

Danuta Smyk

Chemistry teacher in the Local Government Complex of Schools in Mircze

LESSON PLAN

TOPIC: Biodiversity of Natura 2000 sites in our region, and forms of nature protection.

Main objective: To familiarize students with the biodiversity of Natura 2000 sites in our region and forms of protection.

Detail objectives:

Pupil:

- clarifies the concept of biodiversity
- lists examples of plants and animals species protected in our region,
- lists the forms of nature protection,
- understands the need to create different forms of nature protection,
- clarifies the essence of the creation of national parks, landscape parks, Nature Reserve, natural monument, typical areas of protected landscape, typical areas in Natura 2000
- uses different sources to find information on Nature Conservation,
- analyzes relationships between the location of typical areas in Natura 2000 and other typical protected areas.

Methods of work: "brainstorm," talk, metaplan

Means of Teaching: source materials - ecological press, texts from the Internet, multimedia presentations

Lesson Flow:

Part I. referring:

- A reference to biology knowledge what nature is, biodiversity, what forms of Nature protection you know ("brainstorm").

II. The right part of lesson:

1. The wording and entering the topic of the lesson.

- The introduction of the teacher's notion of Natura 2000

(Natura 2000 is the youngest of the forms of nature protection, introduced in 2004 in Poland as one of the obligations related to the accession of our country to the European Union. The basis of the program are two EU directives called: Birds Directive and the Habitats Directive.

Natura 2000 sites include:

- 1) special protection areas;
- 2) Special Areas of Conservation;
- 3) sites of Community importance for the EU.

In the area of Natura 2000 does not have specific prohibitions, only in accordance with

Art. 33. 1 of the Act of 16 April 2004. Nature Conservation (t. J. 2013., Coll., Pos. 627

as amended. d.) to take actions that may, individually or in combination with other measures, significantly negative impact on the conservation objectives of Natura 2000, including in particular:

- 1) degrade natural habitats or habitats of species of plants and animals for which protection designated Natura 2000 or
- 2) have a negative impact on the species for which protection has been designated a Natura 2000 site, or
- 3) impair the integrity of the Natura 2000 and its relationship with other areas.

In our region, there are the following areas of Natura 2000:

- Bug River Valley Zachodniowołyńska PLH060035,
- Mirczańskie Forests PLH060104,
- Bug River Middle Valley PLB060003,
- The Tyszowiecka refuge PLB060011,
- Adelina PLH060084,
- Dołhobyczowskie Forests PLH060103.

2. The division of class into 4 groups.

Students work in groups, tell the group will receive materials and worksheets concerning:

- Group 1 - Plants protected in our closest area (Worksheet No. 1, Appendix 1, Appendix 2),
- Group 2 - protected animals in our closest area (Worksheet No. 2, Appendix 3)
- Group 3 - Forms of nature protection (Worksheet 3, Annex 4)
- Group 4 - the threat on biodiversity of those areas Natura 2000 in our region (Worksheet 4).

3. Presentation of each group of tasks made:

- Group 1 - Based on the text has to find at least 10 plant species under protection.

Anemone nemorosa, sweetscented bedstraw, *Pontechium maculatum*, *Pulmonaria officinalis*, **Anemone sylvestris**, *Viola uliginosa*

Vinca, lesser celandine, **ANEMONE NEMOROSA**, *Cruciata laevipes*, *Taraxacum officinale*, *Plantago lanceolata*, **Adonis vernalis**, *Achillea*, *Veratrum nigrum*, *Hypericum perforatum*, *Matricaria* L., *Aldrovanda vesiculosa* L.

corn, daisy, *Osmunda regalis* L., *Trifolium* L., Willows, lady's-slipper orchid,

Lilium martagon, *Polypodiopsida* Cronquist, Birch, *daphne mezereum*, *Populus tremula* L., *Gentiana cruciata* L.

- Group 2 - On the basis of the text is to find at least 20 animal species protection.

the bee-eater, the wels catfish, the black stork, the weasel, *Nehalennia speciosa*, the northern pike,

The rat, grey seal, tench, large copper, The **European pond turtle, the wolf**

The **European fire-bellied toad, the hare**, The **scarce large blue, Nyctereutes**, The **Eurasian beaver**, The **common crane**,

The **European hamster**, The **Eurasian sparrowhawk**, A **lynx**, The **common carp, Pieris brassicae**, The **great grey owl**

The **scarce swallowtail**, The **bank vole, the fox**, The **Aesculapian snake**, The **European pine marten**, The **crucian carp**

The **moor frog**, The **lesser spotted eagle**, The **chub**, The **great spotted woodpecker**, **Trout**, The **common frog**

The **black kite, Cervus**, The **wild boar**, The **burbot**, The **grey heron, Pelobates fuscus**

- Group 3 - Based on the text match the definitions to the appropriate forms of protection of nature.

