

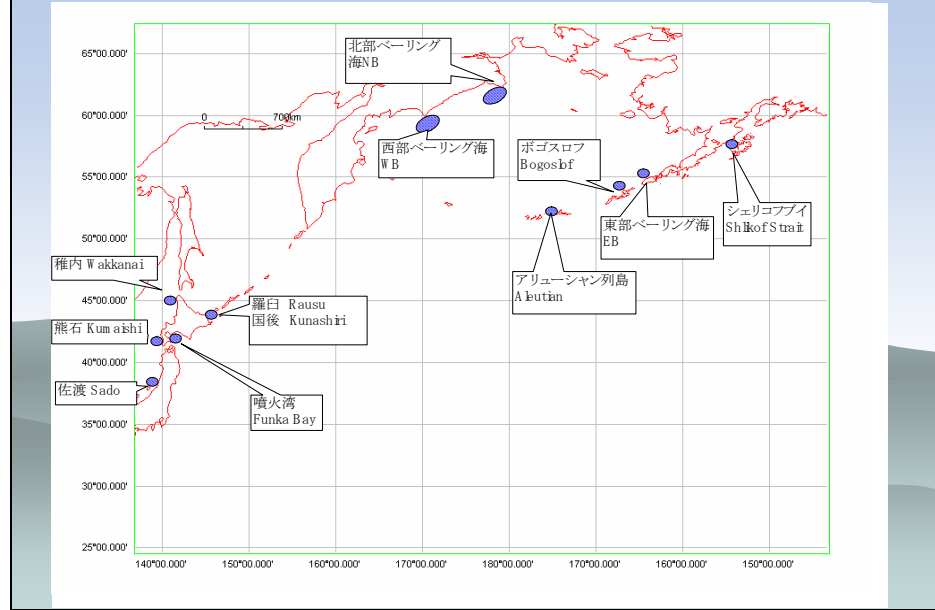
Summary of DNA analysis of walleye pollock by Japanese Scientists (2005)

- ◆ Takashi Yanagimoto (FRA, HNF)
- ◆ Toru Kitamura (Japan NUS co. jp)
- ◆ Takanori Kobayashi (FRA, NRIFS)
- ◆ Ichiro Nakayama (FRA, NRIFS)

DNA analysis

- ◆ Total mtDNA Sequenced
- ◆ mtDNA PCR-RFLP analysis
- ◆ mtDNA control region sequenced
- ◆ Nuclear DNA analysis (RAPD, TREP, SNP analysis of Calmodulin gene)

Sampling locations

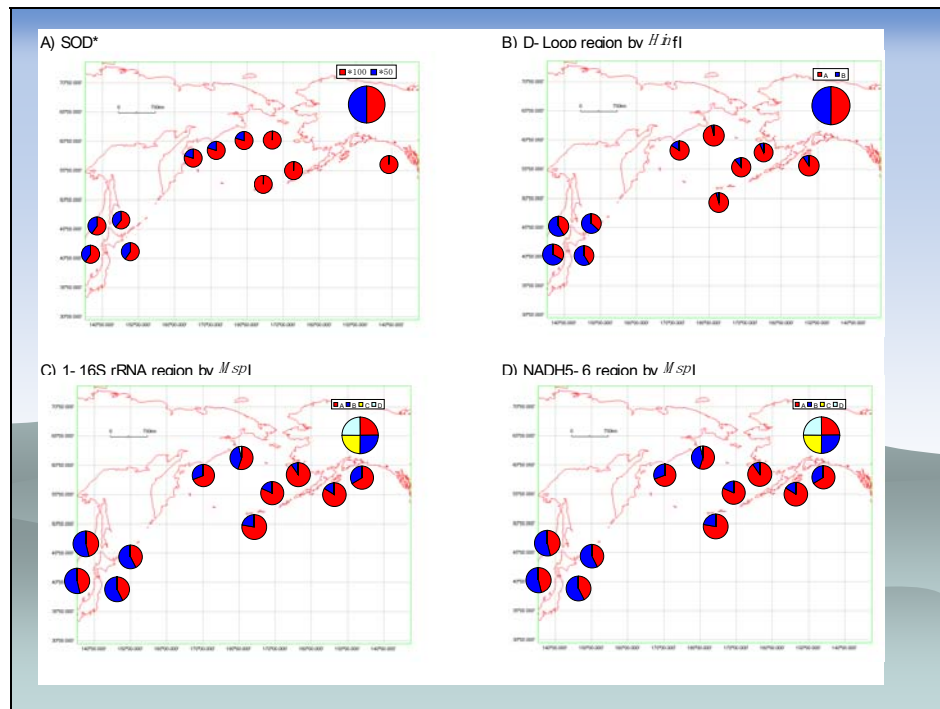
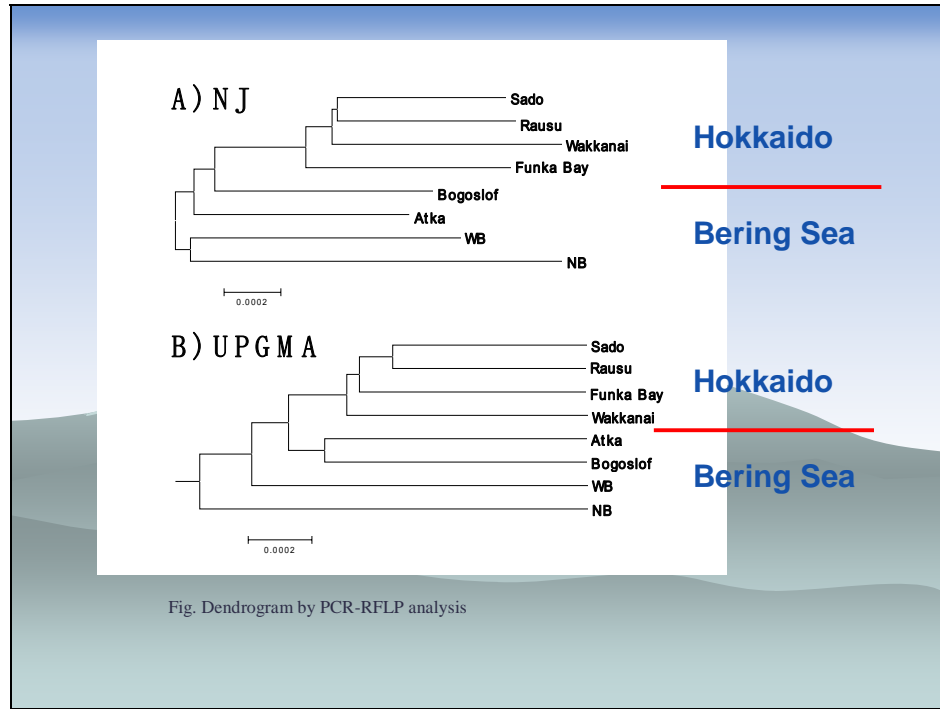


