

SUMMARY / RÉSUMÉ

Due to their high diversity, their crucial ecological roles and their use as bio-indicators, insects have been increasingly taken into account into the management of natural areas for ten years.

However, the study of insects currently suffers from a lack of professional resources (entomologists, diplomas) and from insufficient background knowledge among land managers, despite an increasing interest.

Insect studies include not only rough inventories but also monitoring designs or studies comparing the environmental effects of management practices. All these approaches require particular sampling methods.

Even though forest managers have been leading entomological studies for a long time, sampling protocols and study groups often differ between study sites. The comparison of results is therefore quite misleading.

In 2001, upon request of several land managers, a working group called Inv.Ent.For. emerged. This group, composed of professional and non-professional entomologists, aimed at defining a technical and standardized framework for forest insect sampling; i.e. key insect groups and common sampling techniques. Proposals are detailed in five chapters of this report.

Chapter 1 includes conceptual and practical information about the basic principles and steps of sampling designs.

Chapter 2 gives a detailed list of techniques to sample insects in terrestrial (not only forest) ecosystems as well as landwaters. Four families of methods are precisely described, with a practical perspective in temperate forests: pitfall traps, window-flight traps, Malaise traps and light traps. Insect groups and related techniques in tropical forests are highlighted in Chapter 3.

Since it is really difficult to encompass the huge diversity of forest insects, the Inv.Ent.For. group suggests to focus insect studies on 5 representative insect groups: ground beetles, saproxylic beetles, Hoverflies, Butterflies and moths, and *Formica* ants. The interests of these 5 groups, as well as their sampling techniques, are discussed in Chapter 4.

The last chapter points out some practical tips to maintain and preserve insect samples, from sampling to packaging, mounting and data management.