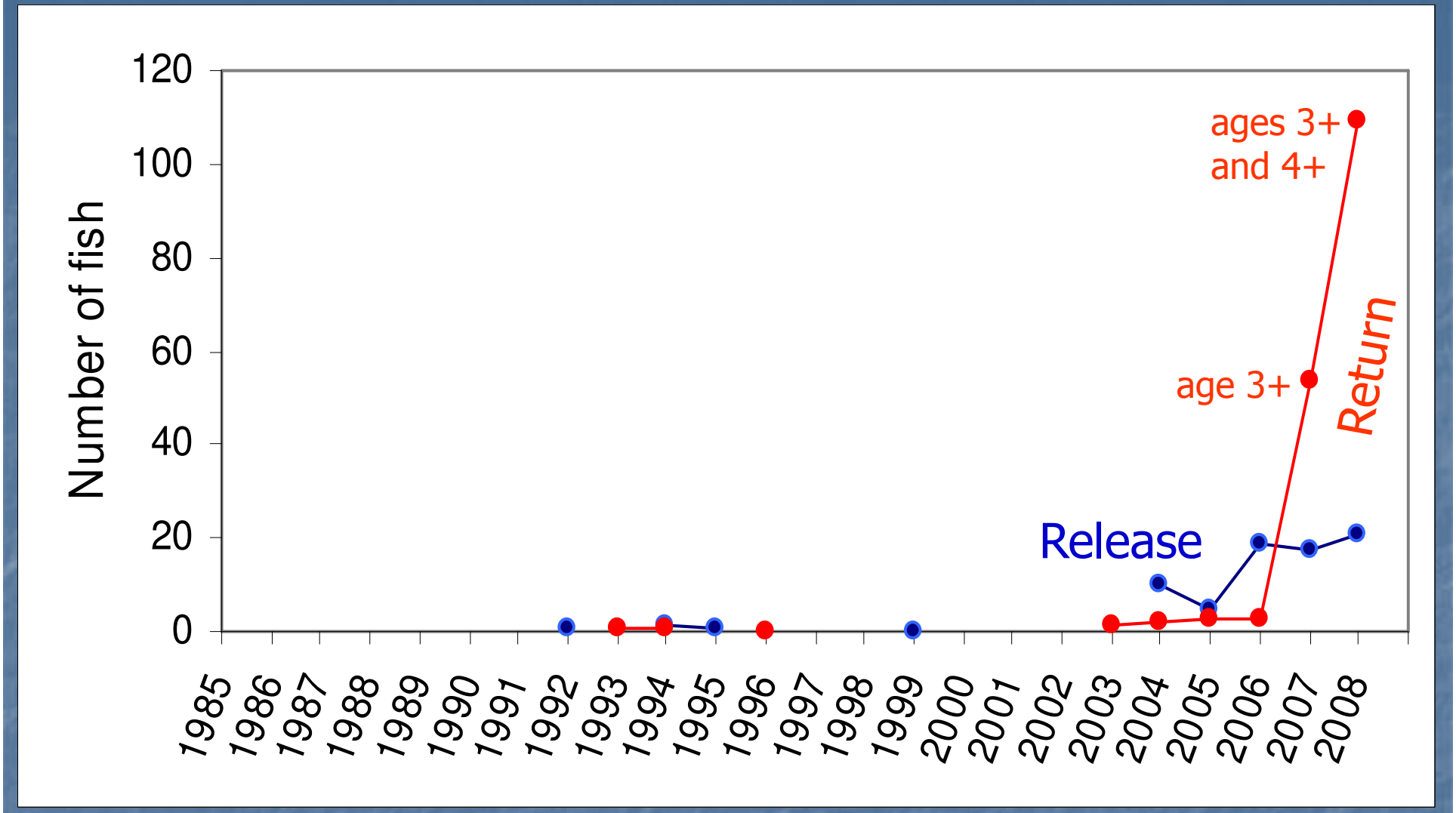

Kurilskiy Bay
Iturup Island


Kurilskiy
hatchery
Kurilskiy Crick
Lebedinoe
Lake
Kurilka
River
Rybatskaja
River
Kurilskiy Bay



