The International Year of Forests in the North-eastern Ukraine: establishing of long-term program on forest biodiversity conservation

Final report

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Summary

This project was targeted to conservation of old-growth forests in the forest-steppe zone of eastern Ukraine. The amount of clear cuts is increasing here and it is a tendency of old growth natural Oak forests to disappear in the foreseeable future.

To describe briefly the main results, we take information about rare species distribution and main threats for the habitat existing. Information about rare species occurrence in some areas give a foundation for territorial conservation. Knowledge of main threats for habitat is a key to conservation management and recommendation to species / environment conservation.

Contents

Introduction and objectives

Oak (*Quercus robur*) is one of the most widespread forest-forming species on the border of Forest and Steppe zone in Ukraine. Forests here grow on the edge of the suitable for them climate zone (Novikov, 1959). The precipitation rate in Steppe zone limits forests to occupy large areas that is why they are fragmented and unevenly distributed here. During last three centuries forest-steppe oak forests underwent strong reduction and rejuvenation. Natural old-growth stands (with the mean age more than 120-140 years) left here only in some forests, distant from populated places.

In the second half of XX-th century there was a period when the rate of logging here sufficiently decreased. But during last two decades rates of clear cuts here have been substantially increased again, this can be clearly seen by comparing satellite images obtained in different years (fig. 1). It looks strange because almost all forests in this zone have protected status and should not be minimally used for harvesting purposes. According to the results of project ENPI-FLEG in Ukraine (http://fleg.org.ua/) main amount of logging here connected with improvement cuttings (are caused by caring/health of stands) and legally are not aimed to harvest wood (Popkov, forest cuttings in Ukraine). But in fact the main purpose of these cuttings is obtaining commercial timber. These procedures can be both clear cuts and selective cuttings. The main problem of forest conservation is that these cutting types are allowed even in nature reserves and are not planned centrally. Forest harvesting and sanitary forest cuttings in Ukraine are limited only in some high-level protected territories (less than 5% of total forest area). Cutting of old-growth high forests is the most profitable way according to this scheme.

During our work in “Gomilshansky Lisy” National Park (Kharkiv region, Eastern Ukraine) we have appraised methods to prevent cutting of certain forest territories by means of approving presence of red-listed species there. Ukrainian laws protect habitats of rare species, but there is a lack of real-time data on their distribution and population status. This problem prevents implementation of such laws in practice. Data about presence of protected species have to be included in forest taxation databases. In the plans of silvicultural practices, which we obtained from forestry organizations in response to our inquiries, there is a special column named “Presence of red-listed animals and plants”, but it was always empty. So the main idea is to prove the presence of these protected species in any official way.

We worked with The Governmental Cadastre of Animal World of Ukraine. Among other cadastres (of Plant World, for example) it is the only effectively working one. The main idea is to inform the Governmental Cadastre of Animal World of Ukraine about locality of Red Listed species. After that, the Cadastre Service informs the local forest districts about presence of this species, measures on its protection and amenability for the habitat destruction. This scheme was used in the early stages of “Gomilshansky Lisy” and “Slobozhanskiy” National Parks (Kharkiv region) creation to protect the most valuable sites.

The first objective of our project was to create the network of small protected patches in old forests in Eastern Ukraine near the southern border of the forest zone. This will provide conservation of the most valuable forest habitats outside the Nature Reserves and National Parks under the increasing logging activity.

According to the second objective we aimed to include data obtained by us to the forest taxation databases. It is stated that the main reason of biodiversity data absence in these databases is the lack of governmental financing. So our idea was to give these data for official forestry organizations without any financial expenses for them.

The third objective of our project was to provide a wide publicity of local forests conditions and to popularize ideas of forest conservation. We wanted to start up the small project – the website "The nature of Kharkiv region" where we could highlight information about the nature, environmental problems and research or conservation projects focused on its nature.

a. 01.09.1992 **b.** 28.06.2009

*Fig. 1. Comparing of two Landsat images of oak forests near the city of Kharkiv in different years. Image **a** shows no fresh clear cuts. Light green patches indicate young stands remained from clear cuts in 1930-1960-th. Image **b** highlights increasing of cutting rate during last 20 years. Clear cuts are associated with old growth stands.*

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To conduct a field survey in a series of forest patches			+	Within the project we have visited and surveyed 280 forest compartments with total area of 110000 ha in 32 forests ranging from 20 to 15000 ha. Description for each patch was made according to the developed scheme. We created a GIS-database, where all these descriptions are combined with appropriate maps.
To visit territories which were previously entered to the State Cadastre of animal World in order to inspect the regime maintenance			+	We have visited 40 forest compartments which were entered to the Cadastre in 2008-2010, total area of these plots is about 500 ha. We found 2 "hot spots" where forestry's planned cutting or it had been already done despite they were officially informed.

To record rare species and species included in the Red Data Book of Ukraine and Red List of Kharkiv region			+	We have recorded 82 animal species on 445 points. Main part of registrations made birds of prey and bats.
To involve professional biologists			+	We have involved 9 persons from 5 organizations (Kharkiv National University, Interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”, National Nature Park Gomilshanski lessy, National Nature Park Dvorichanskiy, I.I. Schmalhausen Institute of Zoology (Kyiv), University of Wroclaw). Such fields of science as ornithology, malacology, herpetology, bat research, botany and mycology were represented.
To involve youth (school children and students)			+	In general 12 volunteers has taken part in our expeditions. Among them were students of Kharkiv National University, young naturalists from Kharkiv Zoo and Kramatorsk (Donetsk region). We also carried out a seminar concerned to the conservation of forest biodiversity for school children in Zoological Garden of Kharkiv.
Data transferring to the Governmental Cadastre of Animal World			+	Data base on rare species and their habitats with specification of specific forest compartment and stratum were transferred to the Ministry of Ecology and Nature Resources. Recommendations regarding conservation of that species and restrictions of forest management on these patches were also submitted.
Creation and development of web-site		+		We created the web-site concerned to the Nature of Kharkiv region and at the moment we are working on its content (writing reviews).

Project team

Stanislav Viter. Project leader.
PhD in Zoology, scientific employee of Interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”. Biological research institute, Kharkiv National University; head of the department of science and monitoring, National nature park “Gomilshansky Lisy”.

