

Initial spider succession at managed forest borders

THEO BLICK

Lehrstuhl Tierökologie I, Universität Bayreuth, Postfach 10 12 51,
95440 Bayreuth, Germany

Vegetation management procedures were used to increase the structural complexity on the borders of forests which were initially of low complexity (project supported by the German Ministry of the Environment: E + E Projekt "Aufbau reichgegliedeter Waldränder").

Management included the planting of shrubs and small trees on meadows and arable land in front of the former border in a band of from 15 to 30 m wide. Planting was carried out in 1990 and the planted areas were fenced to keep out large herbivores. Pitfall sampling of the epigeic spider fauna was carried out synchronously with the forest border management procedures at sites near Feuchtwangen (Bavaria, Germany). Sites where no management occurred were used as controls. Data up to 1993 will be presented from two sites. In the first two years after management there were marked changes in the spider fauna. Dwarf spiders were most active in the first year (*Oedothorax apicatus* on former arable land and *O. fuscus* on former meadow land). Mobile forest and ecotone spiders began to invade the managed areas in the first and second years (*Micrargus herbigradus*, *Diplocephalus latifrons*, *Bathyphantes parvulus*, *Centromerus sylvaticus*). Spider species and families which do not tolerate intensive crop or hay production are increasing in species richness and in density (Gnaphosidae, some Lycosidae). Species more specialized in utilizing forest or forest border environments did not expand into the managed areas until 1993.

Changes occurred more quickly in the former arable lands than in former meadows which have a more stable spider fauna. A typical and stable species composition will probably only be reached in 15 to 20 years.