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Current population status of non-indigenous animals on Jeju-do, Korea, with reference to proposed management plans

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Alien species often undermine local ecosystems and decrease indigenous species, sometimes even leading to their complete extinction. Biodiversity loss and structural change of ecosystems caused by the alien species are currently major concerns of conservationists worldwide. As shown in frequent, obvious damage on an indigenous freshwater ecosystem following introductions of aquatic alien species, such as the American bullfrog (*Rana catesbeiana*), red-eared slider (*Trachemys scripta*), blue gill (*Lepomis macrochirus*), large mouth Bass (*Micropterus salmoides*), and rainbow trout (*Oncorhynchus mykiss*), alien species exert various harmful effects on the native biodiversity, usually by invading into the habitats originally occupied by the native species. To avoid or at least minimize such unfavorable effects, management before their arrivals is more important than any other measures. In South Korea, the total numbers of alien species hitherto introduced are 504 for the whole Vertebrata, 128 for the Mammalia, 95 for the Aves, 124 for the Reptilia, 10 for the Amphibia, and 147 for the Pisces. However, establishment of effective laws and regulations to prevent further introduction of alien species has not yet been completed in this country. Moreover, basic scientific researches on the effects of the introduced alien species on indigenous ecosystems have been rarely conducted so that biological data on the alien species are badly insufficient except for only a few species. I have investigated current population status of non-indigenous vertebrate animals on Jeju-do, South Korea. The alien vertebrates introduced to this island and established as feral populations in the wild include four fishes (grass carp *Ctenopharyngodon idella*, common carp *Carassius cuvieri*, rainbow trout *Oncorhynchus mykiss*, and blue gill *Lepomis macrochirus*), one amphibian (American bullfrog *Rana catesbeiana*), one reptile (red-eared slider *Trachemys scripta elegans*), one bird (black-billed magpie *Pica pica*), and six mammals (Siberian chipmunk *Tamias sibiricus*, Eurasian red squirrel *Sciurus vulgaris*, black rat *Rattus rattus*, common rat *Rattus norvegicus*, Japanese deer *Cervus nippon*, and wild boar *Sus scrofa*). On this opportunity I review the results of the recent investigations. Also, I introduce measures attempted to control those alien species and some management plans proposed.