Experienced field researcher and conservationist. As s project leader, Stanislav provided overall coordination. His field research consisted of finding, recording and mapping birds of prey and their nests, also similar work was conducted with reptiles and several species of rare insects.

Anton Vlaschenko
PhD in Ecology, head of the Interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”

Anton provided field research in theriology, one of his objectives was counting of bat fauna. As all bat species are included in the Red Data Book of Ukraine, and bats are highly dependent on forest condition, this group was in focus.

Yegor Yatsjuk
PhD in ecology, scientific employee of interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”

Yegor was the co-organizer of project activities. He provided field research in forest ecology (descriptions of forest patches) and ornithology. He also developed the database mentioned further.

Sergei V. Vlaschenko
PhD in zoology, scientific employee, National Park “Gomilshansky Lisy”.

This experienced researcher made a valuable contribution in studying of entomofauna of old-growth patches (species identification).

Natalia Saidakhmedova
Scientific employee of interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”

Natalya is a well-known, very experienced botanist and conservationist. She provided great help in plant identification, mapping of rare species and geobotanical descriptions of forest patches.

Irina I. Morozova
Scientific employee of interdepartmental research laboratory “Study of biodiversity and development of nature reserve management”

Irina conducted research in the field of mycology. She had identified a series of xylotrophic ascomycetes, associated with decaying wood. Some of those species are probably rare and should be included in regional and national Red Lists.

Methods

Project activity has taken 18 months from 01.09.11 to 01.03.13. The overall scheme of our work was the next:

1. Field investigation of old forests.
2. Creating of database of rare and protected forest species distribution.
3. Entering these data to The Governmental Cadastre of Animal World of Ukraine and forest taxation materials.
4. Informing of public about the project flow.

We concentrated our efforts on forest territories where no research program have previously been conducted. Main efforts were made to investigate large forests. We had investigated 28 forest compartments with total area 50000 ha (each from 20 to 16000 ha). The total number of field days was 82. The extent of human disturbance on these areas also varied (these areas have been subjected by more or less intensive thinning procedures, recreation, grazing etc.).

Main part of old growth stands is situated in large forest territories more than 8000 ha. We spend most time surveying these territories so we had visited each of large forests during three seasons: spring, summer and autumn. Small forests where been visited only in summer. We used forest taxation materials to find the most old growth territories in each forest and satellite imagery (recent Landsat images were obtained by TerraLook program) to track recent clear cuts.

Our work was based on the concept of high conservation value forests (HCVF) according to FSC practice. Its recommendations include revealing forest types with their territory decreasing and subjected to the human impact. Among the great variety of HCVF types we had chosen the most old-growth natural oak stands.

Besides official forest taxation data were available for us, this information doesn't cover all important features, so we have to evaluate them by ourselves. While visiting these territories we have paid our attention on the availability of the traits characteristic to natural forests. Our form of description included such parameters as:

- Relief features (elevated plain, slopes of ravines or river valley, valley bottom)
- Forest type
- The graduated amount of dead standing trees and its type (availability of very big trees, trees losing its bark)
- The graduated amount of fallen wood and representation of different decay stages
- Space structure of forest (representation of forest gaps, their structure)
- The availability of wild boar trenches in the forest litter
- The time of last sanitary cutting in each old forest plot.

There are 87 red listed species of terrestrial vertebrates and 106 more which are regionally protected. We focused on the next groups of vertebrates: bats, birds of prey, reptiles. We used mist netting to evaluate bat fauna, visual observations and searching of nests to assess birds of prey and visual searching of reptiles. Among invertebrates insects (mostly Lepidoptera and Hymenoptera) and ground snails were chosen as target groups. Data about all other groups were collected in parallel with target groups.

All data about species distribution had two types of reference: geographical coordinates and reference to forest territories up to forest compartments and forest strata. We have created our own database comprising two types of references and obtained data about species status on each territory. It will

promote adjoining of these data to the official databases like The Governmental Cadastre of Animal World and forest taxation databases.

In the part of entering of our data to official databases we relied on two most powerful conservational NGOs in the Eastern Ukraine: National Ecological Centre of Ukraine (NECU) and Pechenegy. They promoted official correspondence with forestry organizations and highlighted the project flow. Also they had preliminary agreement with the Ukrainian board of forest management that this organization is ready to accept data about forest biodiversity from scientific groups.

Main accent will be made on large forest massifs. For each massif we will request forest taxation data from local forest districts, it will allow us to focus on old forest patches and their neighborhoods immediately. Within our project we will investigate typical forests of the region: oak forests (77% of the area, 21 massifs) and pine forests (23% of the area, 3 massifs). During our fieldwork we will search for rare animal species. Presence of Red-listed animals can argue protecting of their habitats. We will focus on the next groups: butterflies, beetles, reptiles, birds of prey, bats. On each forest area we will estimate status and population size of rare species. We will use only non-invasive methods – without removal specimens out of environment. Also in all old forest territories we will describe plant communities, search for rare species of other groups of living organisms and assess the state of rare plant communities. It will take us from 3 to 15 field days for each forest massif depending on its area.

In October-November 2011 we are going to visit territories which were previously entered to the Cadastre in order to inspect the regime maintenance. Volunteer groups of students and conservationists will be involved in this activity.

Revealing of rare animal species will be used as ground for conservation measures on forest patches. Recommendations for forest management will be given separately for each patch.

Our strategy will be based on 2 main principles: the scientific and the public one. Scientific principle will be realized as our conservational activities using metapopulation biology concepts – namely creation of protected forest patches network.

The public one will be the highlighting of problems or forest management and conservation in Ukraine. This part will include creation of the Internet site “The nature of Kharkiv region” (October 2011 – March 2012) and publication of papers about forest conservation in local media. The key moment of our project realization will be the broad involving of people who are concerned about nature conservation.

Table 1

Surveying of old growth forest territories more than 150 years in the territory of Kharkiv region.

Forest age	Total area, ha	Previously syrveyed area, ha	Area surveyed during the project flow, ha	Total share of surveyed territory
>200	8,3	0	0	0%
180-200	353,4	0	306,3	87%
160-180	302	25,6	142,8	56%
150-160	262,6	129,2	23	58%
Total	926,3	154,8	472,1	68%

Main conservation results

We have gathered the team of young field biologists. It is one of the first cases of forest research team completely independent from the Government of Ukraine. Our team has demonstrated the effective work in the field of forest research and conservation, for only one field season we have obtained a body of information about forest biodiversity of studied areas. Gathering of such team is the real success of the project and the key outcome. Our experience concerning independent forest biodiversity research is very important for providing changes to Government forest management in future.

