What is a conservation unit for Sakhalin taimen (*Parahucho perryi*)?: Genetics & Geography

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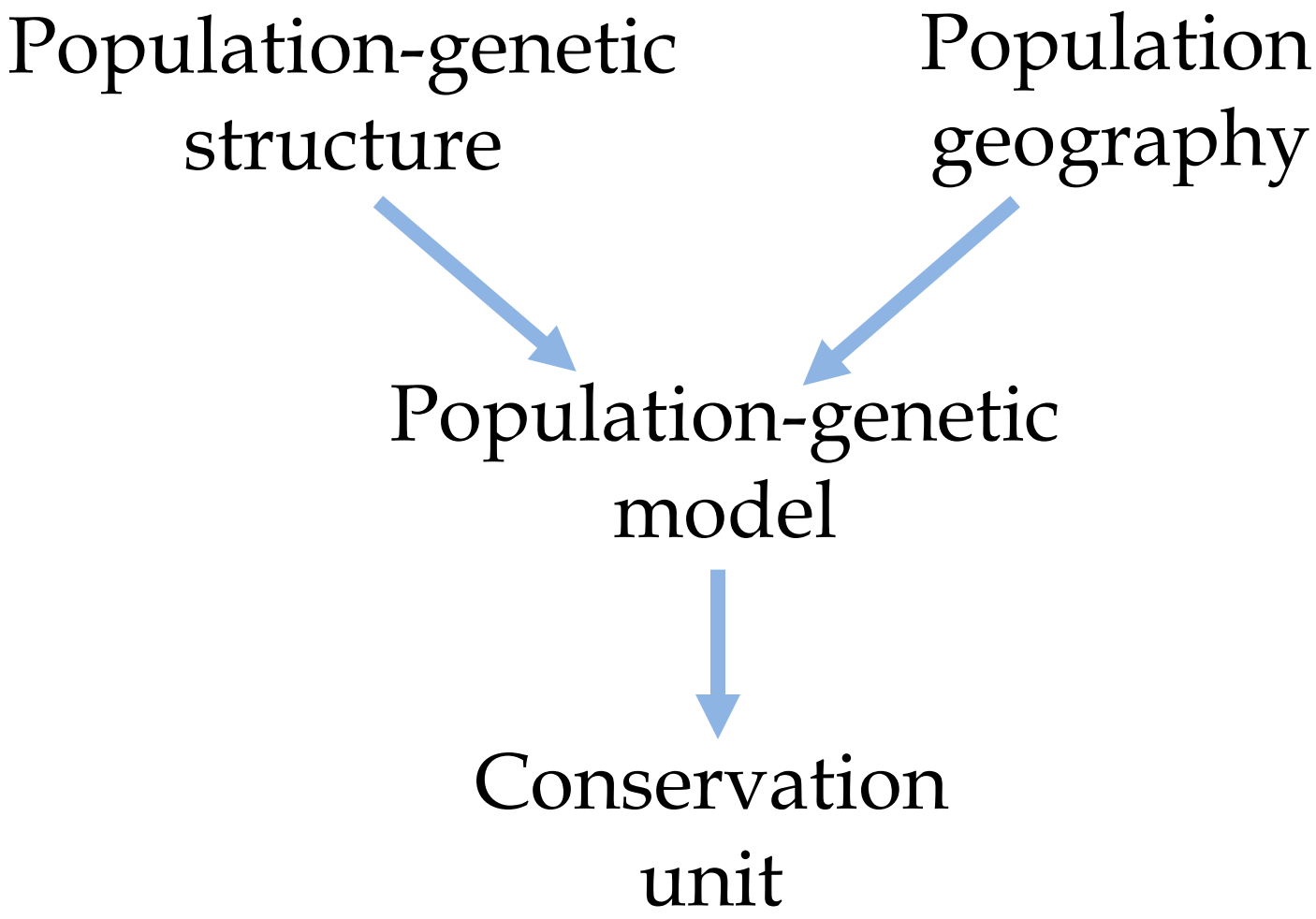
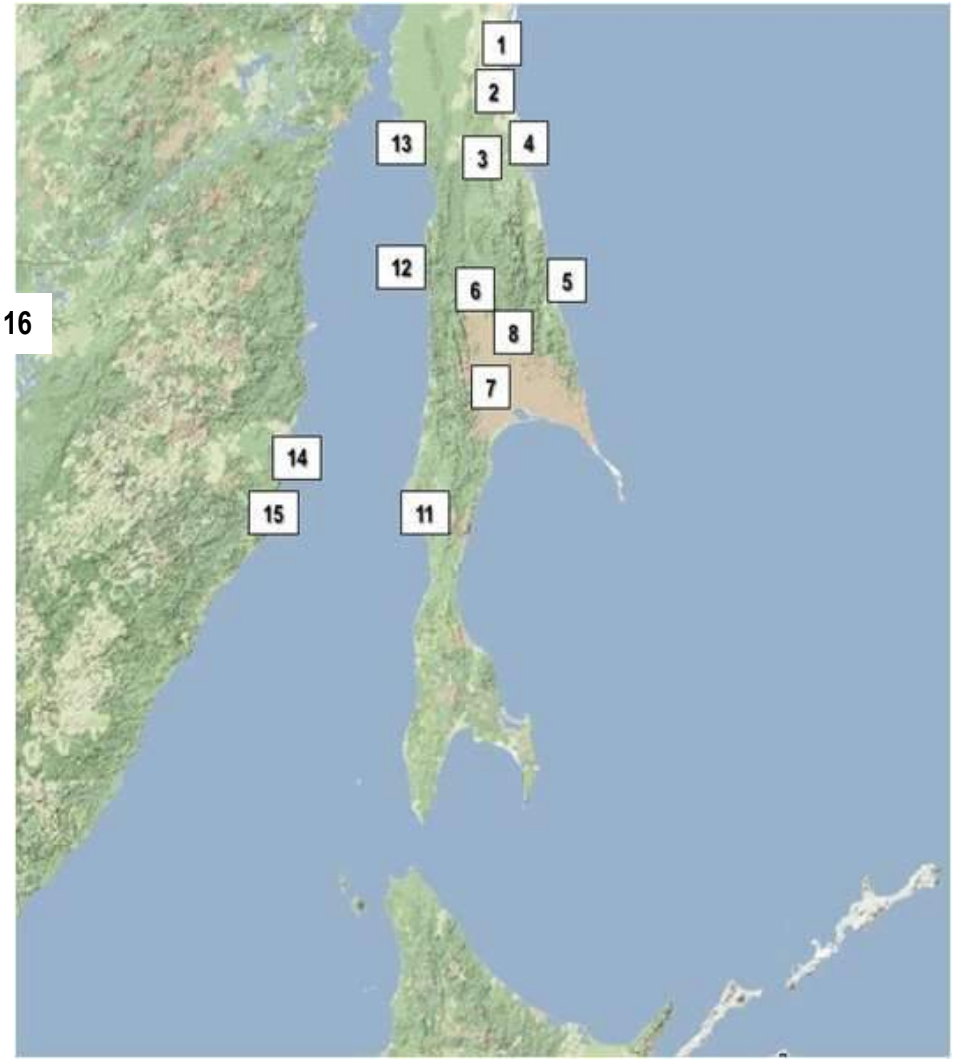
The habitat of Sakhalin taimen

Fukushima 2008


Population-genetic structure
Population geography
Population-genetic model
Conservation unit

18 population samples from 13 locales (287 individuals)



