

Título: ECOLOGÍA DE UNA POBLACIÓN HERBÁCEA (CAREX REMOTA L.) ASOCIADA A REGATAS DE UN BOSQUE TEMPLADO NO GESTIONADO

Nombre: Uría Díez, Jaime

Universidad: Universidad de Navarra

Departamento: Biología vegetal

Fecha de lectura: 25/10/2011

Programa de doctorado: biología y medio ambiente

Dirección:

> **Director:** Ricardo Ibáñez Gastón

Tribunal:

> **presidente:** ADRIAN ESCUDERO ALCANTARA

> **secretario:** Antonio gazol burgos

> **vocal:** JORDI GARRIGO REIXACH

> **vocal:** NERE AMAIA LASCURAIN AYASTUY

> **vocal:** JOSE MIGUEL OLANO MENDOZA

Descriptores:

> ECOLOGIA VEGETAL

> BOTANICA

El fichero de tesis no ha sido incorporado al sistema.

Resumen: Our main objective was to describe the spatial behavior of several microclimatic conditions and to know how they affect the structure of a riparian plant population: *Carex remota*. Riparian zones provide space for high biological diversity compared with adjacent upland forest because of their special microclimatic conditions. The study was carried out in an old-growth temperate forest in Bertiz Natural Park, north of Spain.

Our first objective was to explain the spatio-temporal soil moisture gradient generated from the stream edges, and to know its influence in the presence of the riparian species. Soil moisture showed a sigmoid trend and allowed us to define the limits of a wet riparian zone at 1.25 m of distance from and 0.55 m in elevation above stream banks. Elevation above stream banks was more influential than distance in defining the limits of the riparian zone. Riparian zone values of soil moisture were high and constant even at the end of a dry period due to the continuous water flow. These high and constant soil moisture values allowed the establishment and development of *Carex remota*.

Our second objective was to understand the dependence on abiotic factors and the biotic process of the development of the *Carex remota* population. With the use of a point process approach we were able to simulate separately and jointly the effect of a homogeneous or heterogeneous habitat and the absence or presence of some biotic processes, as seed dispersal and/or density-dependent interactions. The result of the bivariate function analysis suggested a weak positive relation between adults and seedlings that survived the first

summer. Models from three censuses showed a decreasing degree of clustering from seedlings to adults. The new Matern Cluster process allowed the quantification of the different sources of variation driving the spatial distribution of the *Carex remota* population studied. Besides, the results showed that the importance of the main factors that explain the population structure changed along the development of *Carex remota* stages. Compared to seedlings, the adults pattern showed an increasing dependence of abiotic factors.