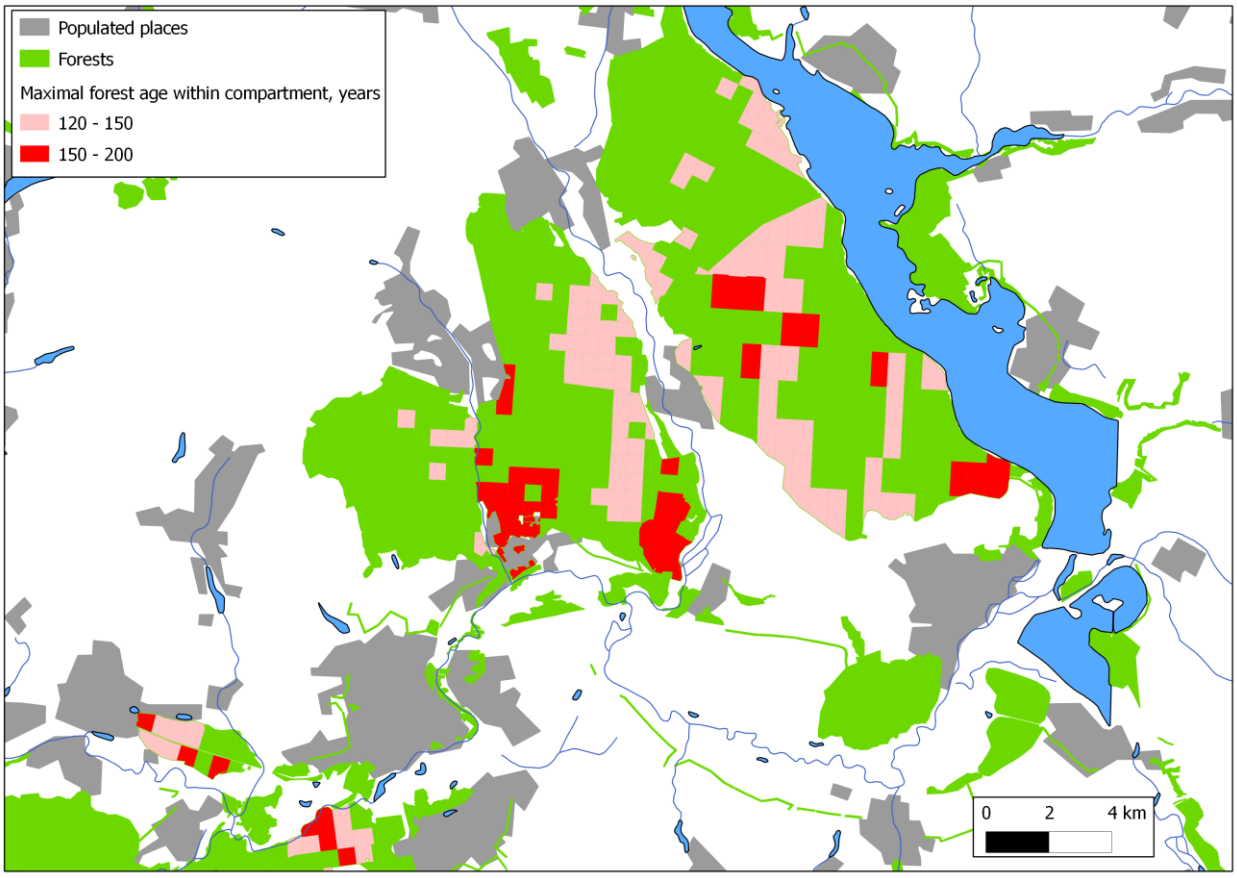
We have concentrated in our hands a large amount of data including forest taxation data and information about forest state in studied region; also we have some progress in analysis of forest management standards. We have created a database including the occurrences of rare and protected species of animals, plants and fungi. It will help us to collect such kind of data in future and to process it more quickly. This GIS database includes more than 2000 records; each record has geographical connection and connection to certain forest compartment and stratum. It is not a great number for any European country where such data bases include millions of records. But in Ukrainian scale it is quite large database because our records constitute no less than 5% of full Governmental Cadastre that includes near 40 000 records.

We have submitted large amount of data from our database (almost 1200 sites of 53 species distribution) about protected species distribution to the Kharkiv branch of Ukrainian board of forest management. These data must be submitted to the forest taxation databases and it will be an official confirmation of presence of these species. We expend special effort formulating restrictions to forest management depending on which species had been inhabited on each forest plot. These restrictions varied from limitation of forest management practices to certain periods of the year to total ban of all measures.

During 2013 these data from Ukrainian board of forest management will be given to all forest districts and we are going to control implementation of our recommendations.

We created the web-site concerned to the Nature of Kharkiv region (http://www.slobnature.in.ua/) and at the moment we are working on its content (writing reviews). Also National Ecological Centre of Ukraine (NECU) and Pechenegy organizations highlighted certain details of the project flow on their web sites.

Scientific results



Firstly we have found that most of these forest territories are situated in the middle of forests or at least at the maximal farness from populated places. To understand it better we must remember that in the history of the second half of XIX and XX-th centuries a lot of forests near the villages were cut by peasants and mainly young ground oak forests were dominated. Later on, during the first half of Soviet period a large amount of old forests were clear cut. Most of modern old oak forests were 70-140 years old stands at that time. The largest forest plots among well-preserved since that time have been preserved because they were parts of park complexes, experimental plots for forest management or genetic reserves for future cultivation. In all these cases certain forestry measures were carried out there and forest thinning had the main impact. Only on steep slopes of forest ravines where it is hard to remove these woods we found sufficient amount of fallen wood on different stages of decay.

Also during our work we have found that another usage type of forest land has great impact on the current state of our forests – usage as pastures for cattle by local people. Although it was forbidden by the law even in soviet time people sometimes herd cows and goats in forests near the villages and it occurred in much greater extent in the times of Russian Empire up to the early 1920-th. We found traces of herding in the age structure of forests, absence of certain broad leaved tree species and depleted shrub species composition.