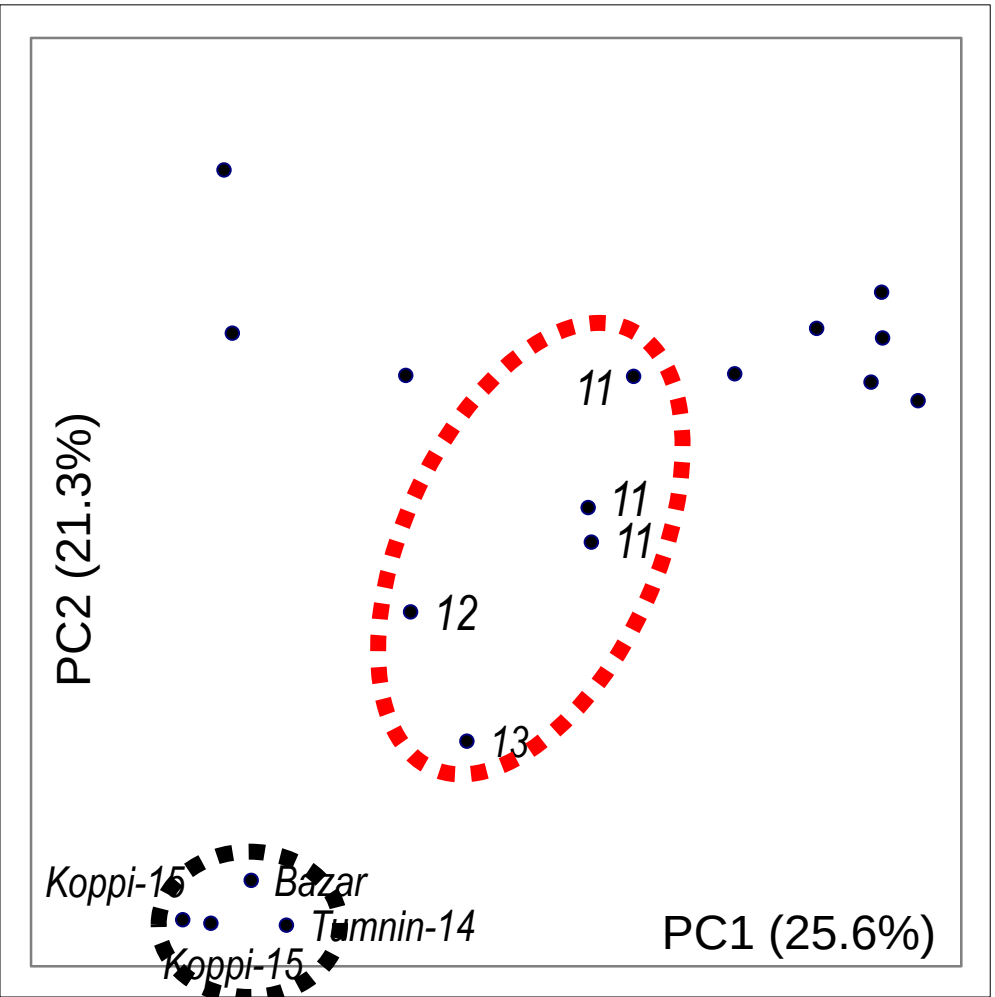
1-Val, 2-Dagi, 3-Tym,
4-Nabil [2], 5-Langeri,
6-Onorka, 7-Elnaja,
8-Poronai,
11-Ainskoe Lake [3],
12-Agnevo [2], 13-Viakhtu,
14-Tumnin, 15-Koppi [2],
16-Khabarovsk Bazar.