Protects specimens of species and the habitats of species protection.

The refuges of plants, animals and fungicides.

Fragments of natural and cultural landscape deserving protection due to their scenic or aesthetic value.

Individual natural and desired alive and inanimate

or clusters of a detail for reckless value drivers sciences, natural monument

scientific, cultural, historical or landscape.

Protected under regulations of the European Union

The most valuable natural areas containing Natura 2000

habitat species plants and animals under protection

throughout the Union.

Area outstanding a detail-default wattages

environmental, scientific, social,

cultural and educational, of the area of National Park

less than 1000 hectares, who are protected rhyme

All of nature and landscape values.

Include areas in natural or

insignificantly altered ecosystems, refuges and habitats

natural habitats and superb e Ros ropes, animal habitats Nature Reserve

and habitats in the fungicidal and formations and elements of nature

inanimate matter, batch account the desired detail to-default

wattages natural, scientific, cultural

or landscape.

Of large-scale forms of nature created

Because of the value drivers natural, historical, landscape park

culture and landscapes to their

the preservation and promotion conditions of sustainable development

- Group 4 - On the basis of the text has to write in the metaplan what may contribute to the risk of biodiversity of plant and animal organisms.

III. Proposal

We should protect biorodversity because it decides about the tourist attractions

and many recreational facilities in the typical areas. The disappearance of desired ecosystems in some plants species

and animals and impoverishes

The landscape around us, and contact with nature for a man needed to correct

functioning.

BIODIVERSITY

(RISK)

over-drying habitats

wetland

conversion of land

in green field

cultivated

Fallow land and afforestation

Operation wasteland peat

overgrowing of pastures

Burning grass and

Water pollution rushes

the Bug

Construction joints

fish

IV. news summary

At the end of the reference lesson, students will watch a multimedia presentation (Appendix 5) summing up the subject. Students will do the crossword together (Appendix 6).

1. Name of the bird:

2. natural science dealing with the study of life and living organisms

3. chemical compound with the formula H₂O

4. Name this plant:

5. Slow animal with chitin armor

6. Name the bird:

7. Other name of all species of animals

8. The component is biocenosis and biotope

9. The forms of nature protection of not less than 1000 ha

10. SINGLE part forms of nature protection

11. Name of the animal:

12. The youngest forms of nature related to the Entry armored moths Polish to the European Union

13. Name the bird:

14. All plant communities in a specific area

15. It flies to light

1 Black stork

2 Biology

3 Water

4 Yellow Water-lily

5 swamp turtle

6 bee eater

7 FAUNA

8 ECOSYSTEM

9 national park

10 nature monument

11 otter

12 NATURA 2000

13 lesser spotted eagle

14 greenery

15 moth

V. Homework: Clarify the meaning of clue in the password.

VI. Bibliography:

- www.mircze.pl

- www.powiathrubieszow.pl

- www.gdos.gov.pl

- [Http://obszary.natura2000.org.pl](http://obszary.natura2000.org.pl)

- [Http://natura2000.gdos.gov.pl](http://natura2000.gdos.gov.pl)

- Act of 16 April 2004. Nature Conservation (t. J. 2013., Coll., Fire protection. 627 f the f n. D.)

- Ordinance of the Minister of Environment of 6 Oct October 2014. In the protection of species animals (Dz. U. of 2014., fire protection. 1348)

- Ordinance of the Minister of Environment dated Oct 9 October 2014 on the protection of species of Plants (t. j. z 2014 Dz. U. fire protection. 1409)

Prepared by: Danuta Smyk

WORKSHEET NO 1

Circle at least 10 species of plants under protection

Anemone nemorosa, sweetscented bedstraw, *Pontechium maculatum*, *Pulmonaria officinalis*, **Anemone sylvestris**, *Viola uliginosa*

Vinca, "Pszonka", **ANEMONE NEMOROSA**, *Cruciata laevipes*, *Taraxacum officinale*, *Plantago lanceolata*, **Adonis vernalis**, *Achillea*, *Veratrum nigrum*, *Hypericum perforatum*, *Matricaria* L., *Aldrovanda vesiculosa* L., corn, daisy, *Osmunda regalis* L., *Trifolium* L., Willows, lady's-slipper orchid, *Lilium martagon*, *Polypodiopsida* Cronquist, Birch, *daphne mezereum*, *Populus tremula* L., *Gentiana cruciata* L.

