EFFECTS OF THE ZOO-ANTHROPOGENOUS IMPACT IN THE CERNA OF OLTEŢ BASIN

EFECTELE IMPACTULUI ZOOANTROPOGEN DIN BAZINUL CERNEI DE OLTEŢ

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Abstract. *This paper presents the consequences of the irrational action taken by man in the Cerna of Olteț Basin lawns (Vâlcea-Romania). In some localities where we made our research, we noticed that the effects of man's actions had the most serious consequences, leading even to ground sinks together with houses or, in the happiest case, only landslips.*

The main directions where one can notice the zoo-anthropogenous impact on nature in the territory under research are: the modification of the natural habitat of some vegetal and animal species; the modification of the ecosystems' structure up to the limit which outruns nature's recovery power; the dryness of the climate because of the deforesting on large areas.

Rezumat. *În această lucrare prezentăm consecințele acțiunii iraționale exercitate de om la nivelul pajiștilor din Bazinul Cernei de Olteț (Vâlcea-Romania). În unele localități din terenul cercetat de noi efectele acțiunii umane au avut consecințe dintre cele mai grave, ducând până la scufundări de teren cu locuințe sau în cel mai fericit caz alunecări de suprafață.*

Principalele direcții unde se exercită impactul zooantropogen asupra naturii în teritoriul cercetat sunt următoarele: modificarea arealului natural a unor specii vegetale şi animale; schimbarea structurii ecosistemelor până la limita ce depăşeşte puterea de refacere a naturii; aridizarea climei datorită eliminării pădurilor de pe mari suprafețe de teren ş.a.

Key words: Cerna of Olteț, zoo-anthropogenous impact.

INTRODUCTION

The term of "impact" is used, in this case, in the sense of naturalness and stability depreciation of phytocoenoses. One can notice both a development of the anthropic impact and a decrease of naturalness degree.

The quality alteration of the environment factors, as a direct or indirect influence of human activity or natural factors, was obvious in the studied territory due to the appearance of some ecological unbalance, more or less serious.

This impact is not an invention of modernity. What is modern is only the unseen intensity of their practice directions and the danger which has been created because of their extinction. All life environments and biotopes are affected and for the time being we cannot reduce the effects but, on the contrary, we can notice an exponential increase.

MATERIALS AND METHODS

In order to write this paper, we started with the flora and vegetation study of the region in 2001 and we continued it until now, working a lot on the field in every season and vegetation periods. The information collected on the field, referring to human action on nature and especially the negative consequences which came out of it, makes the object of the present paper.

RESULTS AND DISCUSSIONS

Nowadays, the beginning of landslides and landsinks, in the Cerna of Olteț Basin, happened, first of all, during the years in which the quantity of rainfalls in some periods outran by far the multiyearly average of those months. A similar situation was noticed in 2004-2005. During these years, on the Cerna River and on its main tributaries, some catastrophic floods happened, which modified the banks balance because of the lateral erosion increase.

The first observations on man's negative action against nature in the basin were made in the spring of 2004, when because of the many rainfalls numerous landslides and landsinks happened (fig. 1.).

Fig. 1 - The effects of the zoo-anthropogenous impact in Lăpuşata localities

The days that followed these erosion processes, as an effect of the diminution of rainfalls, the landslides diminished in intensity. Their effects consisted in local farms destruction, being a continuous danger for the dwellings situated at only 25-30 m from the terminal bank.

Even if the chronological period in which the landslides in the Cerna of Olteț Basin happened is short, we can draw a series of conclusions about the rhythm and the factors of the morphological evolution.

The main factor which determines the landslides in the studied territory is the water from the rainfalls and from the snow melting.

The moving of the slippery lands happens distinctively according to the level of soakage with water and to the slope inclination.

We can notice an alternance between intense displacement periods because of the field overwetting and periods of slow movement or of relative stability in which the settling processes dominate.

After the landslides, the relief characteristics are modified. The landslide presents a longitudinal profile in stages and transversally irregular, generally in a U shape. The substratum in which these landslides happen is intensively modeled.