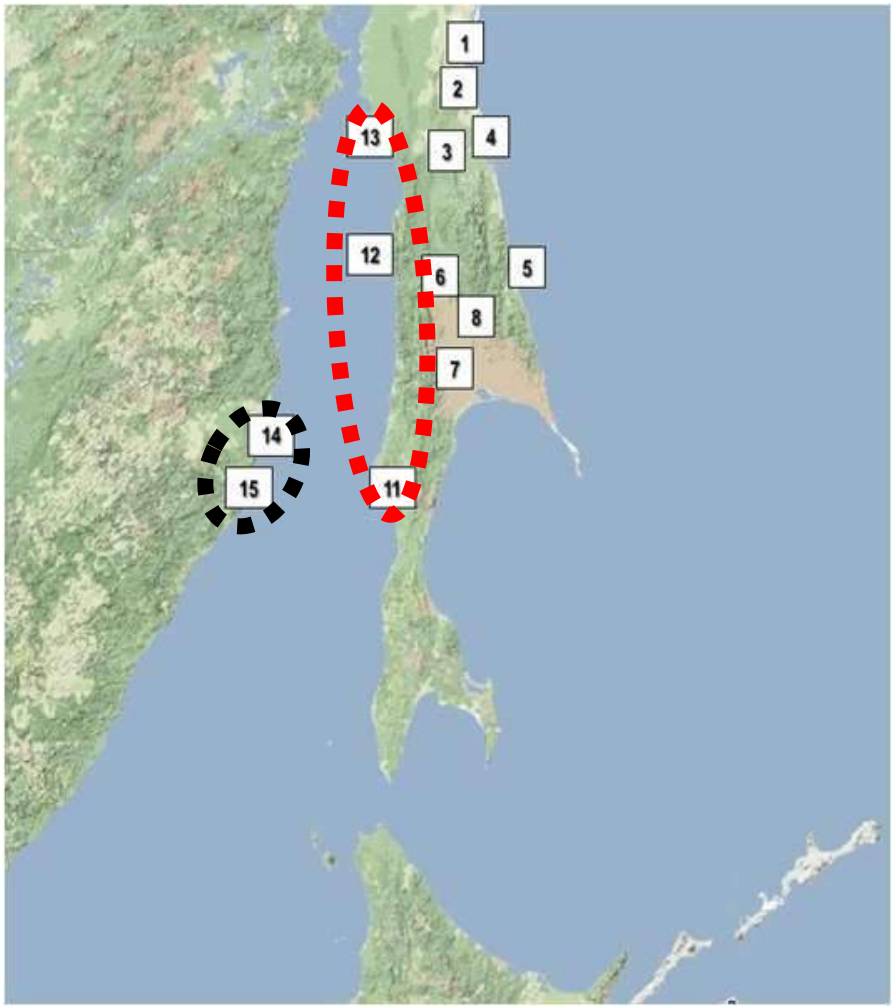
Tissue: fin, scale

Microsatellite DNA markers

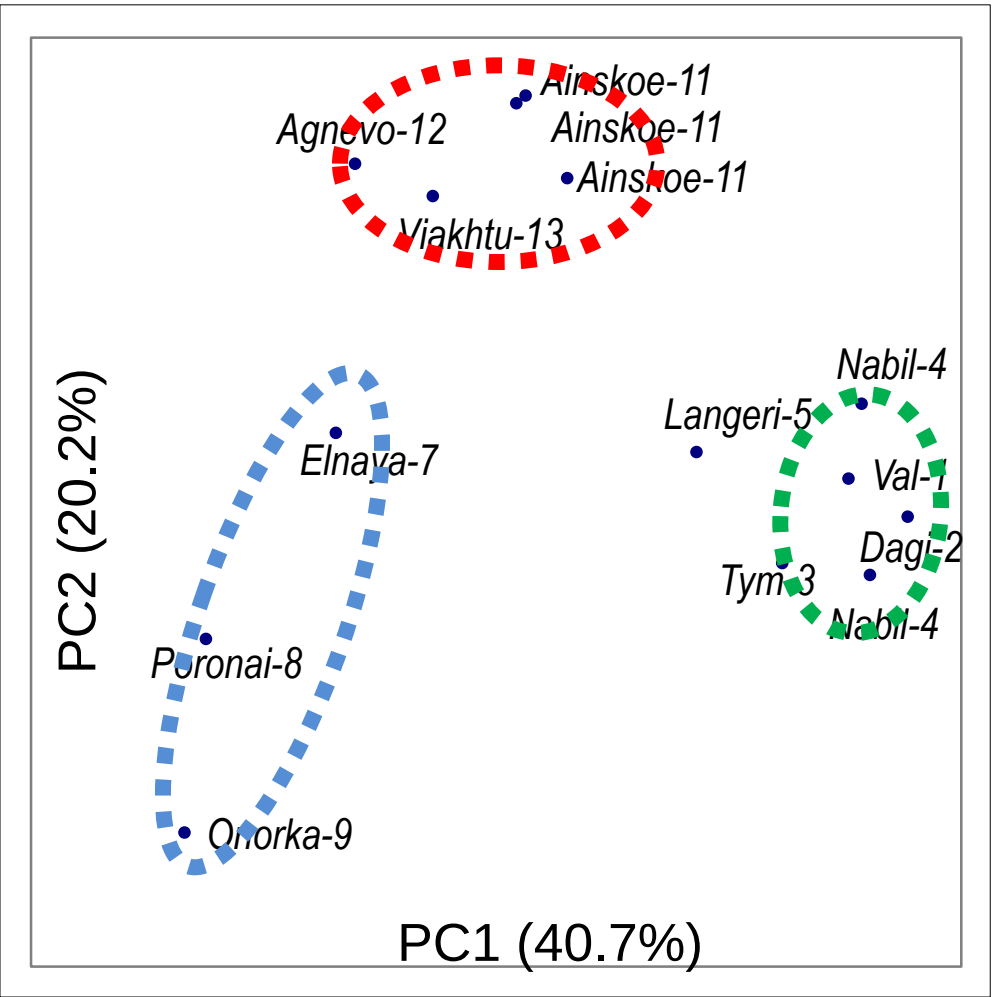
- *Hper4, Hper5, Hper6, Hper8A, Hper15, Hper16, Hper25* (from *Hatakejama et al. 2005*, with modified primers).
- *Pper1, Pper2, Pper3 , Pper5, Pper6, Pper7, Pper8, Pper11* (from *Kopun et al. 2009*, with modified primers).
- *Smm5, Smm17, Omy301, Ots102, Oki10, Omm1037 , Bletri3, Bletet5* (*cross-species amplification*, with new primers – this study).