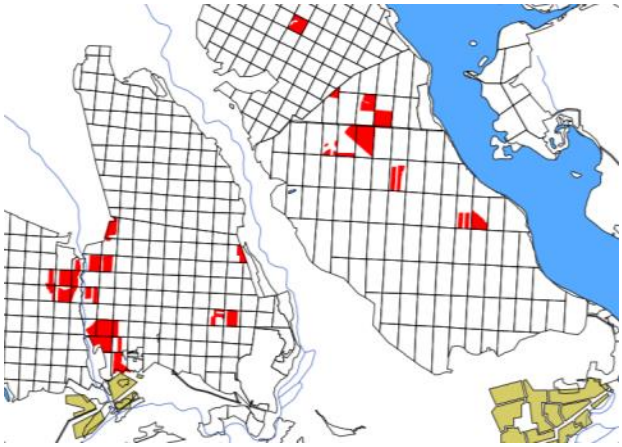
Measuring of big fallen Oak tree.

Large amount of fallen wood and old avellan bush – among characteristic elements of old oak forests.

On the second stage of our project we have approbated our form in the field conditions. Almost all expeditions were conducted cooperative with members of the project 'The International Year of Forests in the North-eastern Ukraine: establishing of long-term programme on forest biodiversity conservation', supported by Rufford Foundation, who also fulfilled this form and helped us very much.

Bird's-nest Orchid (*Neottia nidus-avis*) – red listed plant found in one of the most old growth oak forest in Kharkiv region during our expedition.

Our expeditions during this year have revealed several important points. Firstly, although all forests belong to the State Forest Agency, the amount of cutting and management type has some differences in each forest. For example, the maximal area of old forests remained in Chuguevo-Babchanskiy forest 30 km east of Kharkiv, but the amount of sanitary cutting there is very high and it makes strong impact on forest structure. As opposed to it, in Kozijivsky forest 80 km west of Kharkiv there are very few old forest patches left and their territory is decreasing rapidly. But when we visited these small patches we were pleased by its structure and the amount of dead wood there.



Screenshot of GIS map, created by us, showing some old oak forest patches visited by our team in the 2012 field season.

The second point is that the most of old forest territories in our region are formally included in different small scale nature reserves (zakaznik – in Ukrainian). The necessity of protection of these territories is declared by their statements but in fact different types of forest cuttings including clear cuts are conducted there. So special measures to protect them are needed.

Very important stage of the project (which is not completely finished at the moment) is the processing of collected data. We have developed the database accompanied by bound map of Kharkiv region, displaying all forest territories, all forest nature reserves, findings of rare species and descriptions of our old forests. For that purpose we used QuantumGIS package – free powerful mapping software.

At the moment we continue input of our data to this database. After finishing that particular project database developed by us will nevertheless be filled with data provided by our co-operates.

The last logical stage of our project will be the assessment of value of surveyed forests for biodiversity conservation. We will allocate the most valuable patches and will make grounded propositions to include these areas into the network the Specially Protected Forest Sites. This stage work will also be conducted in cooperation with Rufford team and also with several conservational NGO's. We hope that this stage will be done during next years.

Mycological results.

Our investigations deals with discomycetes, which are formed a specific group of Fungy. Among them there are many wood and litter-inhabiting saprotrophic species. Such species were the subject of our investigation, on the investigated territory we have revealed X species associated with dead wood.

As the results of our investigation 2 articles and 1 thesis were published:

Morozova I.I. Discomycetous fungi from the Kharkiv region new for Ukraine. Turkish Journal of Botany. In English. Status: accepted, processed.

Morozova I.I. First data about discomycetes of Mochnach forest massif, Kharkiv region. Ukrainian Journal of Botany, In Ukrainian with annotation in English. Status: reviewing,

Morozova I.I. First data on discomycetous fungi of NNP 'Slobozhansky' and its vicinities, Youth and Progress of Biology. Abstracts book of the VIII international scientific conference for students and PhD students April 16-19, 2013, Lviv. Status: in press.

Ornithological, entomological and herpetological results.

Inventory of rare species - butterflies, beetles, snakes, **Raptors** - and recommendation to their territorial conservation are the most significant result. We found mire that 60 nest sites (n.s.) of Booted Eagles (*Hieraaetus pennatus*), 30 n.s. of Eastern Imperial Eagle (*Aquila heliaca*), more than 150 n.s. of Common Buzzard (*Buteo buteo*), about 100 n. s. of Long-legged Buzzard (*Buteo rufinus*), 80 n.s. of Honey Buzzard (*Pernis apivorus*), 26 n.s. of White-tailed Sea Eagle (*Haliaeetus albicilla*), 80 n.s. of Black Kite (*Milvus migrans*), about 120 n.s. of Northern Goshawk (*Accipiter gentilis*), 150 n.s. of Eurasian Sparrowhawk (*Ac. nisus*) and about 90 n.s. of Hobby (*Falco subbuteo*).

The results of our research were used to develop the law, which obliged the national parks to allocate a buffer zones near the Raptors` nests. The relevant law was adopted by the Ukrainian government in July 2015. We also developed and justified the "law of silence". According to this law, all forests of Ukraine on the nesting period (from March 1 to June 15) is forbidden to carry out any type of cutting.

Determine such security zones: for the majority of Raptors species - the radius of 300 meters, for Eastern Imperial Eagle and Lesser Spotted Eagle (*Aquila pomarina*) – 400 – 500 m, for White-tailed Sea Eagle – 650 m, for Greater Spotted Eagle (*A. clanga*) – 1000 m.

The main negative factors for Raptors populations are: old trees / forests logging, disturbance during forestry work (in the breeding season).

All of these nest sites were included to the State Cadaster of Fauna of Ukraine.

