

The efforts to preserve genetic variation in this hatchery



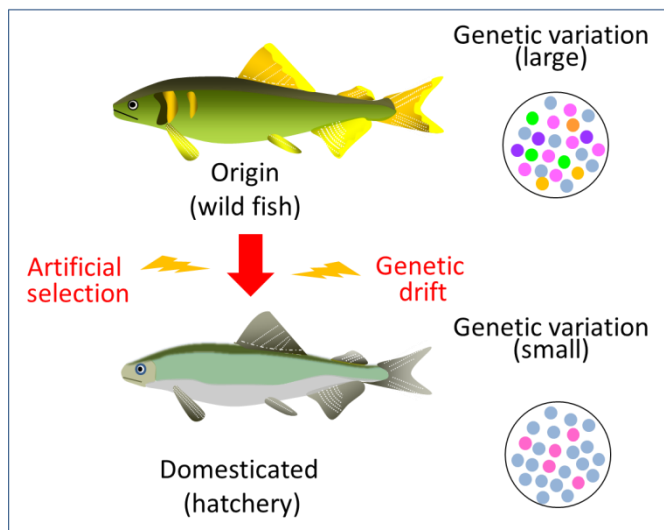
■ Origin of parent fish

The admixture of genetically different populations may not be favorable for the sustainable management of wild fish populations. To preserve genetic variation of Ayu endemic to Nagara River, we capture parent fish from Nagara and nearby Kiso River, and use them for artificial fertilization.



■ Effective population size

Effective population size (i.e., N_e) is the number of individuals, which contribute reproduction and transfer their genes to next generation. At least, the N_e greater than 50 is recommended to prevent the losses of genetic variation. From the stand point of these criteria, we used more than 1,500 males and 4,000 females for the fertilization.



■ The number of generations

Evolutionary response (i.e., genetic drift, natural selection) may loss genetic variation of wild populations, when their progeny will be domesticated under the artificial environments over generations. To reduce this risk, this hatchery is not allowed to hold fish across the generations in general.