

Impact of climate change on the dynamics of forests pests in Algeria

Gahdab Chakali^{1,*}, Hezil Sara¹

¹ Ecole Nationale Supérieure Agronomique, Département de Zoologie Agricole et Forestière, El-Harrach 16200 Alger (Algérie).

* Corresponding author: chakali_gahdab@yahoo.fr

Abstract: Pine forests are favorable to the activity of various insect pests. Severe outbreaks are periodically caused by the processionary moth, *Thaumetopoea pityocampa*, in semi-arid areas of the Mediterranean Basin, often resulting in spectacular defoliations. Currently, this defoliator has become a model for study of climate change effects on forest pest insects in that region, and its range extends year after year. Climatic variations recorded in semi-arid areas have influenced the establishment of various insect groups, particularly bark beetles that find a favorable environment for their development. The pine shoot beetle, *Tomicus destruens* is an example, which has contributed significantly to diebacks recorded in recent decades in natural pine forests. Periodic outbreaks of Lepidoptera also occur. The gypsy moth, *Lymantria dispar* and its competitors, *Catocala nymphaea* and *Ephesia nymphagoga* are concerned, being a constant threat in oak stands, some years causing substantial defoliations in Cork oak and Holm oak forests. Recently, the occurrence of xylophagous insects such as *Platypus cylindrus* and *Cerambyx cerdo* has increased in cork oak forests in the Eastern and Western parts of Northern Algeria. In elevation, the Atlas cedar forest has not escaped to defoliations by the winter and summer processionary moths, *T.pityocampa* and *Thaumetopoea bonjeani*. Similarly, diebacks recorded over the past three decades in the Belezma cedar forest are the result of behavior of xylophagous aggressors, in related to environmental, especially climatic conditions. Forest insects are very sensitive to environmental changes influencing their distribution, but differently depending on species. As a result, under the effects of climatic factors, how these species share space and time, as well, as how they disperse, largely varies among them. This makes it difficult to foresee the effects of climate change on the structure of forest ecosystems.

Keywords: Climate change, Forest Insect, Algeria