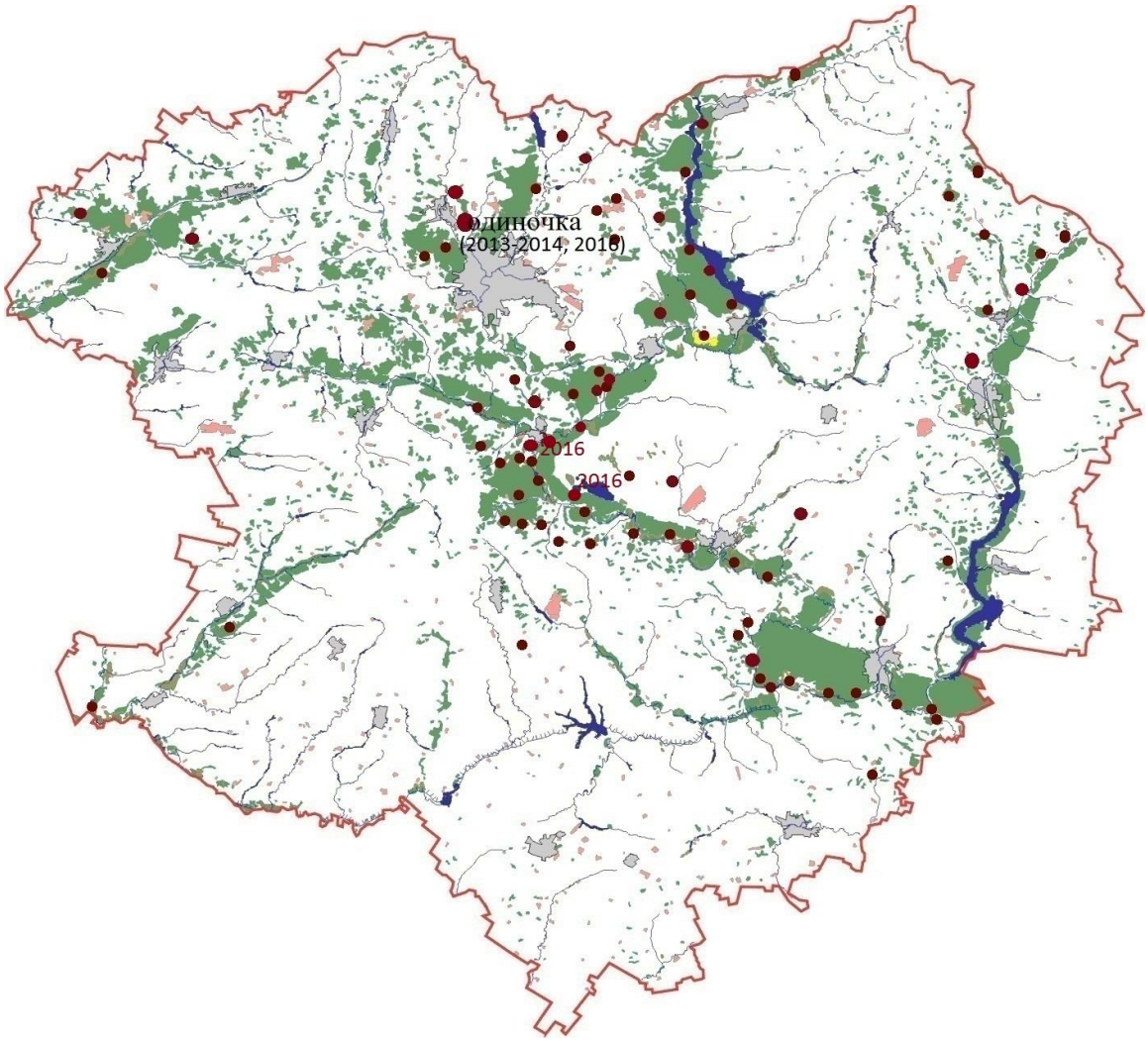
According to the results of studies it has been written 4 scientific articles (Journal of Raptors Conservation). For example:

