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for Protection of Forest Resources in Central Europe

Insect outbreaks in managed and unmanaged forests

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CONTENTS

Preface.	4
Danuta Woreta, Andrzej Kolk Insect outbreaks in managed and protected forest stands	7
Jerzy R. Starzyk, Wojciech Grodzki, Zenon Capecki Occurrence of the bark beetle <i>Ips typographus</i> (L.) in the managed and protected forests in the Gorce Mts. (the southern Poland)	17
Andrzej Mazur, Andrzej Łabędzki, Andrzej Raj Observations of phenology and frequencing of the spruce bark beetle (<i>Ips typographus</i> L.) and its accompanying species in the uppermost subalpine spruce forest zone environment in the Karkonoski National Park	29
Andrzej Raj, Andrzej Łabędzki, Andrzej Mazur Characteristics of forest stands in the uppermost forest boundary zone of the Karkonoski National Park	47
Wojciech Grodzki, Jerzy R. Starzyk Windthrows in selected national parks in the Carpathians, and related research needs concerning forest protection	59
Andrzej Leśniak Communities of epigeic entomofauna with special emphasis on Carabidae (Coleoptera) in the protected and managed forests in the Świętokrzyski region	65
Grzegorz Tarwacki Carabidae fauna in pine stands treated with acylurea insect growth regulators	73
Iwona Skrzecz The effects of wood debarking of Scots pine (<i>Pinus silvestris</i> L.) stumps on colonization by the large pine weevil (<i>Hyllobius abietis</i> L.)	83
Grzegorz Koziński, Andrzej Nienartowicz Spatial distribution and extent of damages caused by wind storms in tree stands of the Tuchola Forest	89
Jaroslav Holuša, Petr Kapitola Decline of spruce forest and outbreak of bark beetles in Silesian Region (the Czech Republic).	107
Jan Liška, Petr Kapitola The outbreak of <i>Ips typographus</i> in the Šumava National Park (the Czech Republic).	113

Preface

Forests in Poland as a constant wealth of the whole nation, irrespective of their ownership types or protection forms, are under permanent hazard posed by biotic, abiotic and anthropogenic factors. Winds are among natural abiotic factors contributing to the occurrence of bark and woodboring beetles outbreaks in both managed and unmanaged forests in highlands and lowlands. Particular attention should be paid to hazards to forests from phytophagous and cambiohagous insects, the outbreaks of which could affect forest stands not only in managed forests, but also in areas of the National Parks, nature reserves and landscape parks, and the areas of protected landscape.

Pine forest ecosystems in Poland in both managed forests and protected areas are the sites of frequent outbreaks of defoliating pests, including the nun moth *Lymantria monacha* L., pine lappet moth *Dendrolimus pini* L., pine beauty moth *Panolis flammea* Den. et Schiff., pine looper moth *Bupalus piniarius* L., pine sawflies *Diprionidae*, and other species.

The most frequently occurring cambiohages causing tree dieback in both managed and unmanaged forests are:

- in pine stands:
 - bark beetles: *Tomicus piniperda* L., *Tomicus minor* Htg.
 - and steelblue jewel beetle *Phaenops cyanea* F.
- in spruce stands:
 - European spruce bark beetle *Ips typographus* L. and six-toothed spruce bark beetle *Pityogenes chalcographus* L.
- in fir stands:
 - silver fir bark beetle *Pityokteines curvidens* Germ. and European silver fir weevil *Pissodes piceae* Ill.
- in broadleaved stands:
 - Scolytus* spp. and *Agrilus* spp.

From the point of view of social wealth and nature conservation, the early and precise identification of existing hazards is essential to undertake adequate protective activities in accordance with the state-of-the-art and in compliance with the legal provisions on nature conservation in force.

In the recent years, the ecologists in various scientific centres emphasise the changes in ecosystems that result from forest management practices. Exploration of these changes as the result of anthropogenic activity is necessary for an appropriate management in forest ecosystems. Thus, there is a need to compare conditions and threats to various components of biocenoses in both managed and unmanaged forests.

The materials presented during the International Conference titled “Insect Outbreaks in Managed and Unmanaged Forests” which was held in 2003, in the framework of WP 6.1 „PROFOREST” Project, in Malinówka, show a broad spectrum of the issues relating to insect outbreaks in managed and unmanaged forests, both in Poland and the Czech Republic. The conference was supported by the European Commission within the PROFOREST Centre of Excellence (“Protection of Forest Resources in Central Europe”), Regional Directorate of the State Forests in Białystok and Polish Forest Society. The materials present various approaches to the issues considered in both theoretical and practical aspects.

Species composition of the studied insect species groups in the National Parks, strict nature reserves, and managed forests was similar. Their populations were quite differentiated and did not depend exclusively on whether an ecosystem was, or not, embraced by legal protection. So, for example, in the „Biała Ługa” Reserve, the whole epigeic entomofauna, including Carabidae, was more than fivefold less numerous than that in managed forests. Species composition was in similar relation.

Chemical control of defoliators in Polish forests with insect growth regulators should not be used on the sites under legal protection. Also, debarking of stumps after cutting off trees in protected forests is not recommended. It is noteworthy that the Conference provided an opportunity to exchange views on the conservation strategies in managed and unmanaged forests among scientists and practitioners from Poland, Czech Republic, Lithuania and Ukraine.

Andrzej Kolk