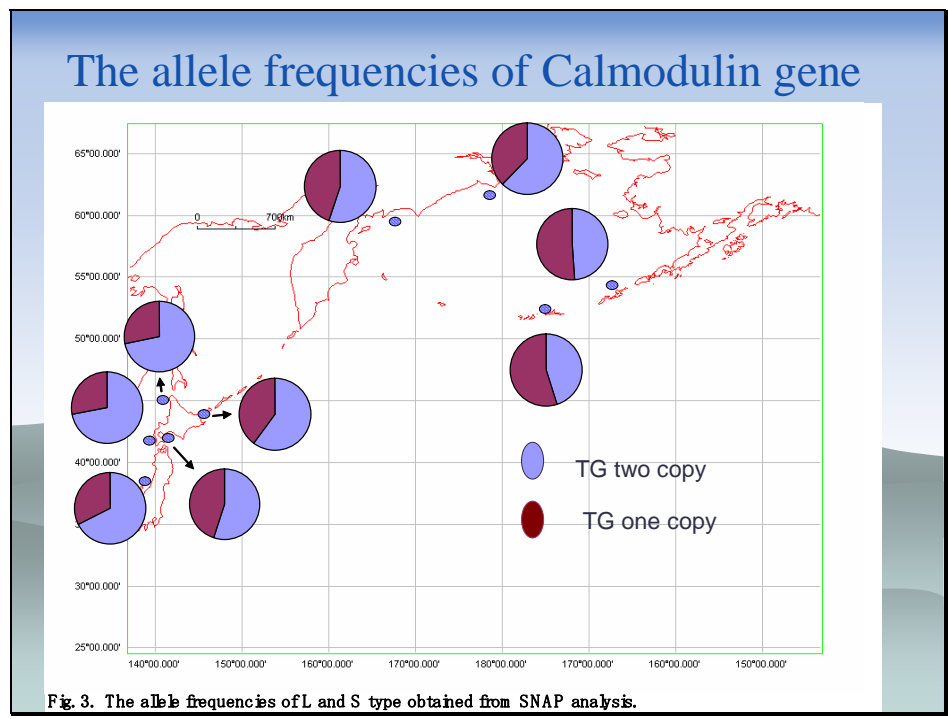
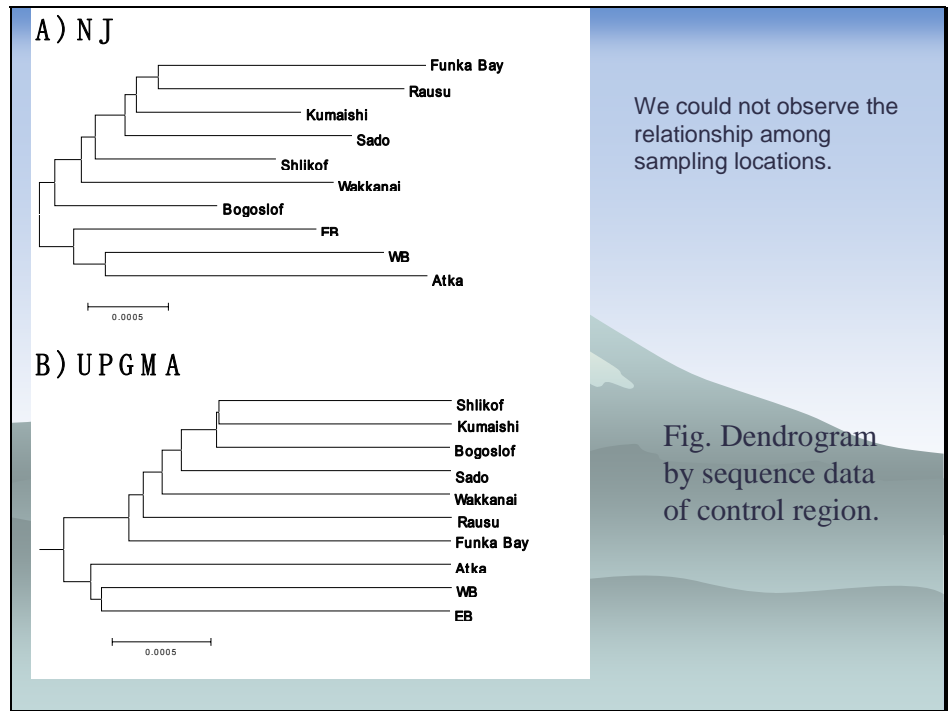
Number of nucleotide substitutions and average nucleotide substitution rate of mtDNA from walleye pollock in the Japan Sea and the Bering Sea.