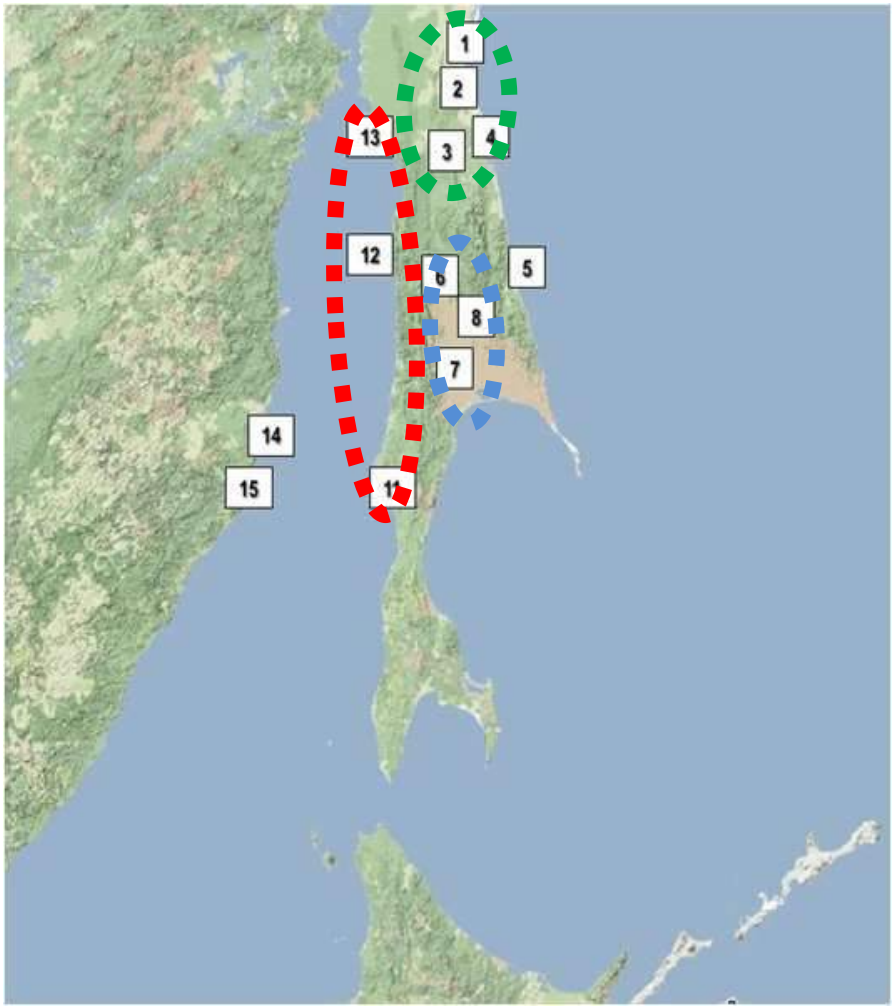
Genetics *vs* Geography



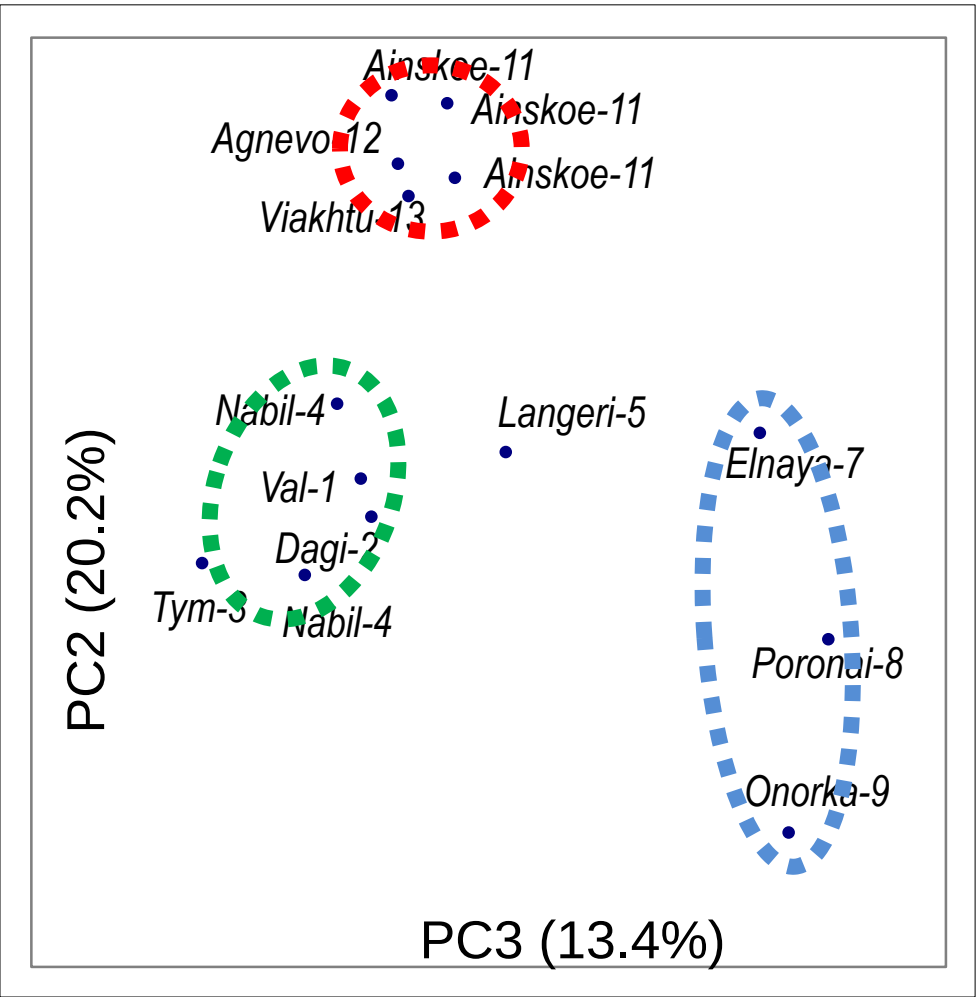


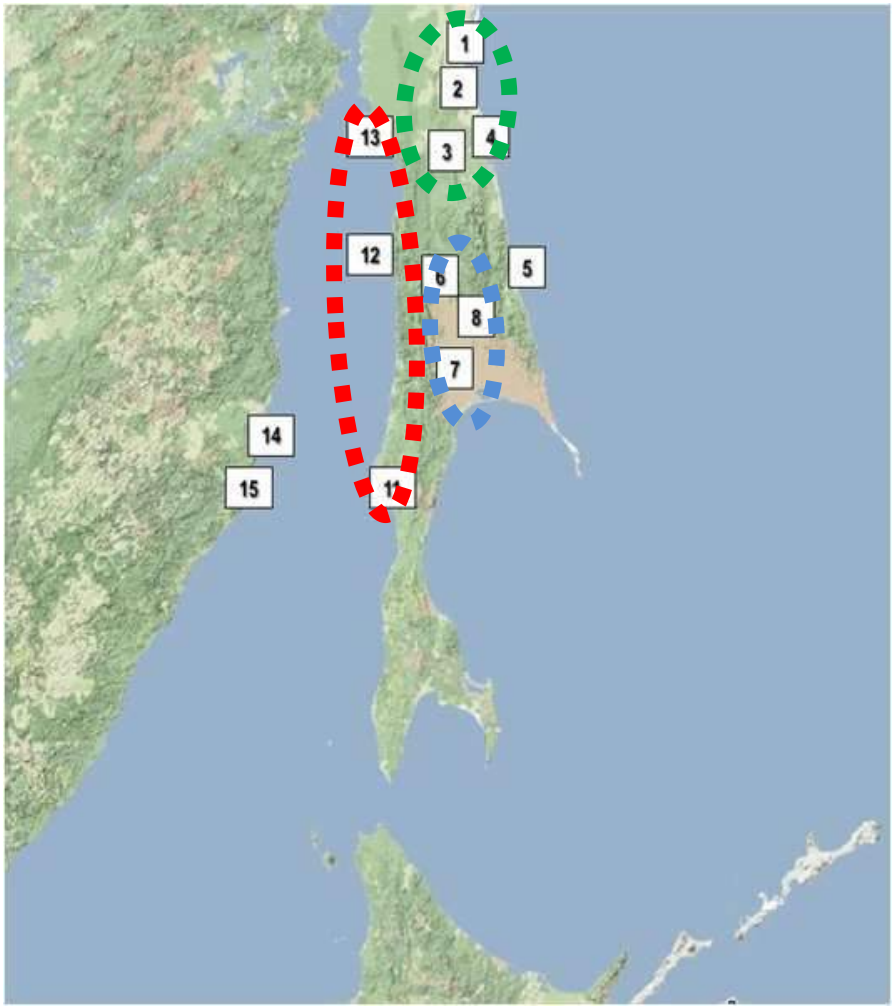
Genetics *vs* Geography

