

# VARIATION OF HERRING (*CLUPEA PALLASII*) MICROSATELLITE LOCI FROM THE JAPAN AND OKHOTSK SEAS

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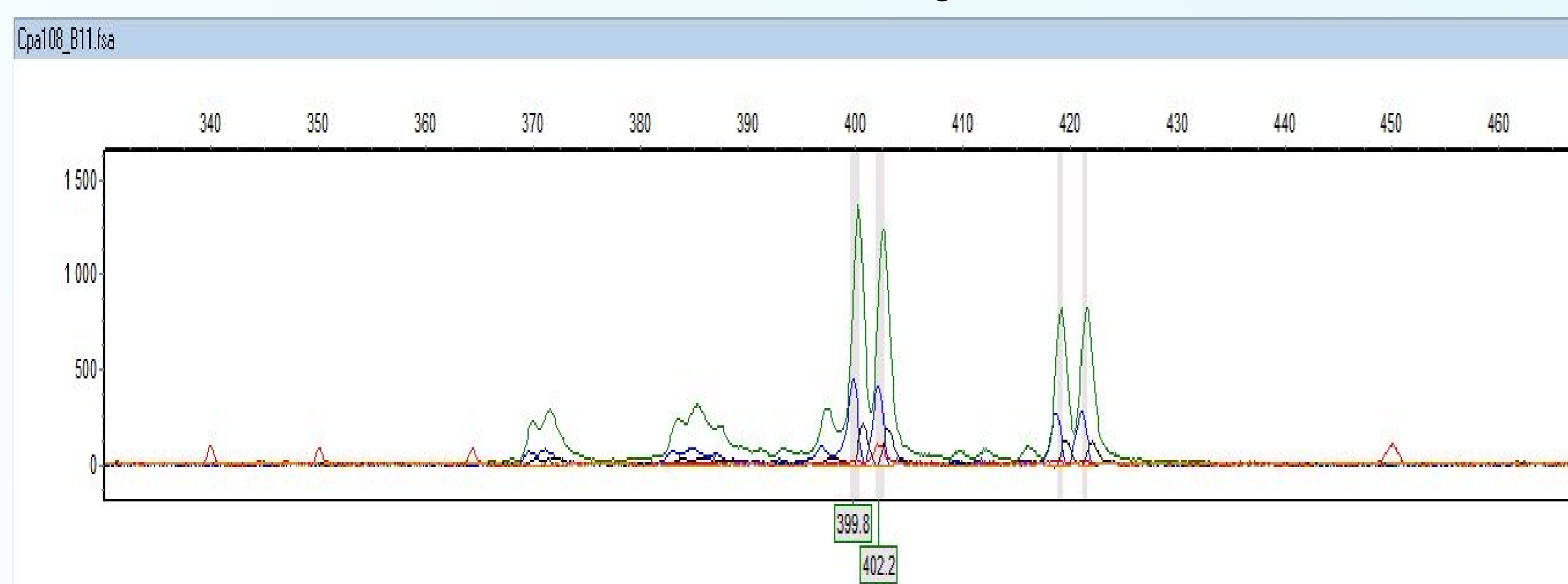
## INTRODUCTION

Pacific herring refers to the subspecies of eastern or low-vertebrate herring - *Clupea pallasii pallasii* Val. and dwells within the continental shelf and adjacent inland areas and forms local herds that differ in biological, ecological, morphological characteristics, numbers, and areas of spawning and foraging. Studies of the population structure using molecular genetic markers are not numerous, despite long-term studies of herring in the whole range of habitats.



## OBJECTIVE

Analysis variations of herring (*Clupea pallasii*) microsatellite loci from the Japan and Okhotsk seas.



## RESULTS

All the microsatellite loci studied were sufficiently polymorphic. The number of alleles varies from 6 to 17. Deviations from the Hardy-Weinberg equilibrium were not observed. The  $F_{st}$  values were calculated from the allele frequencies of the microsatellite loci and varied from 0 to 0.78 to assess genetic differentiation.