The landslide frequency in the region imposes the elaboration of special studies which can be useful directly to the activities concerning their elimination.

The upper part of the studied territory is afforested while in the lower part, the areas with forests alternate with the ones with lawns and orchards.

At present, the lawns from the lower part of the studied territory contain the less fertile fields, which hardly can be used for another purpose.

The lawns from the hilly regions have a secondary origin, replacing the common oak and beech forests which in the past covered large areas and which in time were deforested in order to obtain new farming fields.

The soil low level of supply with accessible elements for the plants created insufficient conditions of nutrition, which cannot be improved only by using fertilizers or organic manure. The application of the manure to lawns has a great effect on the plants but also on the ground, when speaking of physical-chemical characteristics.

The main problem is not the so-called grazing but breaking some rules in its organization. The excessive grazing associated with prolonged drought have modified the physiognomy and the continuity of the grass and have diminished the capacity of lawns of sustaining the nutrition of herbivore animals. This fact can be noticed at the Sub-Carpathian depression level in the Cerna of Olteț Basin where the lawn grazing on certain areas for a long period of time has produced obvious modifications in the floristic composition and indirectly, in the fauna. The plants which are valuable from the nutritional point of view have been replaced by plants with lower nutritional value and refused by animals. Because of the excessive grazing, the plants resistance to frost diminished and as a result, the vegetal cover is damaged and gets rare – this fact favors land erosion due to the wind and water action. This phenomenon can be noticed in Cernişoara where because of both excessive grazing and high humidity, the erosion process has become more obvious.

The complexity of the activities in the petrol extracting industry makes the sources of pollution be more serious, including not only the pollution sources because of the human activities but also the specific pollution sources. As these last sources account for the largest part and the infesting effect has a negative and lasting impact upon the environment factors, these sources are clearly identified and we take into consideration possible modalities of action on the ecosystems.

One of the most powerful impacts of this kind performed by man on the studied field can be noticed in the village of Lapusata. Here, years ago, some derricks for the crude oil extraction were installed but now these are closed. Even if crude oil was replaced by brine in the autumn of 2004, some serious landslides happened. The main cause which determines this phenomenon is the appearance of gaps when extracting the crude oil. Another cause is represented by the abundant rainfalls of that period. The effects can be noticed not only on the vegetation but also on human being because of the destruction of electrical network, of households and regional roads.

The abandoned derricks and pumping, treating and injection stations can damage the environment because of the drilling-extraction traces and sometimes, even by gas emanations.

We do hope that life and practice will teach man how to find the best ways to protect the vegetal carpet against the negative influence of pollution, to conserve nature and the freshness of its natural factors.

CONCLUSION

This paper presents the consequences of the irrational action taken by man in the Cerna of Olteț Basin lawns (Vâlcea-Romania). In some localities where we made our research, we noticed that the effects of man's actions had the most serious consequences, leading even to ground sinks together with houses or, in the happiest case, only landslips.

REFERENCES

1. Bădescu G., 1972 - *Ameliorarea terenurilor erodate corectarea torenților combaterea avalanşelor*. Edit. Ceres. Bucureşti.

2. Botnariuc N. & Vădineanu A. ,1982 - *Ecologie*. Edit. Did. Ped. Bucureşti.

3. Ciplea L.I. & Ciplea Al., 1978 - *Poluarea mediului ambiant*. Edit. Tehnică. Bucureşti.

4. Cristea V. & Csűrös Şt., 1976 - Contrib. Bot. Cluj Napoca.

5. Păun M. & al., 1972 – *Pajiştile din zona subcarpatică a Olteniei*. Edit. Scrisul Românesc. Craiova.

6. Puşcaru Soroceanu Evdochia & al., 1963 - *Păşunile şi fânețele din R. P. R.* Studiu geobotanic şi agroproductiv. Edit. Academiei Române, Bucureşti.

7. Resmeriță I. & Texter D., 1956 - *Agrotehnica pajiştilor degradate*. Edit. Acad. R.P.R. Bucureşti.

8. Váczy C., 1980 - *Dicționar botanic poliglot*. Edit. Ştiințifică Enciclopedică. Bucureşti.