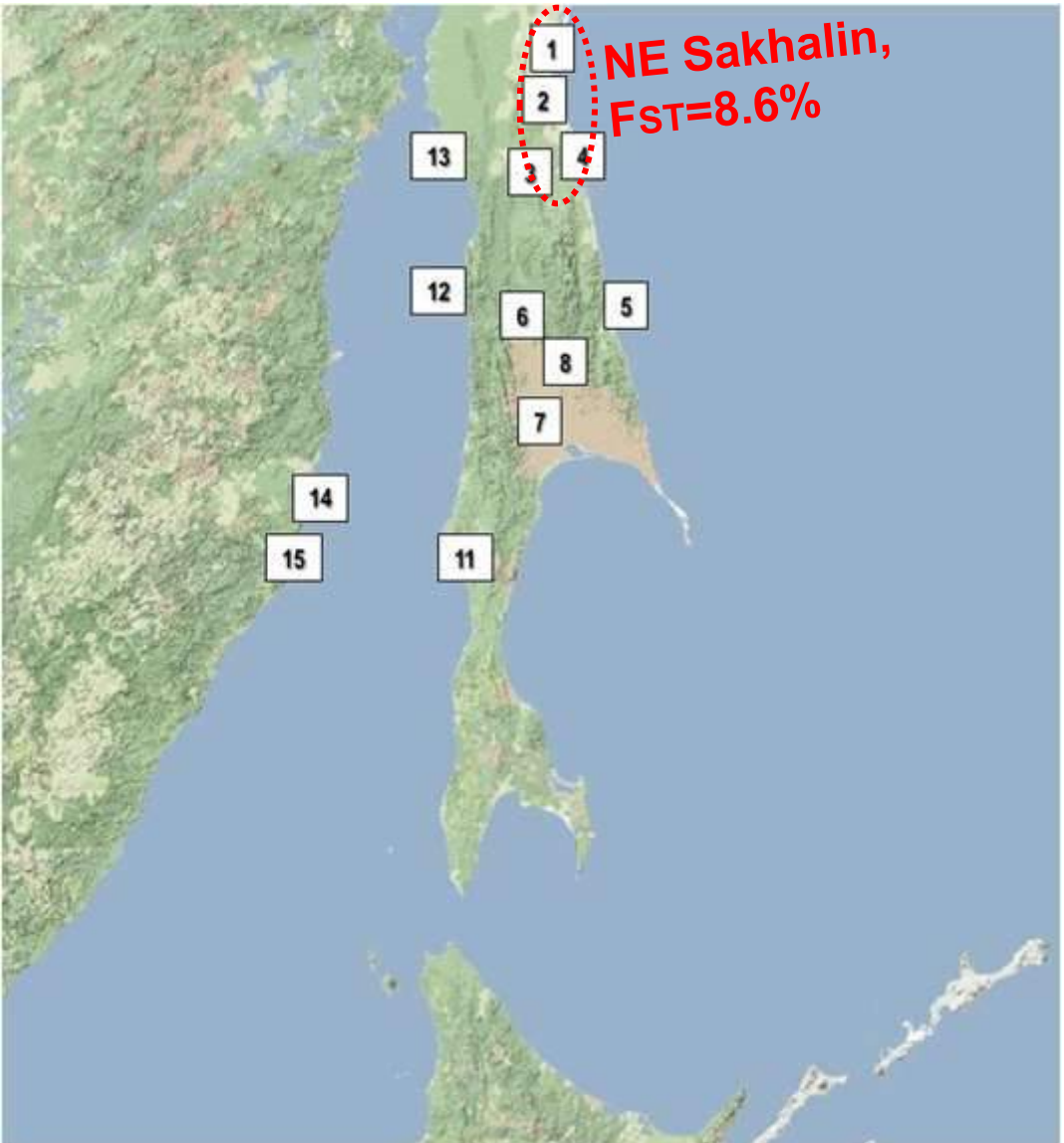




Genetics *vs* Geography

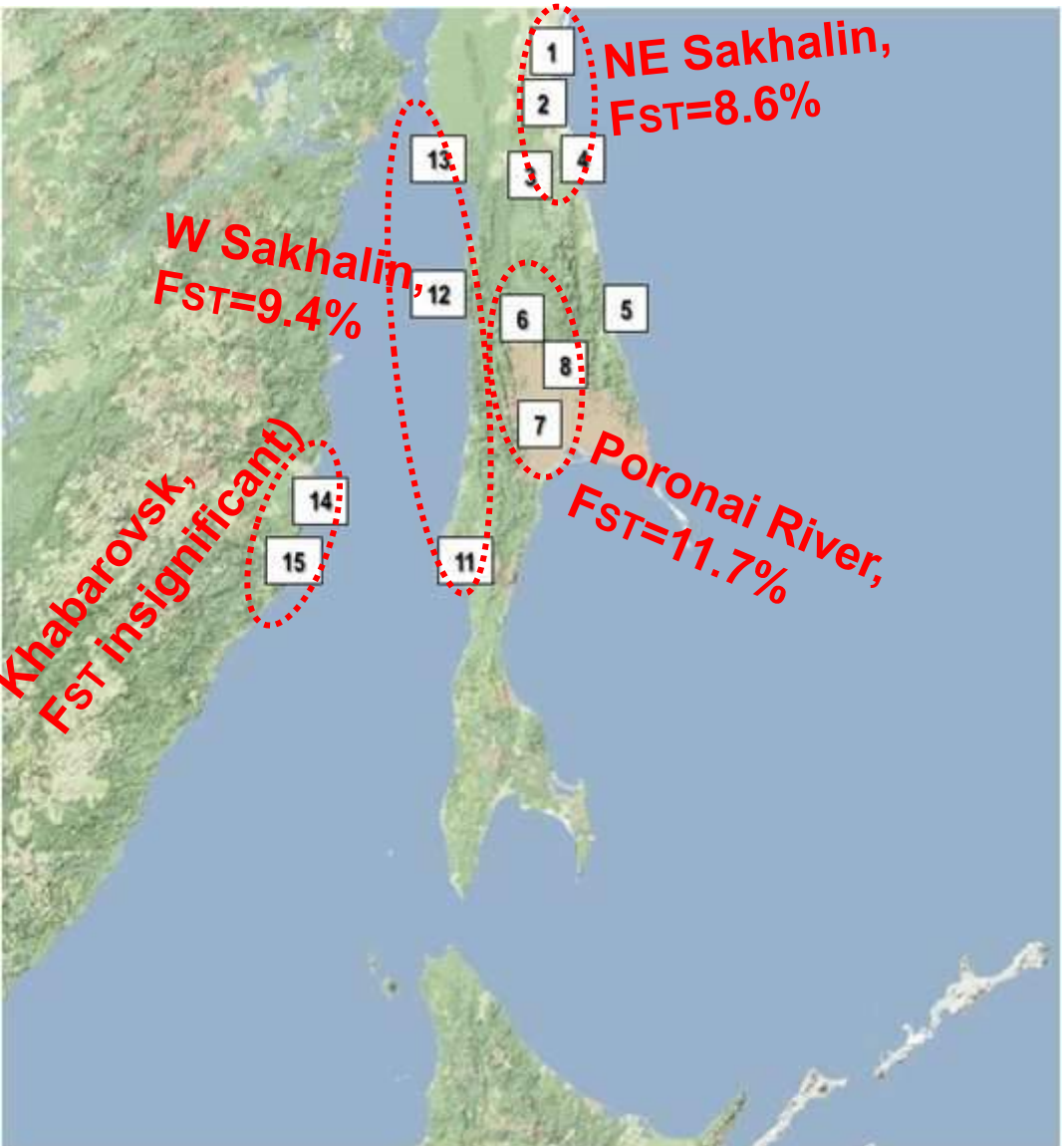






1-Val River
2-Dagi River
3-Tym River
4-Nabil River

Genetic/Geographic Group of Populations (GGGP)



