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Risk of extinction and patterns of diversity loss in Mexican orchids

The Mexican official regulation (NOM-059-ECOL-2001) lists about 200 orchid species in a risk category (Extinct, Threatened, and Under Special Protection). We constructed a data base that includes the most relevant information in order to plan the conservation strategies of these taxa (nomenclature, descriptions and illustration for identification, geographical data of all known populations, climate, habitat, refuges, natural history and ecology, population traits, risk factors, etc.). The information will be available from the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO). Based on this data base and using geographical information systems we have detected the areas of concentration of threatened orchids and how they are related with the natural protected areas and priority areas for conservation. Different patterns of the risks, threats, and loss of diversity are discussed. It is evident that climatic change effects combined with bad land management in unique habitats are the most important threat and risks. Population extirpation in extensive, densely populated and impacted areas, especially in Veracruz and Puebla may mean an important loss of the species' total genetic diversity. An especial effort was done to evaluate as precise as possible, the extinction rates of orchids in the country. Finally, and together with other conservation biologists, a method to evaluate the extinction risk in plants was developed and is being adopted by environmental authorities of the country.