Abundance of chum salmon released from the Kurilskiy hatchery (blue, in 10^6) and returned back in the Kurilskiy Bay (red, in 10^4)

MS-locus	Allele structure	Size range	# alleles
Ssa197			
Ssa20.19			
Ogo2			
Oki1-1			
Oki1-2			
Oke3			
Oke11			
One103			
One109			
Ots3	$(TC)_n$	74-108	19

We have studied

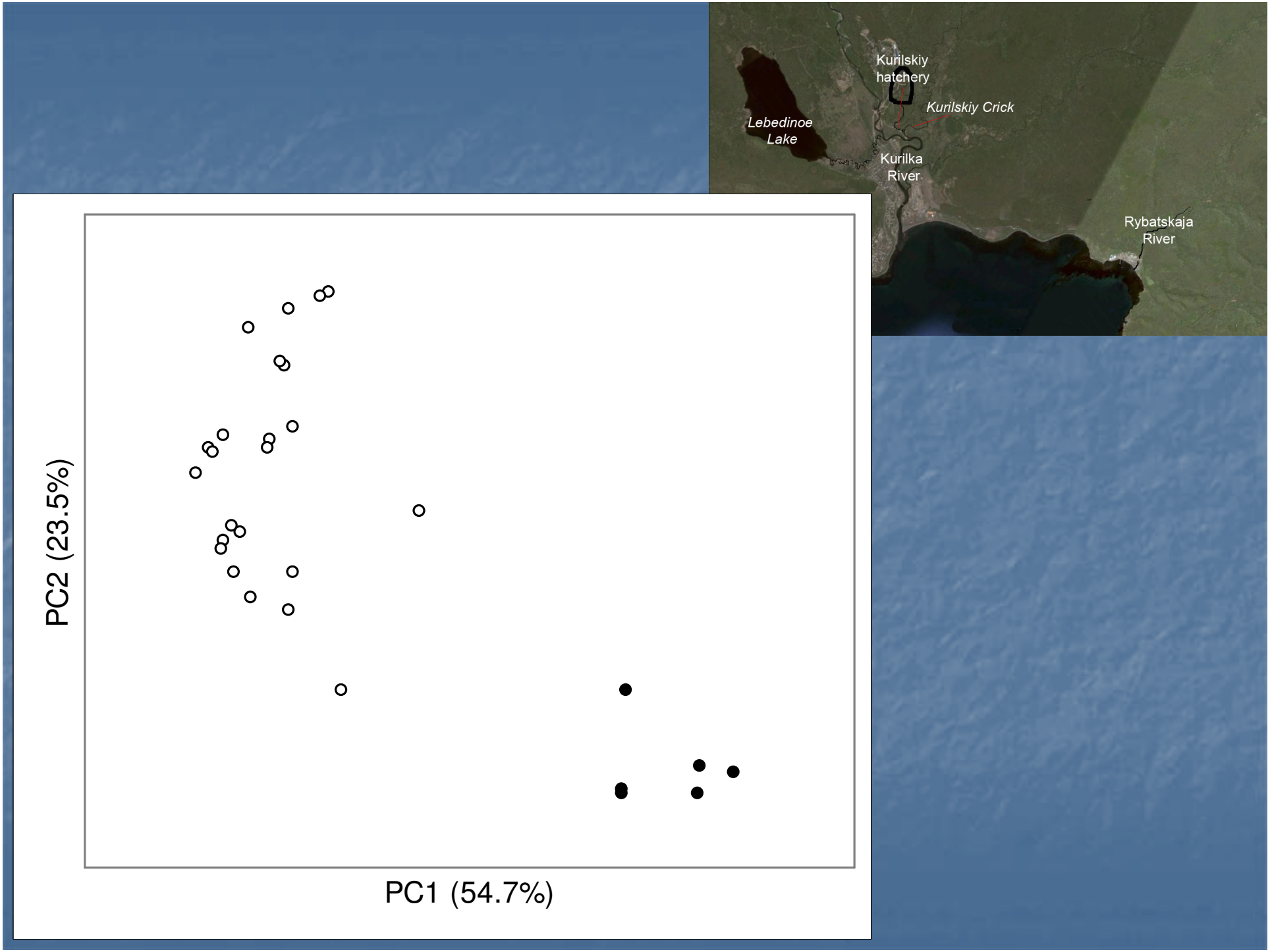
37 samples from the

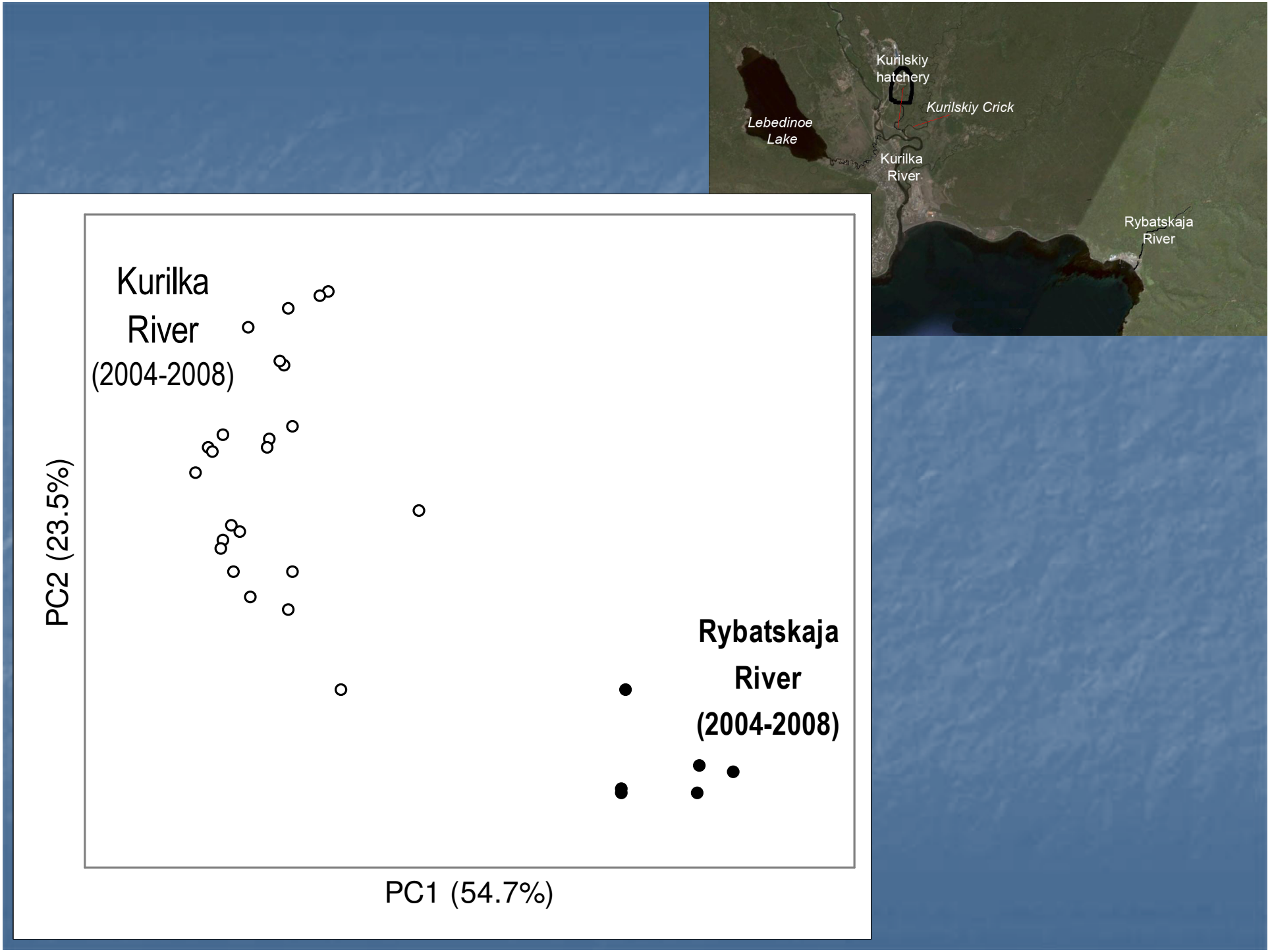
Kurilskiy River system and Rybatskaya River