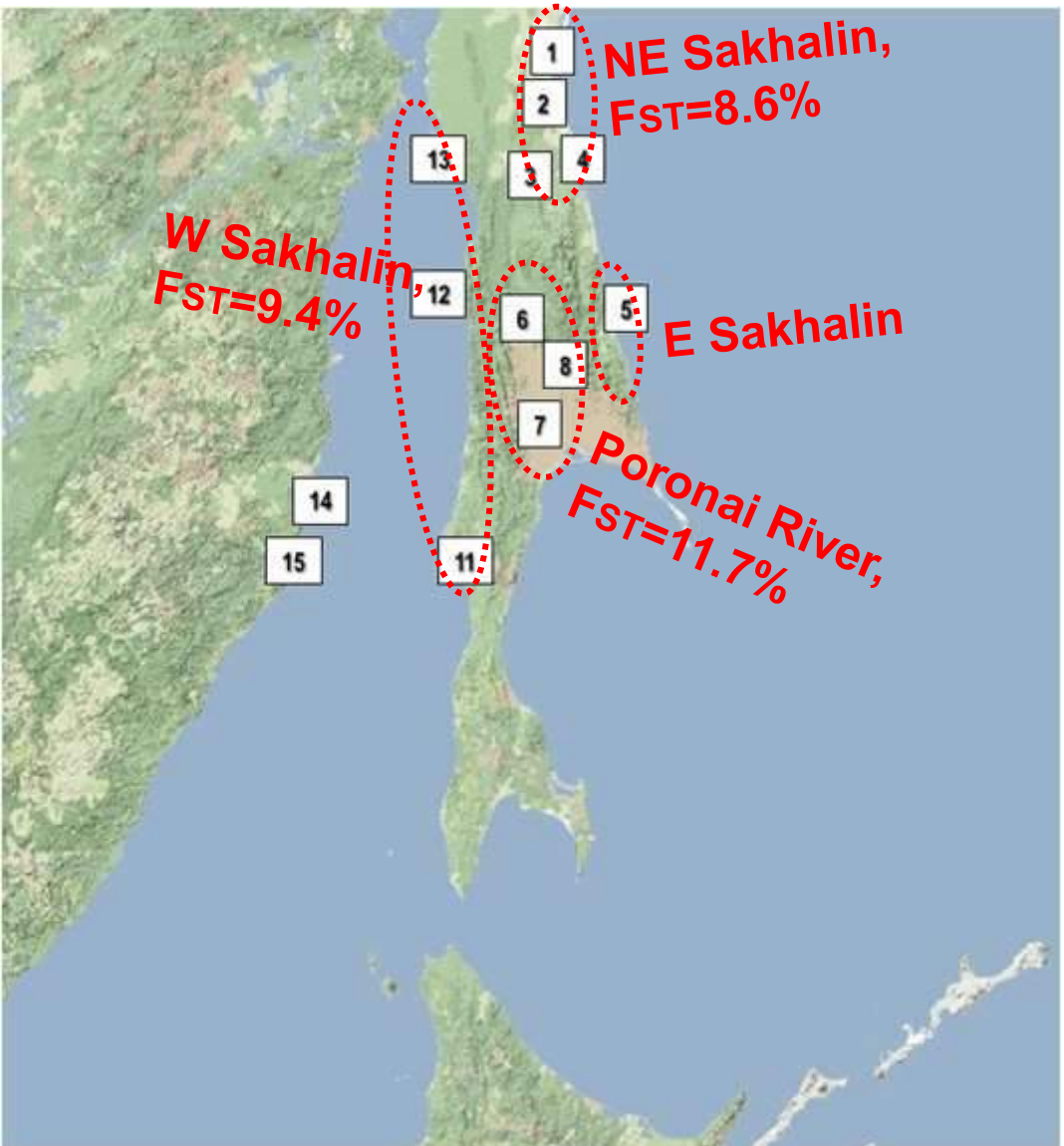
1-Val, 2-Dagi, 3-Tym, 4-Nabil,

6-Onorka, 7-Elnaja, 8-Poronai,

11-Ainskoe Lake,
12-Agnevo, 13-Viakhtu,

14-Tumnin, 15-Koppi,

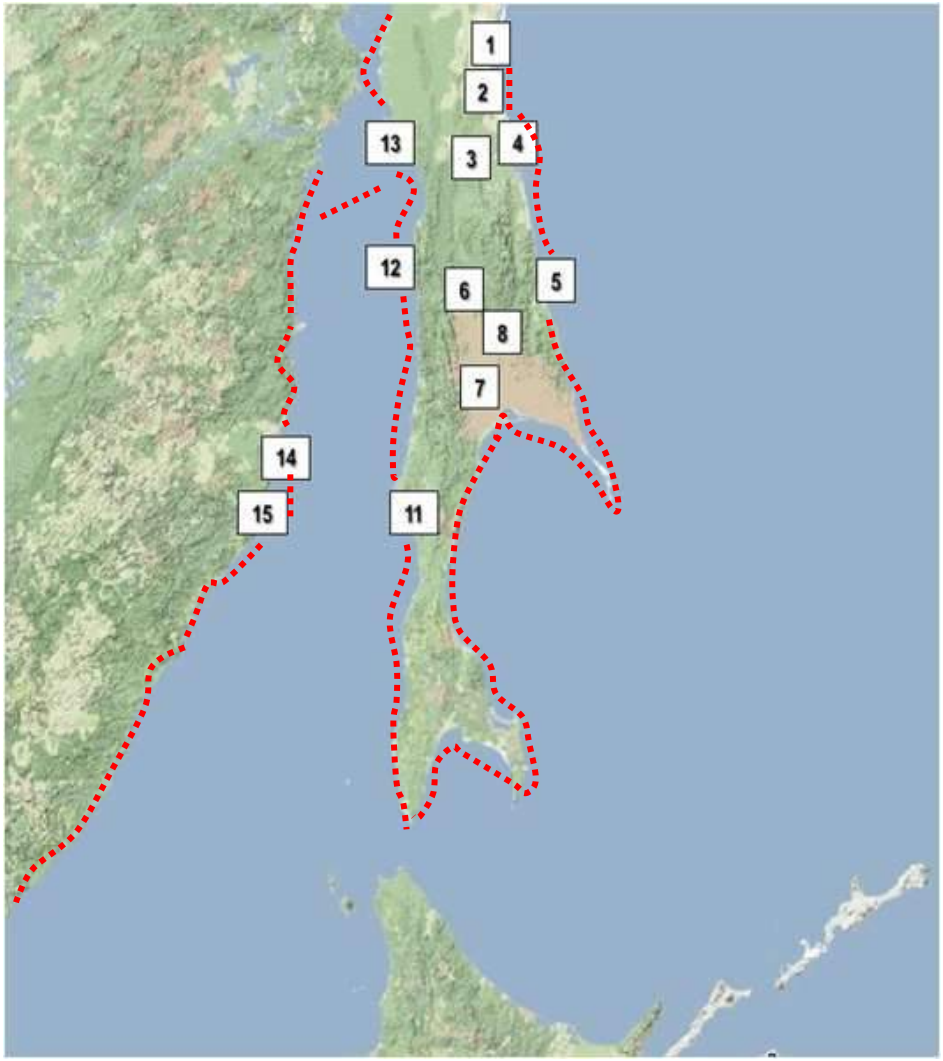
Genetic differentiation between taimen populations in northern Sakhalin Island



Fst between populations from the same GGGP ~ 10%

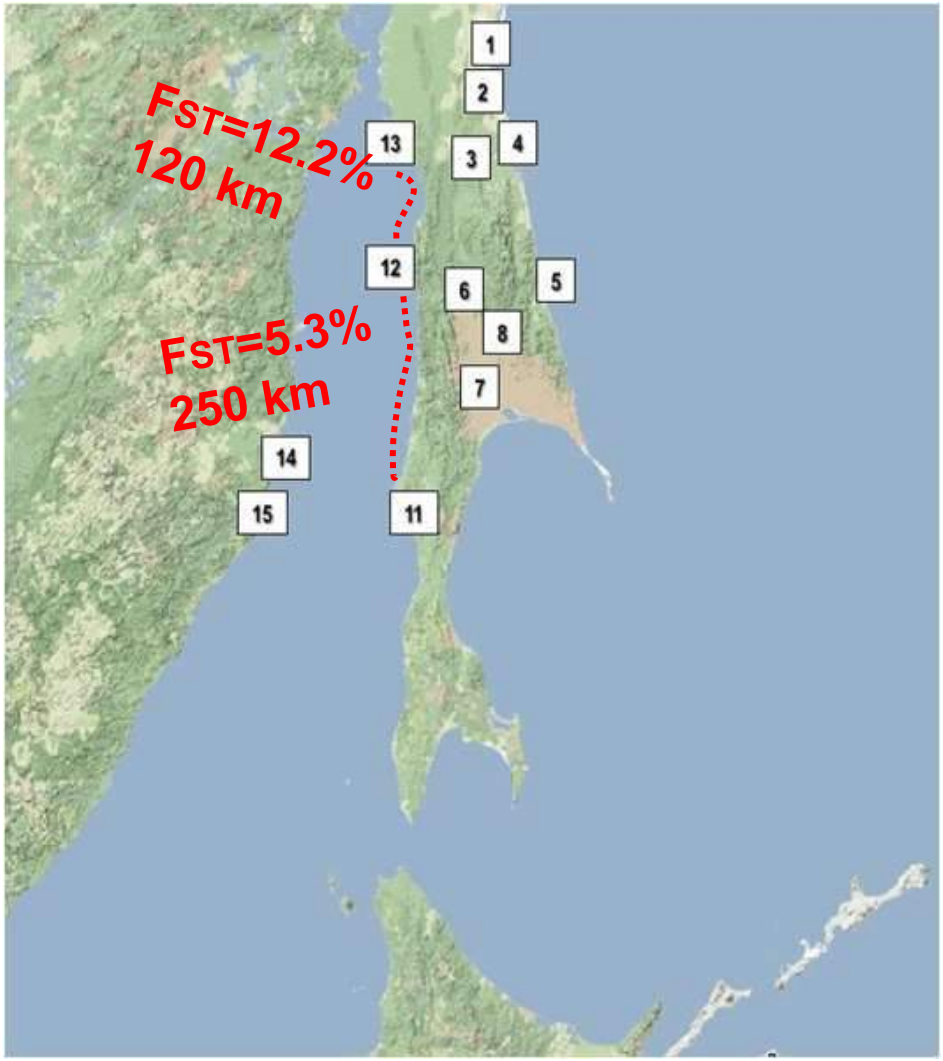
Fst between populations from different GGGPs ~ 15%

