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## **Response of pine-oak communities to climatic change: simulation of scenarios towards the temporary horizon 2050 and 2100 using the model Climpact in the Sierra del Nido, Chihuahua, Mexico.**

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**From the conservation of the isolation to the ecology of the connectivity:  
example of application in the first ecological network of conservation in  
the north of Mexico / De la conservación del aislamiento a la ecología de  
la conectividad: ejemplo de aplicación en la primera red ecológica de  
conservación en el norte de México**

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To find integrity, health and sustainability of social-ecological systems, the ecological network scheme allows the possibility to include the optimal combinations of natural and semi-natural ecosystems in conjunction with urban and artificial ecosystems in a single management unit. In a first stage, the reservoirs of biodiversity that are intended to be conserved as a priority are identified and these will be the object of structural and functional connectivity within the ecological interconnection system. Then, the network that defines the area of connectivity between the reservoirs is formed, where the interactions between landscape patterns and ecological processes are analyzed by defining the landscape units; the latter allow us to define and understand the high levels of eco-diversity of the network and from these units, define the ecological continuity by ecosystemic expression. The conservation of biodiversity can no longer be reduced only to the protection of species and natural resources from protected natural areas; although, the latter are necessary as part of a global conservation strategy. Conservation cannot be limited only to threatened species, but must be integrated into all species and habitats.

En el esquema de red ecológica es posible incluir en un solo sistema de gestión y ordenamiento territorial las combinaciones óptimas de ecosistemas naturales y seminaturales, junto con los ecosistemas urbanos y artificiales, en busca de la integridad, salud y sostenibilidad de los sistemas socio-ecológicos. En una primera etapa se identifican los reservorios de biodiversidad que se pretenden conservar como prioridad y estos serán el objeto de conectividad estructural y funcional dentro del sistema de interconexión ecológica. Después se conforma la red que delimita la zona de conectividad entre los reservorios, en donde se analizan las interacciones entre patrones paisajísticos y procesos ecológicos mediante la definición de las unidades de paisaje; estas últimas, nos permiten

definir y comprenden los altos niveles de ecodiversidad de la red y a partir de dichas unidades, definir la continuidad ecológica por expresión ecosistémica. La conservación de la biodiversidad ya no puede reducirse solamente a la protección de especies y de medios naturales a partir de áreas naturales protegidas, aunque estas últimas resulten necesarias como parte de una estrategia global de conservación. La conservación no puede limitarse únicamente a las especies amenazadas, sino que debe integrarse al conjunto de especies y de hábitats.

**Potential of assisted migration and elevational germination in seeds of arboreal species of the cloud forest in the occident of Jalisco, Mexico /  
Potencial de migración asistida y germinación elevacional en semillas de especies arbóreas del bosque mesófilo de montaña en el occidente de Jalisco, México**

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The increase in temperature and the decrease in humidity affect the viability, germination and future spatial configuration of a plant population within the forest. Therefore, we expect a similar response of germination and possible migration under similar conditions of microclimate in an elevational gradient. We selected two sites for each of the altitudes 1650, 1850, 2000, 2150 and 2380 m.a.s.l. We characterized type of vegetation, monitored temperature and humidity of the soil with sensors. We evaluated the percentage of germination of four species of the cloud forest from July 2017 to January 2018. The seedlings were harvested when presented extended true leaves to measure leaf area, biomass, length and weight of stem and root. The germination, biomass and leaf area were higher in sites with greater canopy cover, diversity and constant soil moisture (2000-2380 m.a.s.l.) in *Quercus nixoniana* and *Cinnamomum pachypodium*, which suggests a possible upward migration of the mountain. As opposed to *Cleyera integrifolia* and *Fraxinus uhdei* that presented a greater germination in low mountains (1850-1650 m.a.s.l.). *C. integrifolia* and *F. uhdei* may not present migration in a change scenario due to the germination response in less humid sites and temperature increase.