Editorial

Genetic bottlenecks are important in population biology because a reduction in the population size of a species can compromise its subsequent adaptive potential and evolution. Founder events have been mostly studied in colonizing species, which have to adapt to new conditions for survival and undergo a reduction in population size. Captive populations are also ideal for studying the effect of founder events because losses in genetic variability have been associated with a reduction in fitness components and it is therefore of utmost importance to maintain genetic variability over time. Not only the number of founding individuals but also their initial genetic variability will affect the long-term maintenance of diversity and the survival of captive populations. Furthermore, founder individuals may contribute differentially to the sampling of the next generation through aspects such as age, state of health and diet. For a species with high reproductive potential, a small minority of individuals can originate most offspring in a given year because of "sweepstake" reproductive success. All of these factors will cause major changes in gene frequency and a reduction in effective population sizes during the first generations of captive breeding.

The featured article in this issue of *Scientia Marina* is "Loss of genetic variability in a hatchery strain of Senegalese sole (*Solea senegalensis*) revealed by sequence data of the mitochondrial DNA control region and microsatellite markers" by P. Sánchez, J. Viñas, J.R. Alvarado Bremer, P.P. Ambrosio and R. Flos. This paper illustrates the role of genetic comparisons between different wild populations and a hatchery population of fish using mitochondrial and nuclear markers. First, it reveals significant genetic differentiation between Atlantic and Mediterranean populations. Second, it reports loss of genetic diversity in the captive population. Third, it provides evidence of high variance in reproductive success among females, suggesting that this variance can explain most of the genetic variability lost. Overall, the study highlights the need for accurate knowledge of the genetic composition of farmed stocks to maintain them in culture and for future restocking.

This issue of *Scientia Marina* also includes a mini-review article which addresses the important question of whether coral reefs will be able to adapt or acclimate to global changes, particularly to global warming and ocean acidification. According to the Status of Coral Reefs in the World report of year 2008, since 1950, around 20% of coral reefs worldwide had already been destroyed, with another ~35% seriously threatened with loss in the next 10 to 40 years. In addition to local pressures such as increased pollution, overfishing, habitat destruction and runoff from land, coral reefs worldwide are affected by main global pressures such as global warming and ocean acidification. In this context, there is a pressing need to understand whether corals will be able to cope, through acclimatization or adaptation mechanisms, with the current anthropogenic change, which is occurring at extremely fast speeds, unprecedented over hundreds of millions of years. In his article, Ove Hoegh-Guldberg, a leading marine biologist specialized on the impact of global warming and climate change on coral reefs, argues that, given the current rate and scale of anthropogenic climate change, coral reefs will not be able to keep pace with it. Unless we start reducing CO_2 emissions immediately, this mini-review article predicts a bleak future for coral reefs over this century.

We hope you will enjoy both contributions as well as all the other scientific papers and the two biographies of past directors of our home institution.

Marta Pascual, Scientific Editor of the featured article
Carles Pelejero, Guest Editor of the topic on corals under warming and acidification
Francesc Peters, Secretary and Associate Editor
Dolors Vaqué, Editor in Chief

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