WORKSHEET NO 2

Circle at least 20 species of protected animals

the bee-eater, the wels catfish, the black stork, the weasel, **Nehalennia speciosa**, the northern pike,

The rat, grey seal, **tench**, large copper, The European pond turtle, the wolf

The European fire-bellied toad, the hare, The scarce large blue, **Nyctereutes**, The Eurasian beaver, The common crane,

The European hamster, The Eurasian sparrowhawk, A lynx, The common carp, *Pieris brassicae*, The great grey owl

The scarce swallowtail, The bank vole, the fox, The Aesculapian snake, The European pine marten, The crucian carp

The moor frog, The lesser spotted eagle, The chub, The great spotted woodpecker, Trout, The common frog

The black kite, *Cervus*, The wild boar, The burbot, The grey heron, *Pelobates fuscus*

WORKSHEET NO 3

Match the definitions to appropriate forms of nature protection

Protects specimens of species and the habitats of species protection.

The refuges of plants, animals and fungicides.

Fragments of natural and cultural landscape deserving protection due to their scenic or aesthetic value.

Individual natural and desired alive and inanimate

or clusters of a detail for reckless value drivers sciences, natural monument

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and habitats in the fungicidal and formations and elements of nature

inanimate matter, batch account the desired detail to-default

wattages natural, scientific, cultural

or landscape.

Of large-scale forms of nature created

Because of the value drivers natural, historical, landscape park

culture and landscapes to their

the preservation and promotion conditions of sustainable development

Source: Own

WORKShEET No. 4

Write in the metaplan what may contribute to the risk of biodiversity of plant and animal organisms

BIODIVERSITY

(RISK)

Source: Own

Appendix 1

Source: <http://obszary.natura2000.org.pl/index.php?s=obszar&id=297>

Zachodniowołyńska Bug River Valley

Area code:

PLH060035

Form of protection within Natura 2000 network:

Special Area of Conservation (Habitats Directive)

Biogeographic region:

continental

Surface:

1556.1 ha

Formal status:

The area approved a European Commission decision

Proposals for changes:

Within the Shadow List 2008 proposed to increase the range of the area to 1,752.3 hectares.

Description natural:

The refuge includes two left bank fragments of the Bug valley, which are stretching down to the boundary-layer pan. In prevailing part combining of the area covered by multi-species, extensively used meadows and pastures. It is a very dare ny area for the preservation of biodiversity. Identified here 6

kinds of the habitat types of Annex I of the Habitats Directive, which occupy more than half of the area. Area

They cover well-educated xerothermic (area of thermophilic plants,

steppe), who constitute a re ENVIRONMENT occurrence of a rich fauna of insectivorous, among others 176 species of

weevils in and insectivorous in the bee family. It is also locus of the **European bee-eater** -

the protected bird species in Poland and the colony of spotted souslik. Besides, WS ro d

gatunko the animals listed in Annex II of the Habitats Directive have been identified

the occurrence of, among others, white stork and the Black Tern tern, lesser spotted eagle, European beaver, otters and fire-bellied toad. The whole valley of the Bug's considered very important area in "Panaeuropejska protection strategy diversity of Biological and Landscape", is one of 10 systemic river in Europe, who rhyme gives priority to the protection of Environment and Life Sciences.

It is a kind of refuge, in the form of an ecological corridor, or Route

communication for many plants and animals species. It is a place of occurrence of falling

plant species protection, such as Adonis Vernalis, Anemone sylvestris, bitterness of the cross words, yellow water lily, White Waterlily whether cowslip.

Data updated in 2009.

Description: Destination:

Hrubieszów:

The Roman Catholic Church dedicated to St. Stanislaus Kostka, Orthodox Church dedicated to the Blessed Virgin Mary, the complex Dominican monastery, the manor "Du Chateau", The complex of Golakowskich manors, the complex of Palace Kiesewetterów.

