

## SCIENTIFIC EVIDENCES AND QUESTIONS IDENTIFIED BY HANASAKI PROGRAM

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Hanasaki Program is an on-going joint research program on Hanasaki Crab (*Paralithodes brevipes*) between SakhNIRO and Nemuro City, starting from 2004. 5 years program activities have been elucidating interesting and important scientific evidences and questions on Hanasaki Crab in Okhotsk Sea, and have been developing tools for further research, those to be the seeds for Okhotsk Sea component of PICES-FUTURE Program. The study on genetic structure of Hanasaki Crab in Okhotsk Sea identified 3 local population groups of Nemuro-South Kuril, Sakhalin, and Kamchatka populations, suggesting genetic differentiation caused by population size reduction of Sakhalin and Kamchatka populations in relatively recent past (e.g. the last glacial period) and subsequent isolation. The extent of Sakhalin population reaches to the northern coast of Shiretoko peninsula and thus the boundary separating from Nemuro-South Kuril population is the Nemuro Strait. This result is supported by numerical model simulation on larval transport of planktonic larvae. Possible hypothesis on mechanism of blocking Sakhalin-origin larvae to reach South Kuril water can be front and warm water of Soya Current. The possible oceanographic conditions favorable for retention of planktonic larvae of Hanasaki Crab within South Kuril water are revealed by mooring current measurements and partly by regional simulation model, i.e. persisting cyclonic circulation in the South Kuril Strait and topographic down-welling sites. The investigation of population dynamics of Hanasaki Crab is, like other crabs, limited by difficulty of tagging survey because of tag drop off with molting. The program succeeded in developing very promising tagging methods, of which tags remain after molting of 4 times or more in tank test. The full scale field test should be made in nearest future.