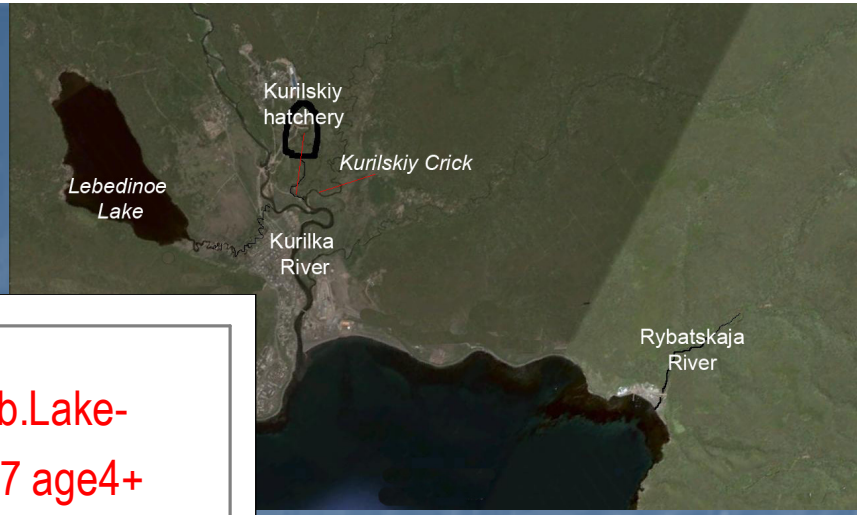
of ~50 fish each at ten DNA (microsatellite) markers

in 2004-2008

Olsen J.B. and Seeb J.E. 1998. Trans. Am. Fish. Soc. 127: 535.
Sanchez et al. 1996. Heredity 77: 423-432.
Olsen J.B. et al. 1998. Molecular Ecology 7: 1087-1089.
Smith C.T. et al. 1998. Molecular Ecology 7: 1614-1616.
Buchholz W.G. et al. 2001. Animal Genetics 32: 162-165.
Olsen J.B. et al. 2000. Molecular Ecology 9: 2185-2187.
Small M.P. et al. 1998. Molecular Ecology 7: 141-155.


Kurilskiy
hatchery
Kurilskiy Crick
Lebedinoe
Lake
Kurilka
River
Rybatskaja
River
PC2 (23.5%)
PC1 (54.7%)


Kurilskiy hatchery
Kurilskiy Crick
Lebedinoe Lake
Kurilka River
Rybatskaja River
Kurilka River (2004-2008)
Rybatskaja River (2004-2008)
PC2 (23.5%)
PC1 (54.7%)



Kurilka River (2004-2008)