Table 5. Number of nucleotide substitutions and average nucleotide substitution rate of mtDNA from walleye pollock in the Japan Sea and the Bering Sea.

Region	Size (bp)	Number of nucleotide substitutions	Average nucleotide substitution rate (%)
12S rRNA	953	6	0.20
16S rRNA	1665	4	0.05
ND1	975	21	0.61
ND2	1047	16	0.42
CO I	1551	13	0.23
CO II	699	2	0.10
ATPase8	168	2	0.45
ATPase6	684	11	0.45
CO3	786	10	0.29
ND3	351	6	0.55
ND4L	297	1	0.07
ND4	1386	17	0.34
ND5	1839	35	0.54
ND6	522	6	0.26
Cytb	1161	17	0.40
Control Region	873	12	0.50

AB094061, AB182300-AB182308





Dendrogram of relationships among sampling areas using SNAP data

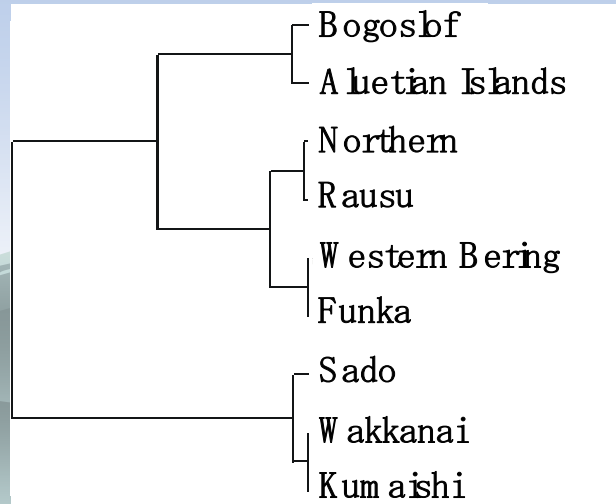


Fig. 4. UPGMA dendrogram of relationships among sampling area of walleye pollock.

Population structure

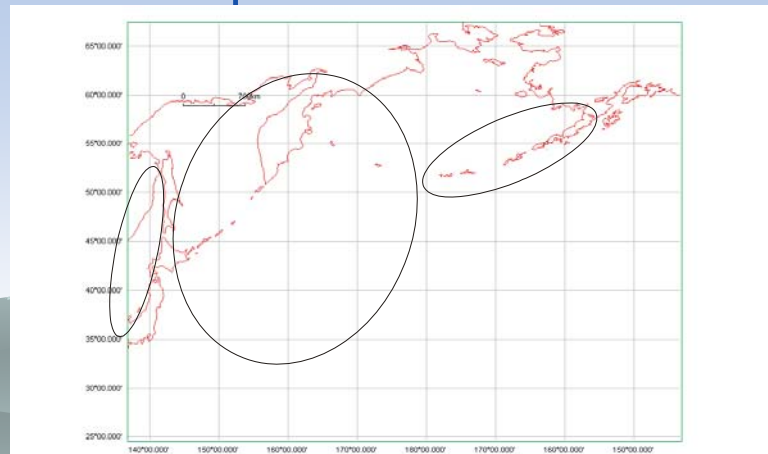


Fig. 5. Population structure of walleye pollock from this study.

Summary

- ◆ There were no area-specific nucleotide variations among sequences of mtDNA control region.
- ◆ In NJ tree, groups were formed without relations of the sampling locations by sequences data.
- ◆ In RFLP analyses, there were no area-specific fragment patterns. But the distribution of fragment patterns from three regions showed differences among sample sites.
- ◆ Composite mtDNA haploptype frequencies were different between Western Pacific and Bering Sea.
- ◆ Based upon SNAP analysis of Calmoduline region, these results are similar to past results (Allozyme).