http://rrrcn.ru/ru/archives/25757

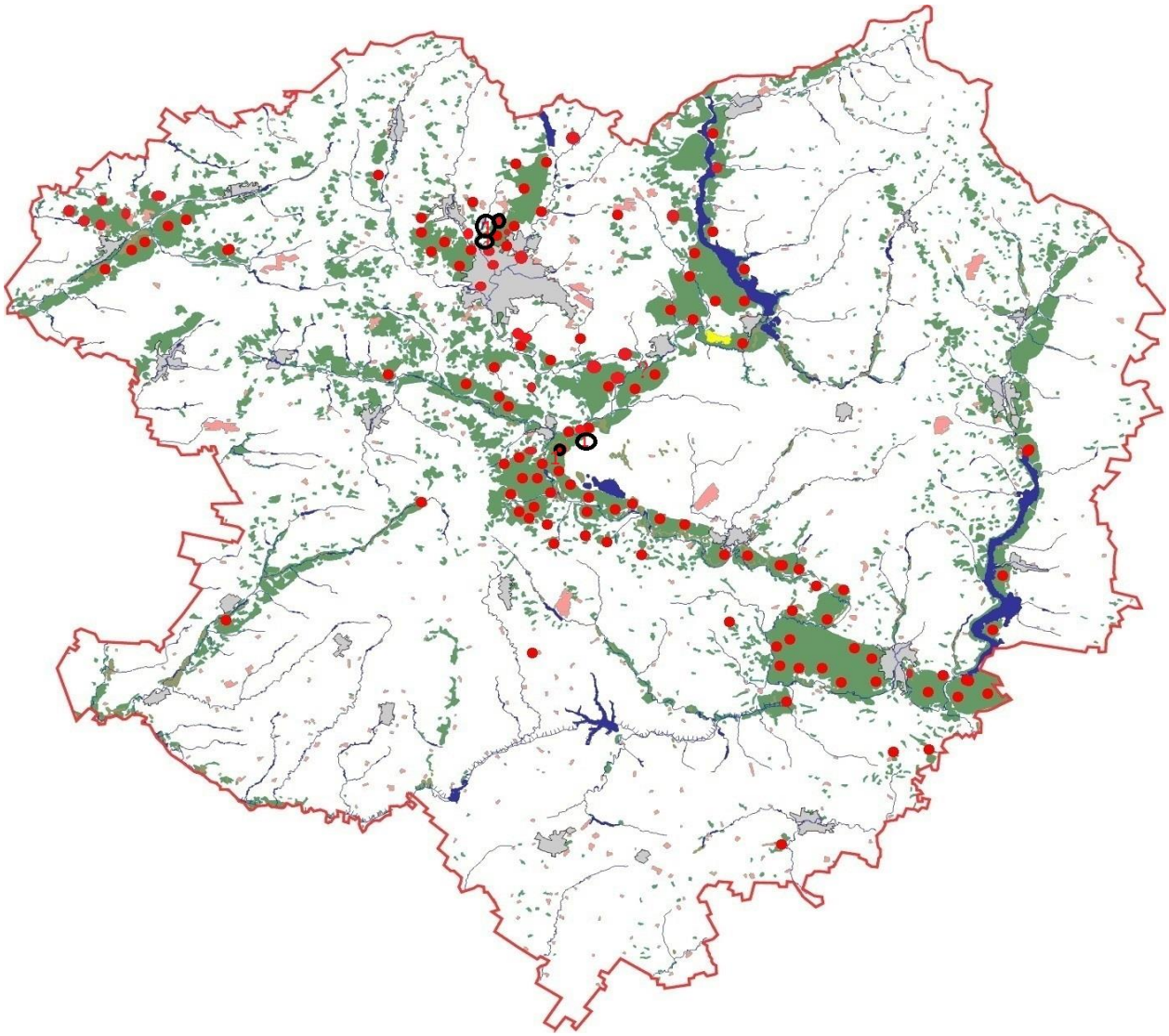
http://rrrcn.ru/ru/archives/25588

http://rrrcn.ru/ru/archives/21149

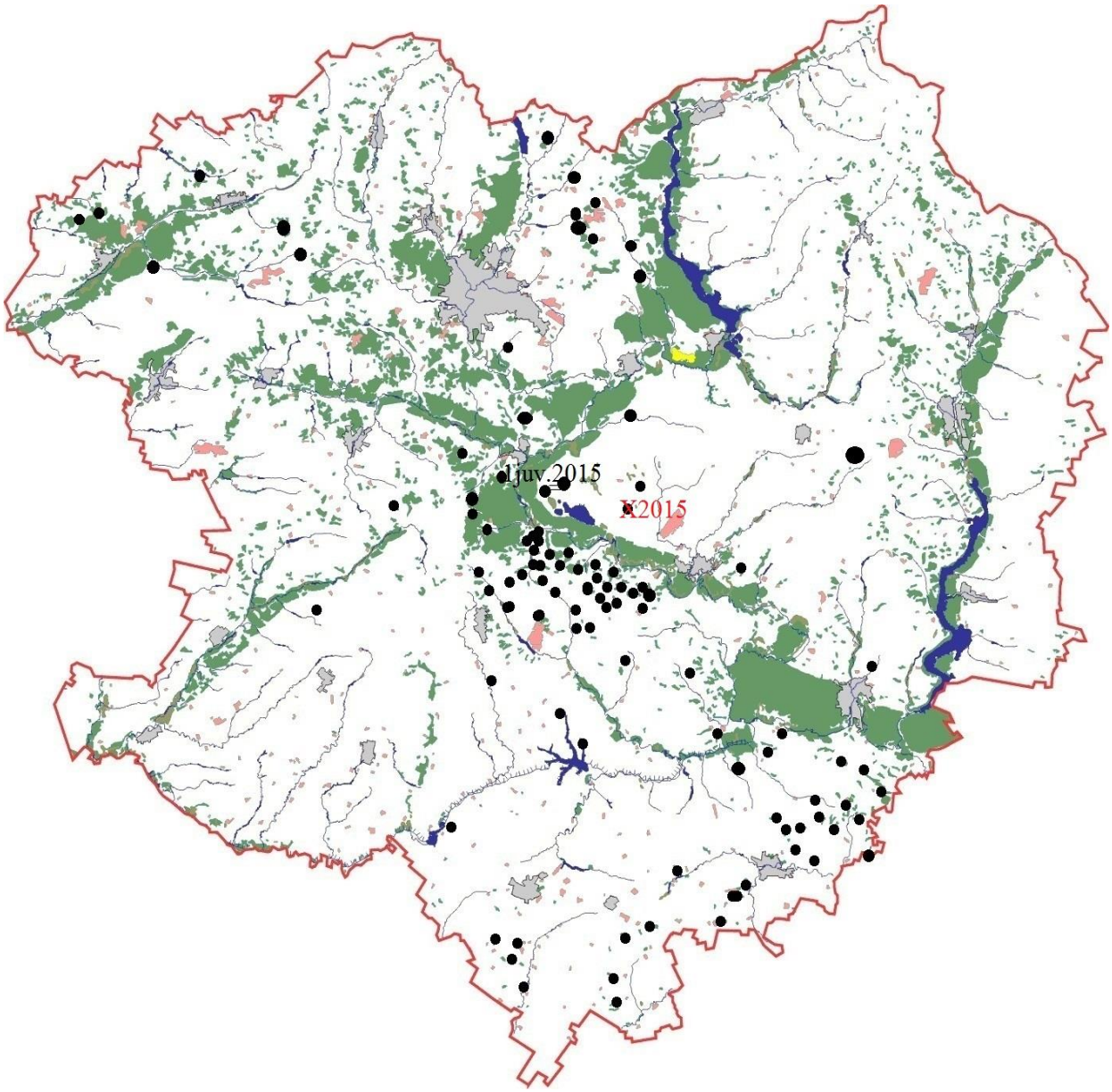
http://rrrcn.ru/ru/archives/25963



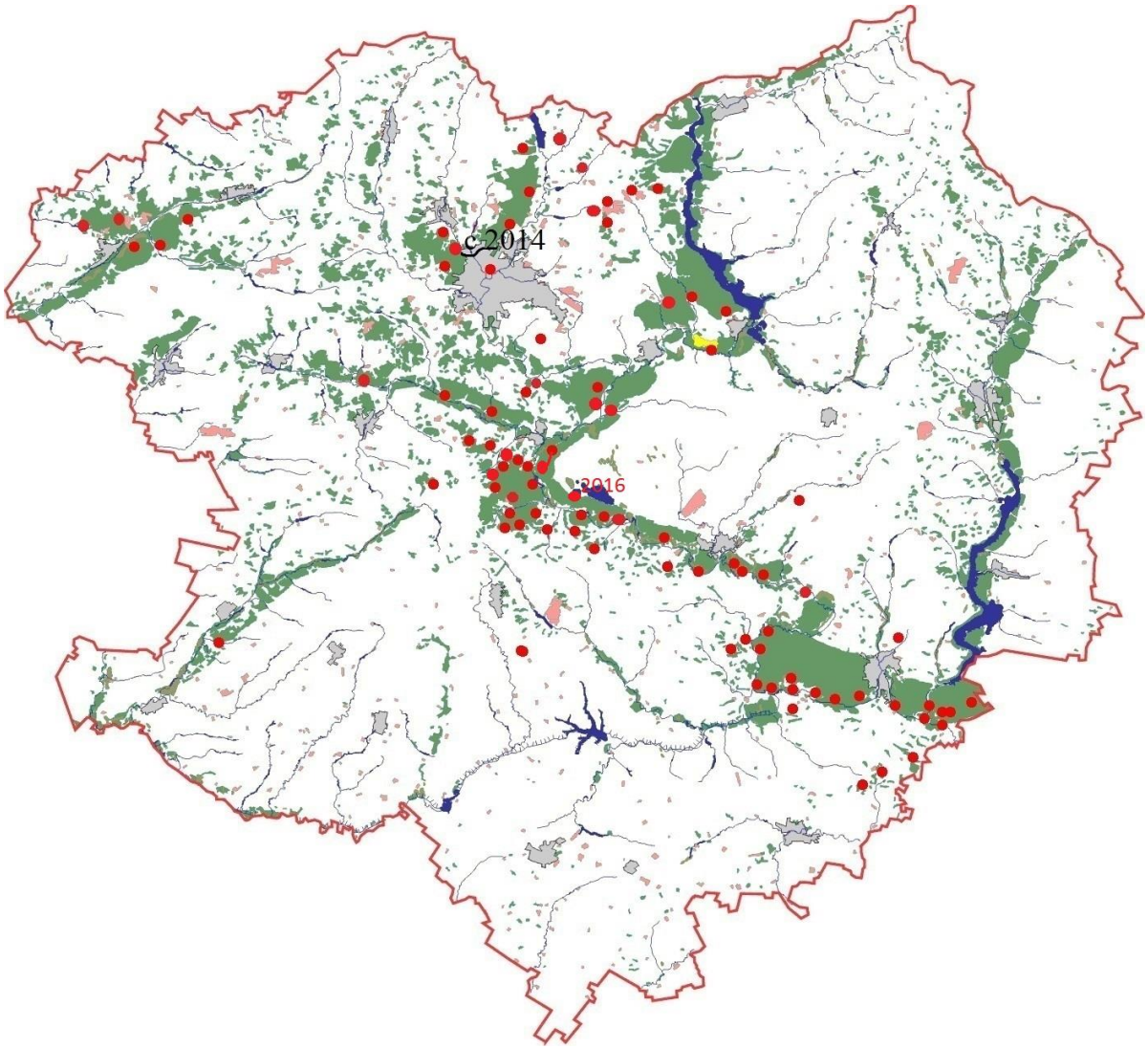
Booted Eagle (*Hieraaetus pennatus*) nest sites in Kharkiv region, Ukraine.



Northern Goshawk (*Accipiter gentilis*) nest sites in Kharkiv region, Ukraine.



Long-legged Buzzard (*Buteo rufinus*) nest sites in Kharkiv region, Ukraine.



Honey Buzzard (*Pernis apivorus*) nest sites in Kharkiv region, Ukraine.

We were the first in the last 50 years have been discovered such rare insects, as **Great Capricorn Beetle (*Cerambyx cerdo*) and Hermit Beetle (*Osmoderma eremita* + *O. barnabita*)**. The study of the ecology of these species allowed the development of recommendations for the protection of their habitats. These recommendations are used in the planning of forestry in national park “Gomilshansky Lisy” and also used for law regulation in the forestry of Ukraine (such a bill is under consideration by the relevant parliamentary committee).

The main threats to these species are: the removal of hollow trees, removal of drying oaks (with 40 cm trunk diameter).

Also we were made up a cadastre list of areas with high diversity of **butterflies and moth** species and where the rare species of butterflies were found.

The main threats to these species are: the use of pesticides in forestry, the replacement of natural forests by monoculture, plantations in clearings deep in the woods, clearing the bush in the lower tiers of the forest during the logging.

We have also carried out a full inventory of habitats of **smooth snake (*Coronella austriaca*)** in Kharkiv region.

The results of ornithological, entomological and herpetological researches were using in the development of studies on the establishment of natural protected areas (1 new national park, the expansion of the territory of national nature park "Gomilshansky Lisy" and NNP "Slobojansky", 2 regional parks, 2 natural reserves).

Collaboration