A kind of stepping-stone model



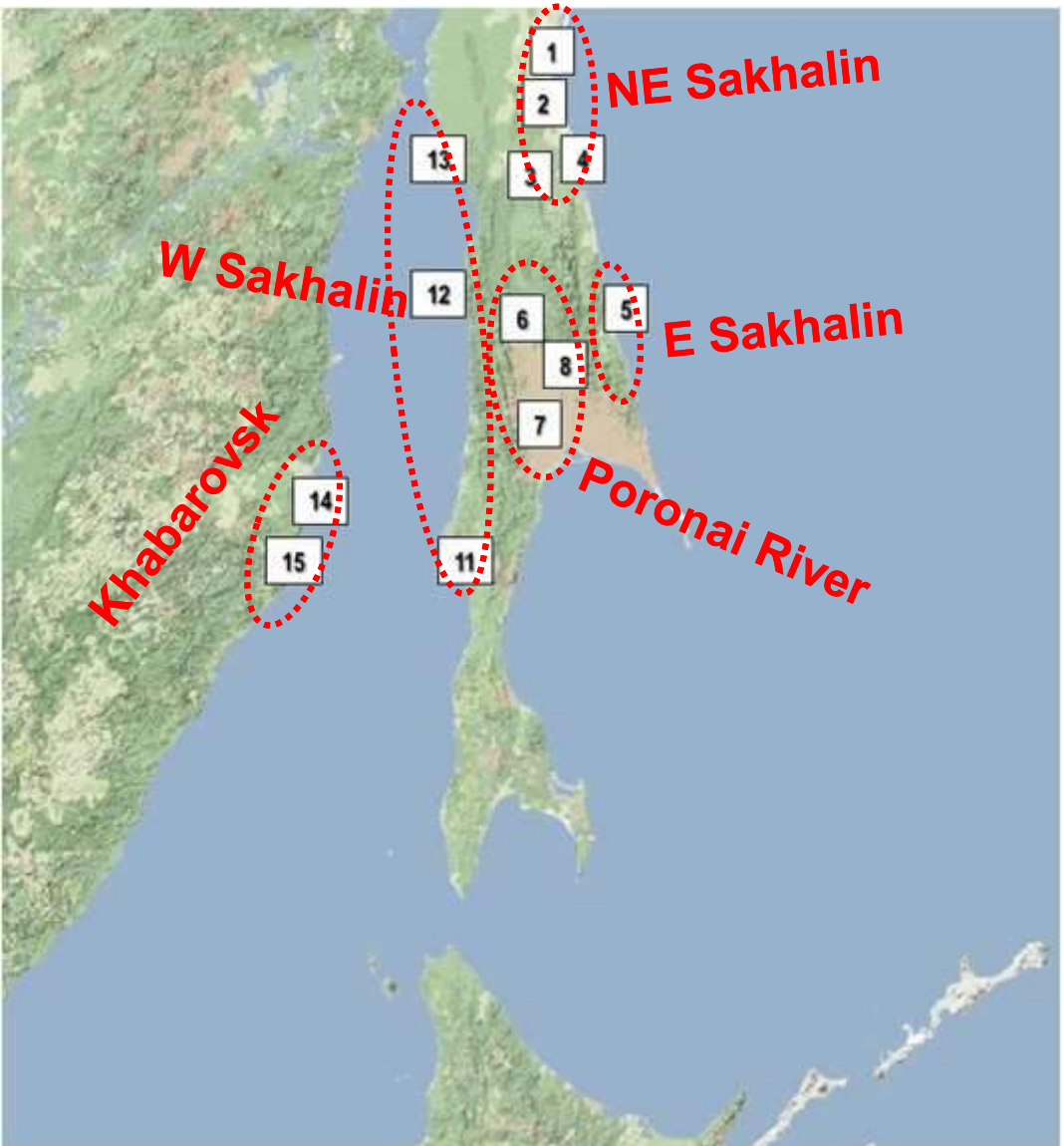
Low migration rate between adjacent rivers

