

## POPULATION STRUCTURE OF LANDLOCKED MASU SALMON (ONCHORHYNCHUS MASOU) IN TOHOKU REGION AFTER FUKUSHIMA NUCLEAR POWER PLANT INCIDENT

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### ABSTRACT

Tohoku region has been impacted by heavy tsunami during 2011 which caused explosion of Nuclear Power Plant in Fukushima prefecture. Due to safety reason, evacuation has been enacted in several towns in. This study aim to understand the population structure of landlocked masu salmon (*Onchorhynchus masou*) in from four population of rivers (Hirose, Abukuma, Ukedo and Mano). Eleven microsatellite markers and two mitochondrial markers (D-loop and Cytb) were used to identify genetic variation of each population. Out of twenty eight (28) loci, eleven (11) showed consistent amplification and variation between population and used in analysis. Number of alleles ranged from 1 to 23 in each microsatellite locus whereas Hirose population showed highest number of alleles. Haplotype diversity also showed highest number of D-loop and CytB haplotype in Hirose population (6). Molecular variances largely found within individuals (66%) and only 5% molecular variation found among population. Population differentiation (Fst) showed little genetic differentiation between four rivers. STRUCTURE analysis showed admixture largely between three rivers (Mano, Ukedo, Abukuma). This result suggest reduction of genetic diversity of landlocked masu salmon in three rivers (Abukuma, Mano, Ukedo) in comparison to Hirose population.

**Keywords:** Microsatellite markers, Masu Salmon, Population genetic, Mitochondrial DNA, Fukushima Incident

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