We collaborated with a series of NGO's and governmental organizations. First of all 2 organizations should be mentioned: The National Ecological Center of Ukraine (NECU) and the ecological group "Pechenegy". Both of these groups are NGO's. They are experienced in working with Ukrainian officials and they made lots of effort to forest conservation in Ukraine.

Ecological group "Pechenegy" is based in Kharkiv region (http://pechenegy.org.ua/uk). Amongst other activity they are dealing with forest conservation, detection of forest law disorders by forest districts, informing of publicity, realization of conservation campaigns. Members of this organization took part in some of our expeditions, prepared information requests about logging plans of forest districts in Kharkiv region. When we noticed infractions of forestry laws they made stinking letters in ecological inspection. Some articles about problems of old forests cutting were published on the web site of this organization.

National Ecological Center of Ukraine is based in Kyiv. It is well-known countrywide NGO working since 1991. It struggles for preservation of wild nature of Ukraine organizing protest actions, working in the sphere of legislation and ecological education. This organization, in fact, maintain The State Cadastre of Fauna of Ukraine.

Collaboration with volunteers and other researchers.

We engaged young naturalists from Kharkiv and Kramatorsk (Donetsk region) to take part in our field activities. In total 9 persons had visited us in the field and help us describing forest plots and searching of rare species.

Students of different specializations from V.N. Karazin Kharkiv national university took part in our expeditions. They both help us in field investigations and made special research work. For example research of Coleoptera fauna (Marya Salnytska), Hyxomycetes and Hyphomycetes (Olga Pukovetska, Oksana Zlenko). Student Anton Savchenko has realized small project "Old-growth oak forests as critical sites for biodiversity conservation near the southern border of forest zone (Eastern Ukraine)" supported by The Youth Activity fund of The Explorers Club. This project was aimed to approbation of forest description methods in old growth forests. Also he helped us to develop and fill our database. Student of Wroclaw University, Ksenya Kravchenko, took part in inventarization of bat fauna in old growth forests.