	Ald 2007	Ain 2010	Ussur 2007	Ussur 2008	Krasnogsk 2008	Arkovo 2007	Amur 2009	Aleks 2009	Vzmor 2007
Ald2007		+	+	+	+	-	-	-	-
Ain2010	+		+	+	+	+	+	+	+
Ussur2007	+	+		+	+	+	+	+	-
Ussur2008	+	+	+		+	-	-	+	-
Krasnogsk2008	+	+	+	+		+	+	+	+
Arkovo2007	-	+	+	-	+		+	-	-
Amur2009	-	+	+	-	+	+		-	-
Aleks2009	-	+	+	+	+	-	-		-
Vzmor2007	-	+	-	-	+	-	-	-	

## MATERIALS AND METHODS

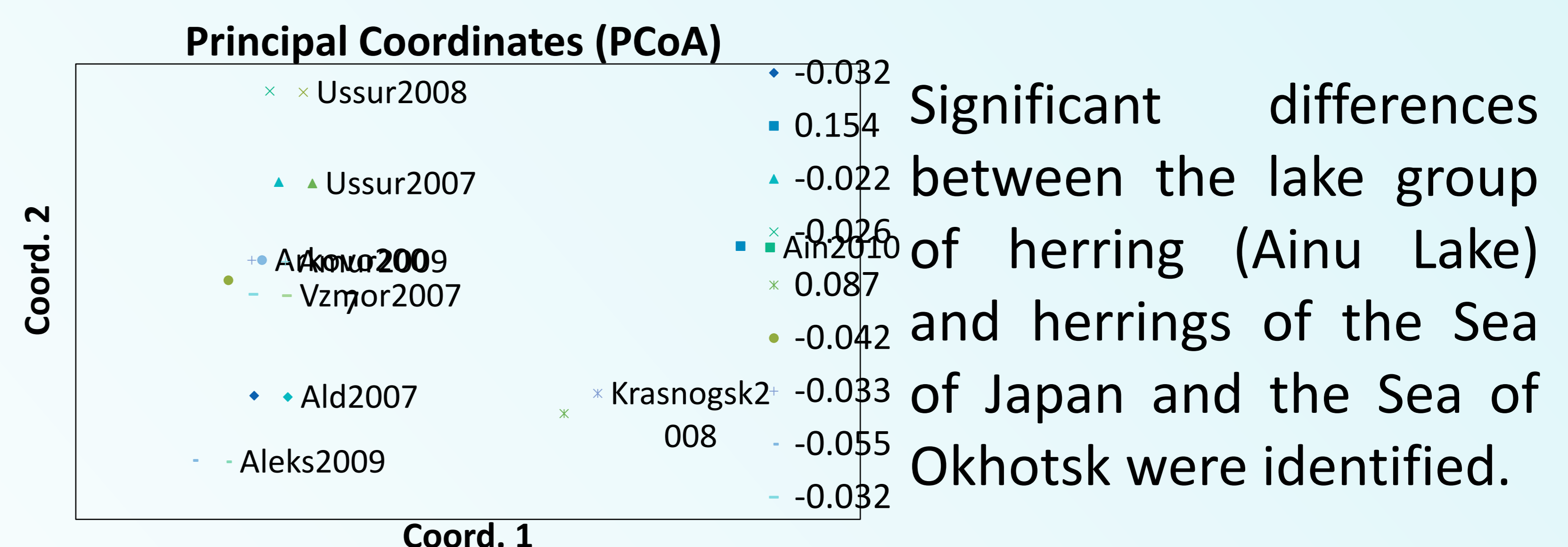
The material for this work was provided by 9 selections collected in 2007-2010 in the spawning grounds of the Japan and Okhotsk seas during the spawning season. The number of samples was 366 copies and 11 microsatellite loci were used for research. After PCR, the resulting microsatellite locus amplification product was separated using the "ABI 3100 Genetic analyzer" capillary electrophoresis system.



Num	Location	Year	Amount
1	Aldoma Bay	2007	38
2	Arkovo	2007	41
3	Aleksandrovskiy Bay	2009	43
4	Ainskoe Lake	2010	42
5	Krasnogorsk	2008	42
6	Vzmorie	2007	42
7	Amurskiy Bay	2009	45
8	Ussuriskiy Bay	2007	37
9	Ussuriskiy Bay	2008	41

Loci	Number of alleles	Fragment size	Dye
Cpa113	20	130-210	Tamra
Cpa112	14	230-310	R6G
Cpa108	13	210-290	Fam
Cha1017	6	140-180	Fam
Msild32	16	160-260	Fam
Cpa104	23	160-270	R6G
Cha1059	13	40-100	Fam
Cpa111	17	220-310	Fam
Cpa114	18	180-260	R6G
Cpa105	21	150-270	R6G
Cha1202	10	80-130	Fam

## CONCLUSION



Also, the statistical estimates obtained not only indicate a genetic differentiation between the herring population living in the south of the Sea of Japan from those living in the north, but also the intensive migration of herring from the Sea of Okhotsk to the Sea of Japan.