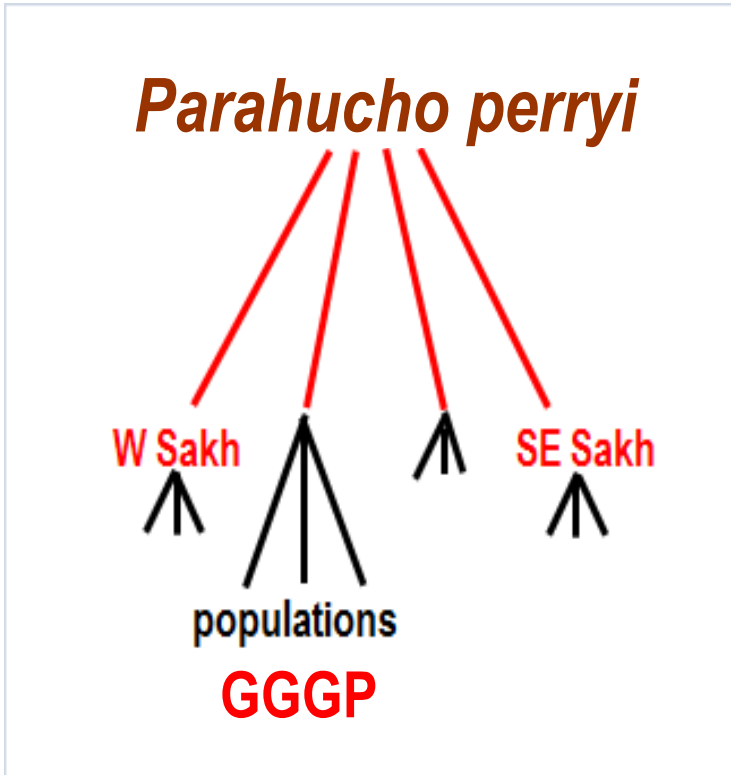
A kind of stepping-stone model



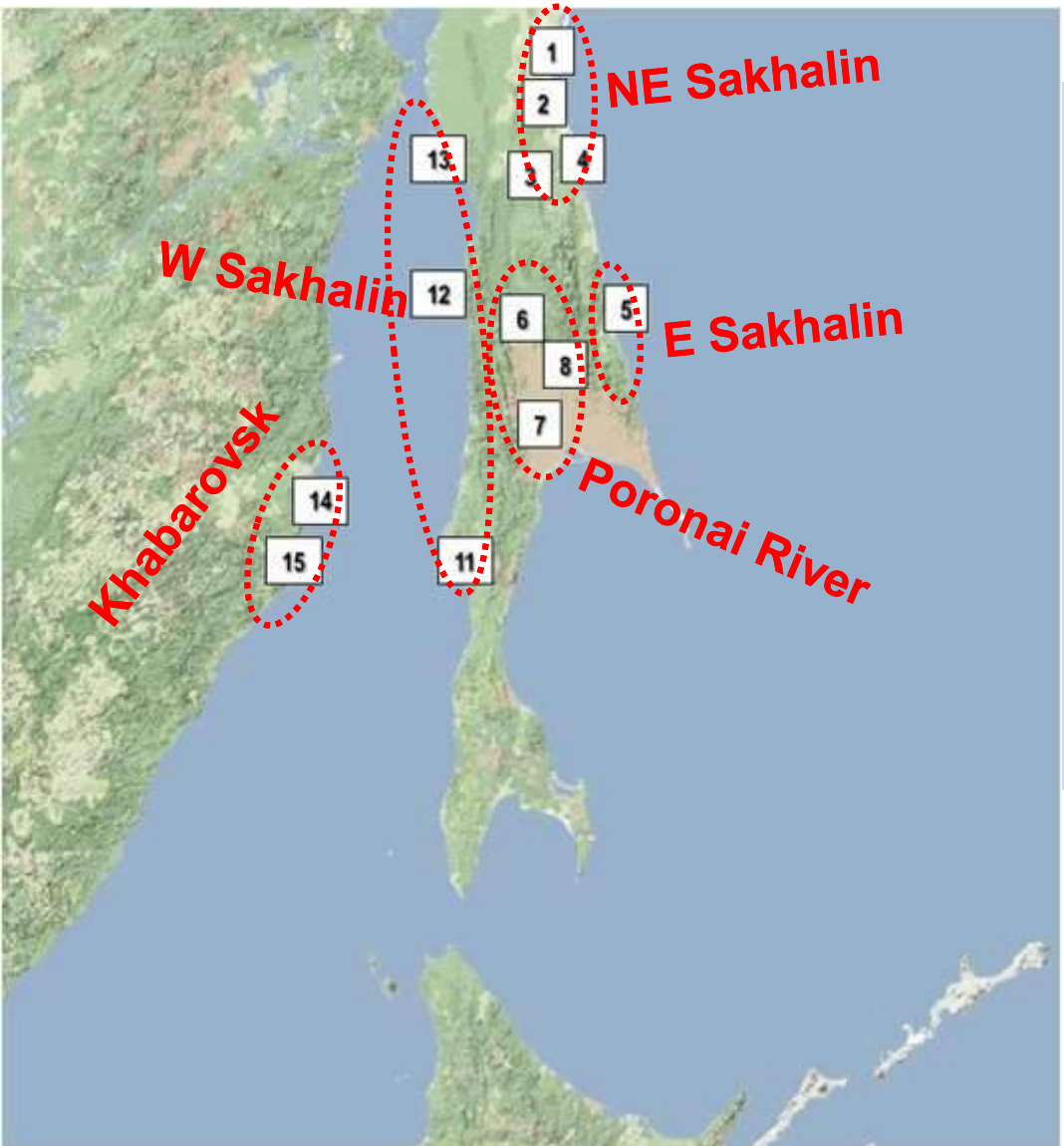
Not so simple

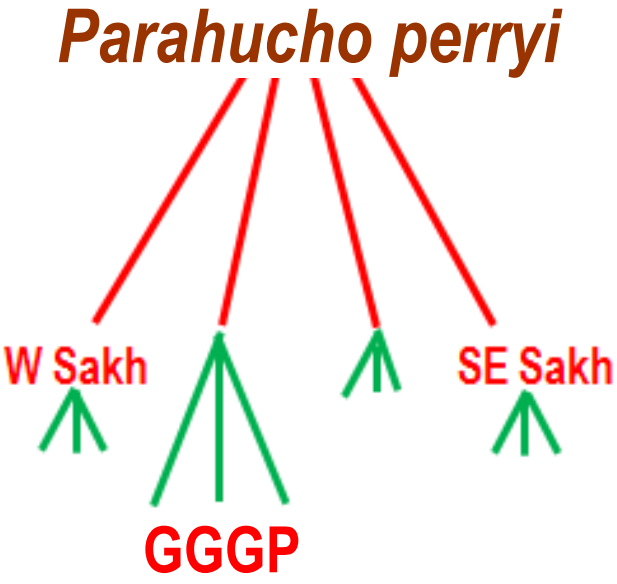
GGGP can be viewed as a principal conservation unit of the species



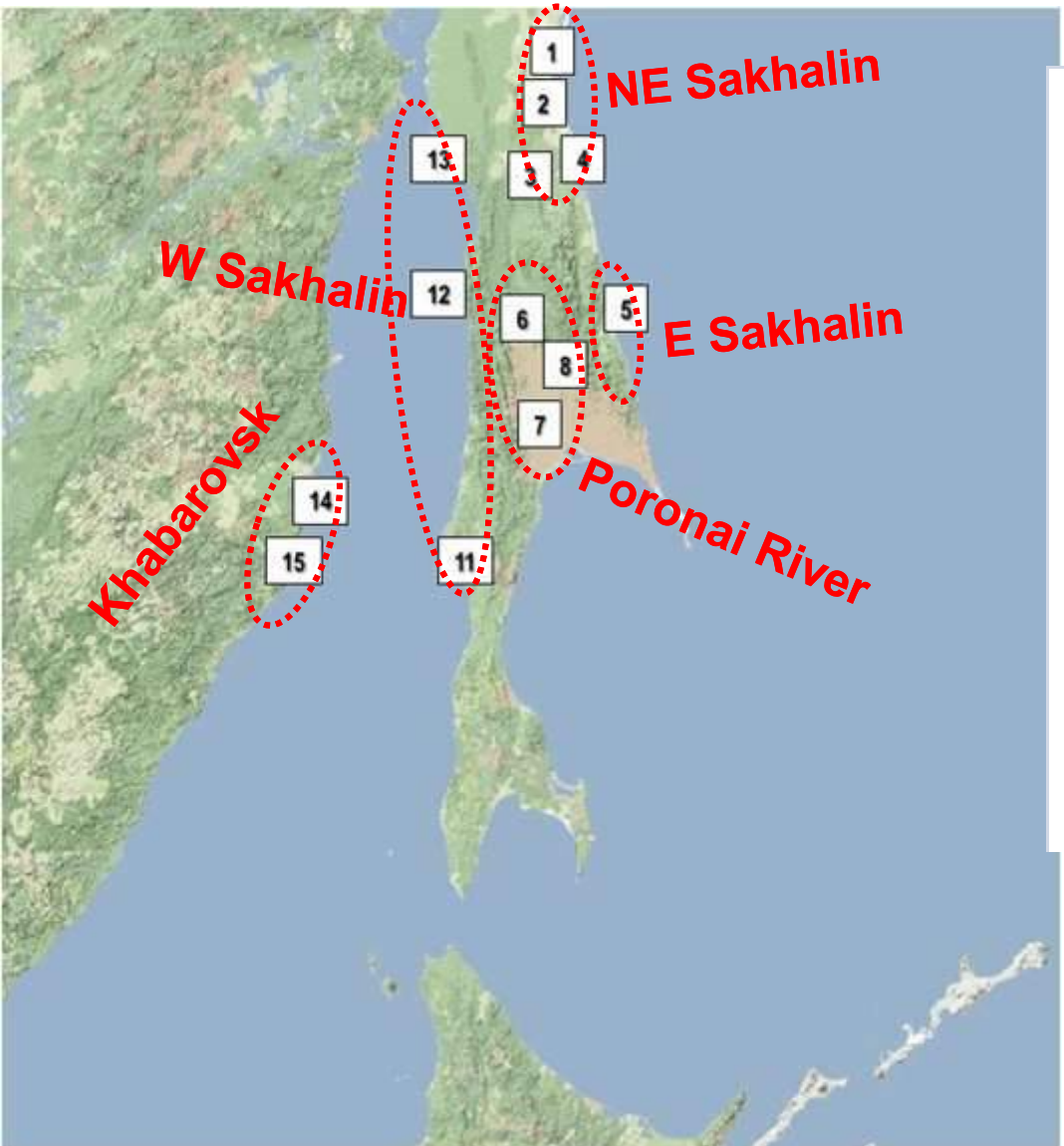


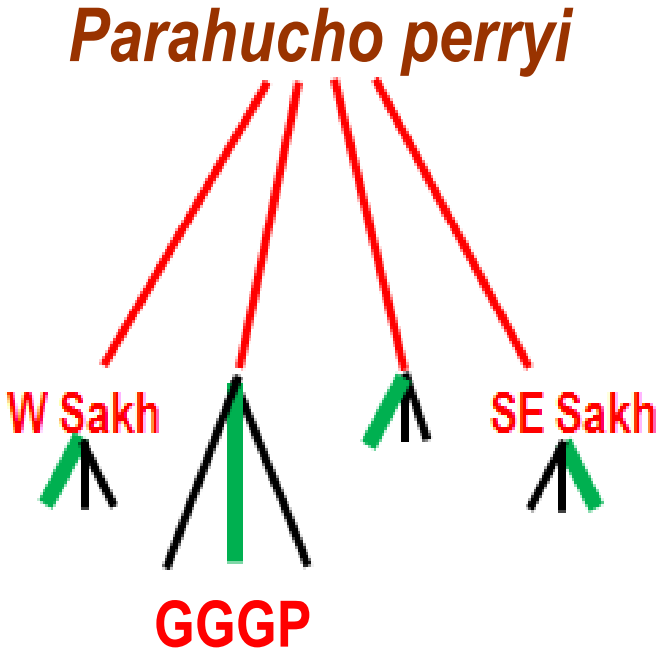
The best conservation strategy would be to conserve **all populations** from each GGGP





A minimal conservation strategy is to conserve **one population** from each GGGP, based on ecological and social requirements





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THANK YOU !