Leb.Lake-2007 age4+

Kur.Crick 2007-2008

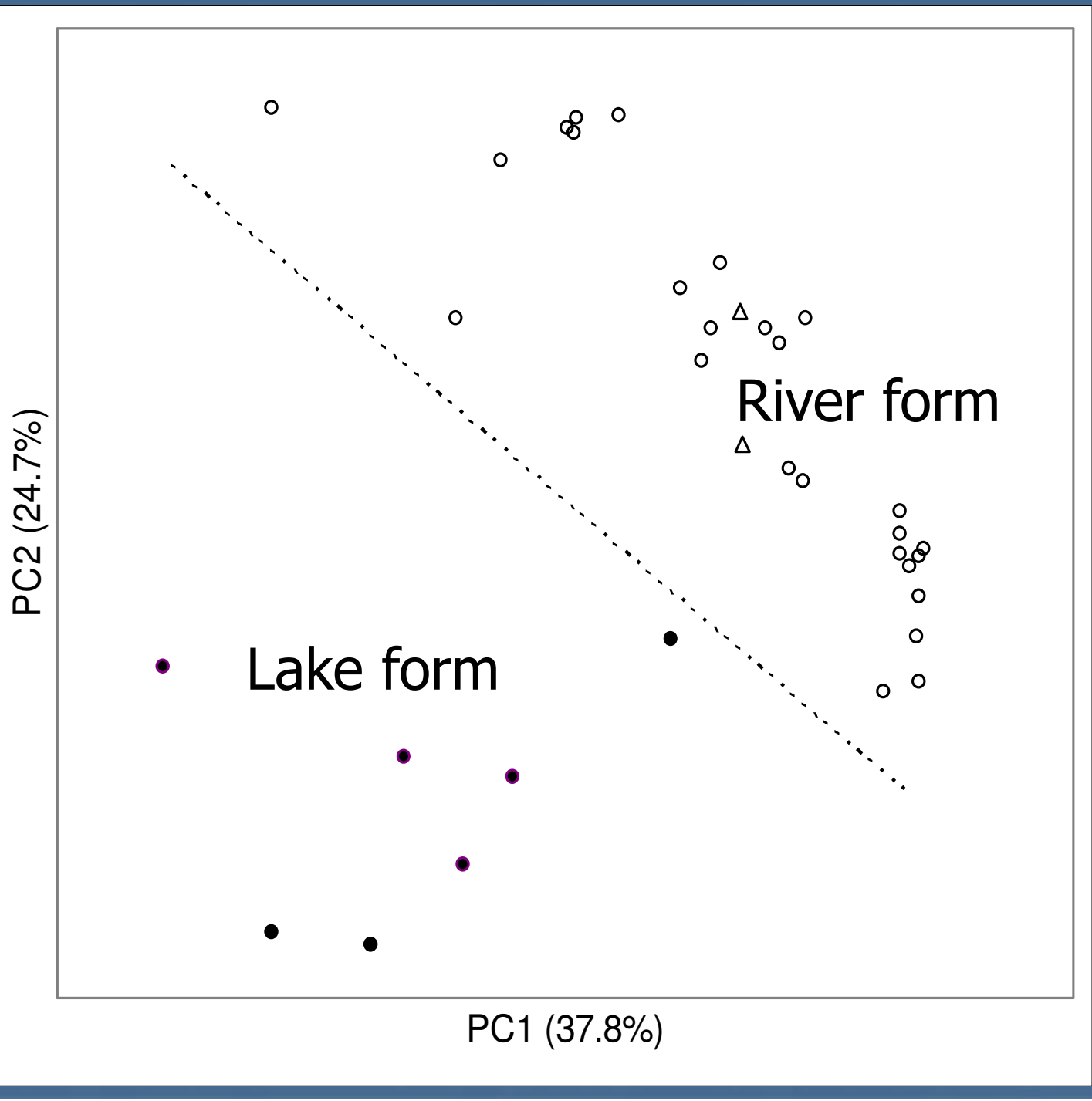
Leb.Lake-2008

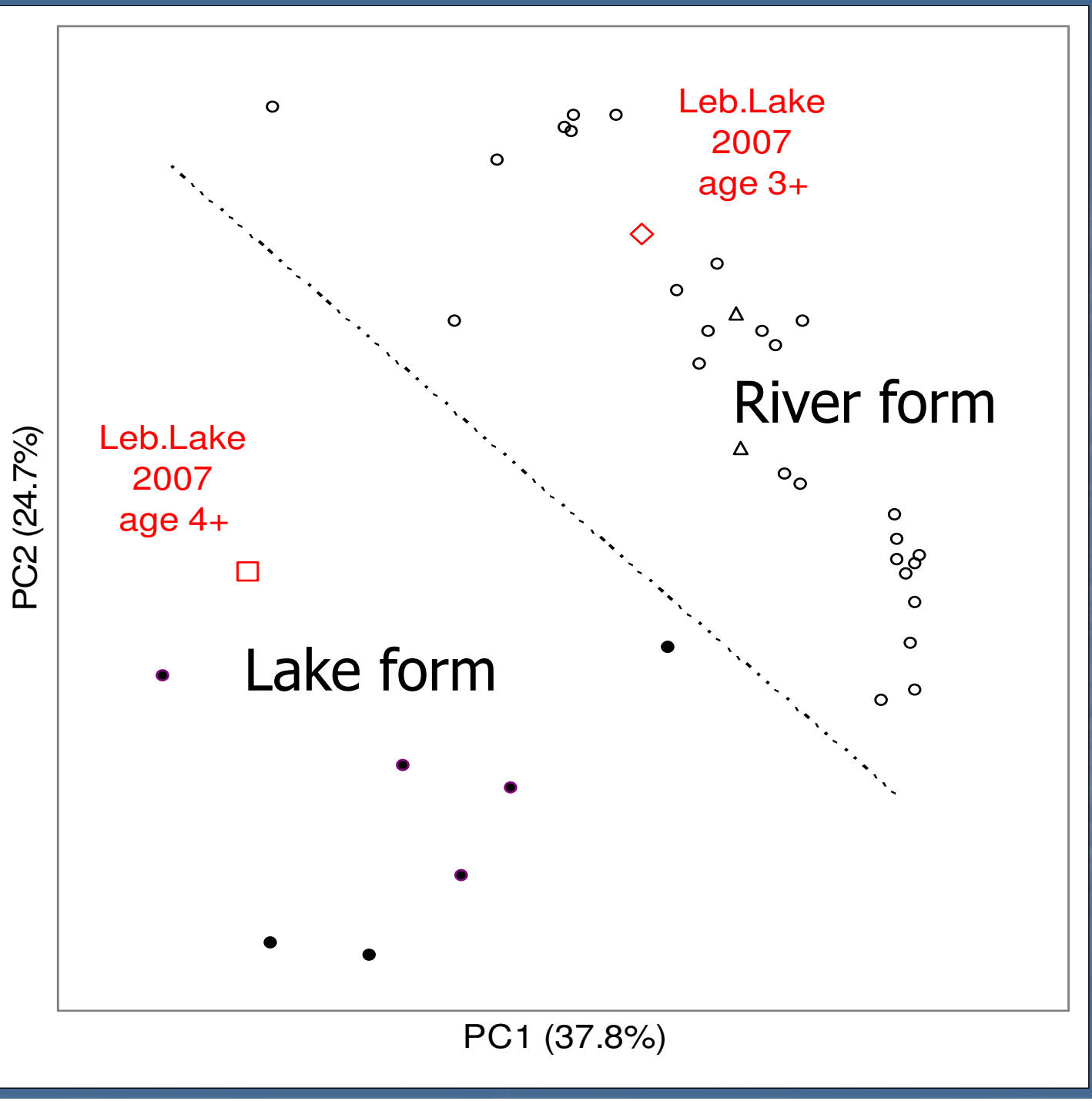
Leb.Lake-2007 age3+

Rybatskaja River (2004-2008)

PC2 (23.5%)

PC1 (54.7%)


River form
Lake form
PC2 (24.7%)
PC1 (37.8%)


Leb.Lake
2007
age 3+
River form
Leb.Lake
2007
age 4+
Lake form
PC2 (24.7%)
PC1 (37.8%)

Conclusion

- Gene flow from increased the Kurilskiy hatchery stock of chum salmon seems to be distinguishable within the Kurilka River system, but does not visibly influence the neighboring Rybatskaya River stock – probably due to low rate of gene flow.
- Nevertheless, even small gene flow from a large stock may change the genetics in a few generations. Thus, some measures should be taken in advance in order to prevent the wild chum salmon population of the Rybatskaya River in the future.