We started joint research of ground snails with Igor Balashov – malacologist from I.I. Schmalhausen institute of Zoology (Kyiv).

Collaboration with National parks.

National parks "Slobozhansky", "Gomilshansky Lisy" and "Dvorichansky" are strategic partners of our group. Scientific employees of these national parks took part in our expeditions and give us informational support.

During our expeditions we communicated with lots of local people. The most of locals use surrounding forests for small-scale hunting, mushroom gathering, recreation etc. Nowadays rates of cutting significantly exceed the necessity of local communities in wood, furthermore, the most attractive and productive areas are destroyed. Therefore we often faced with negative relation to forest cutting from local communities – especially when there was a talk about old forest areas, which are often well-known to locals and have also somewhat historical heritage. But almost no one from locals knew anything about possibility to protect these areas from cutting and we see that most of them will never spend their efforts to counteraction to these increasing rates of clear felling. These people need to know more about their rights and mechanisms of public control of forest management.

Also it worth to be said that a lot of local people truly believe that forests can only exist under continuous logging pressure with removing of dead trees and control of “pest” number (wood decaying fungi, saproxylic beetles etc.) by people. These ideas need to be changed in public consciousness.

Financial report

Item	Budgeted Amount	Actual Amount	Difference	Comments
Garmin GPSMap 60 cx	335	238	97	
Sony Alpha 700 (used)	390	398	-8	We choose Sony camera because we are already had some lenses and other stuff for this model.
Sony 100mm f/2.8 Macro	410	677	-267	This lens was essential for mycological studies, i.e. vital taxonomy, also for taking pictures of ground mollusks, bats, and rare plants. We will use these pictures for illustrating our scientific and educational materials.
Stereomicroscope Delta Optical SZ-450B	177	312	-135	We decided to buy another, more expensive model of stereomicroscope. Our colleagues already have purchased the model which we were about to buy and they shown us serious limitations of that model.
Field telescope Celestron Ultima 80	155	179	-24	We have purchased the field telescope as planned, to the time of purchase its price has slightly increased.
Spurs for tree climbing	142	153	-11	
Climbing equipment	126	103	23	It was bought without problems and used in studying of bats and birds of prey.
Mist nets	37	37	19	We bought one mist net for bats catching from Ecotone company using project funds. However it is rather expensive and there are not much ways to buy it elsewhere.
Other research stuff	231	16	215	We planned to buy Laser range finder and hypsometer for making forest descriptions but finally we refused to buy such expensive stuff. Instead it we have bought a lot of small important stuff like magnifiers, plastic boxes for samples, hand lamps etc. Also we reallocated this money to other points of our budget.
Tent	145	148	-3	According to our budget we have purchased one tent, other two we had already.
Sleeping Bag	132	143	-11	We have bought camp and field equipment as planned, except by buying field shoes for one team member instead of sleeping bag.
Backpack	125	123	2	
Headlamps, batteries and other field equipment	50	50	0	
Notebooks, papers, envelopes, maps etc.	150	150	0	
Medicine	50	48	2	
Food and accomodation	2600	2491	90	We spent 5£ per 1 person per each field day. As we had 82 field days, and in average 6 persons per each field expedition, we had a small positive balance.
Fuel for car	525	508	17	We planned to get 3500 km but we spent about 2900, instead of it we had some extra expenses (small car repair after few expeditions).
Total	**5780**	**5774**	**6**	

Project Prospects

1. To expand our database by adding data from other researchers, literature. Make it for other regions.

2. Constant control is needed to check whether our recommendations performed properly.

In the longer scale we consider the main direction of our work to be change of forest management methods in Ukraine, including restrictions in cutting rates, clear separation of economical forests from protected ones and change of ideas of local people about forest “functioning” and role.

During the project realization we have understood that there is a necessity to continue our activities in the larger scale and also to start some further ones. Planned activities are divided into following directions: 1) expansion of forest field survey and collection of data on rare species distribution to other territories (borderline Forest-Steppe regions) 2) future work on regular and official informing of forestry and forest management organizations about the presence of rare species on their territories and about necessary restrictions of felling, aimed to save these species; 3) independent assessment of forest state (history of deforestation, forest fragmentation, reduction of forest cover area, reduction of dead wood amounts in forests as results of forest management activities and its impact on forest biodiversity); 4) raising of large-scale work in the field of ecological education among school children in village schools, situated near forests and among young active peoples in cities. This work must include carrying out seminars and preparing different educative materials.

We plan to expand field survey on borderline territories through dividing into 2-3 field groups. Therefore we need to engage more people in our team. Increasing data amount will require more effort in data processing (database management) and continuous correspondence with forestry and forest management organizations. The most decisive step would be to create the local Cadastre centre on the base of Interdepartmental Research Laboratory “Study of Biodiversity and Development of Nature Reserve Management” in Kharkiv, which would accumulate data from Eastern and Southern Ukraine. That Centre could also provide an independent assessment of forest state, which we believe is an important next step. Such fields of modern forest science as deforestation, forest fragmentation, reduction of forest cover area, reduction of dead wood amounts in forests as results of forest management activities and its impact on forest biodiversity are almost not developed in Ukraine. The problem is the contrary interests of official forest scientific institutes, traditionally connected with and financed by forest industry.

On that step we will need much more close cooperation with NGO’s and we have preliminary agreements with some of them (National Ecological Center of Ukraine, Kyiv, Ecological group “Pechenegy”, Kharkiv).

One of fundamental further steps of the project should be the movie, where we will highlight problems of increasing felling rates in the region. Also in this film we will discuss results of our independent analysis of situation in the forest sector and share our experience in the effort for the forest conservation. It will be available freely on our web-site and will be presented in a series of public presentations.

Aside from conservational and scientific activities we plan to start work in the field of ecological education. We will orient ourselves to two target groups – village school children and university students. Educational work will consist of workshops, public lections, lessons, field excursions, film showing, dissemination of leaflets, posters, booklets and other materials prepared by our group.

All these steps need further fundraising. First of all we need to provide at least part-time salaries for people, responsible for realization of stated above project activities. We have prepared applications for several foundations: Whitley Foundation, leader – our team-member Yegor Yatsuk, The National Birds of Prey Trust, Leader – Stanislav Viter.

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