Hrubieszów in PTTK O / Chelm, tourist information center Chelm

Zachodniowołyńska Bug River Valley is located in Lublin voivodeship district

Hrubieszów. This is an area consisting of two fragments in the south, located in

Krylov and around the northern in the area Czumów. It is situated on the border with Ukraine on section where the river flows through the Bug Wyżyna Zachodniowołyńska, which extends also outside the Polish borders. Refuge almost Locality taken as a whole it is in the area Dołhobyczowski Protected Landscape Bug River and an African Protected Landscape Area. Hrubieszów county

There are convenient connections by public bus from Warsaw, Wrocław, Krakow, Przemyśl, Rzeszow, Lublin, Chelm, Krasnystaw, Zamość or Tomaszów Lubelski.

Hrubieszów has got communication links with the area railway line standard-country

running through Zamość and running parallel to the so-called broad gauge line "HutniczoSiarkowa" combining the region Katowice (Huta) with areas of Ukraine. The national road linking.

They provide: road No. 844 in Hrubieszów -Chelm in the direction of Lublin and Warsaw; road No. 846 in the central combining the country; road No. 847 Hrubieszów-Zamość c in the direction of the southern combining country and road No. 851 Hrubieszów -Dołhobyczów- border pan countries. International related to Ukraine provides a section of the road No. 844 from Hrubieszów border pan countries. On the border with Ukraine are located three bridge approach

cut border: bridge approach of the international Zosin-Ustług in the community Horodło, bridge approach of traffic simplified extent US-warez in the community and in Dołhobyczów a railway passage Hrubieszów-Izov joining Silesia with Ukraine. Interesting tourist area tends to locating leisure facilities and provides an excellent base for tourism. In the area

the county is open network of lodgings, whose owners are members of the Association Agro-based in Horodło. Holdings are located, among others, in Horodło in Hrubieszow, in Mircze municipality, the municipality and the municipality Uchanie Werbkowice. Besides, Kryłów located axis center Training and Holiday. Accommodation Hrubieszów district is also hotels including Bursa interschool in Hrubieszow. Clean air, specific climate ensures long

laid plant vegetation, lack of industry degrading ENVIRONMENT and very good soil qualify hrubieszów county to the rank of the manufacturer ecological food. District is characterized by well developed base of sports and recreation. It held here a number of events, such as the Bug River State an Artistic meetings, festivals of patriotic and Religious Songs of Polish Army, The Heraldic Run, Run Union Horodlo, Independence Run, Canoeing Rally "BUG" agriturismo rally cycling and Rally Horse "Earth Hrubieszowski" borderland Meeting of Young. This picturesque, shaped only by the nature of the Bug valley is a paradise for anglers. There is a fish such as pike, carp, zander, bream. Meet here at Moz record Dimensions of those totals. Hrubieszow con, tour trail hiking, numbering 184.5 km one who rice has a silver Tourist stamp. From Husynne in district Hrubieszów, Strzyżów, to Matcze in the municipality of Horodło, along the Bug river valley stretches unique in Nationally trail stork nests. threats:

The biggest threat for the guide aesthetic and natural values of the area can be a Pollution of Bug, which is the axis of shaping the landscape. Besides, among others, as a result overgrowing of pastures can lead to reduce the population of the spotted suslik, who is a species of proposed for inclusion in Annex II of the Habitats Directive.

Important for Europe's habitat types

(With ON. I Director. Habitat), including priority habitats:

- Oxbow lakes and natural eutrophic water reservoirs with the communities of Nympheion, Potamion
- xerothermic (Festuco-Brometea and thermophilic grasslands Asplenion septentrionalis-Festucion pallentis)
- fluctuating meadows shaking facing (Molinion)
- herb mountain (Adenostylion alliariae) and herb plains (Convolvuletalia sepium)
- lowland and mountain fresh meadows used extensively (Arrhenatherion elatioris)
- lowland and mountain bogs Alkaline marshes, fens and sedge
- riverine willow, poplar, alder and ash (or Salicetum fragilis, Populetum Alba, Alnenion glutinoso-incanae, alder f ro dliškowe)

Important for Europe species

(From App. II Director. Habitats and the App. I Director. Birds), including priority species:

- bittern - a bird
- Black Stork - a bird
- white stork - bird
- honey buzzard - bird
- marsh harrier - bird
- harrier - bird
- Lesser Spotted Eagle - bird
- spotted crane - bird
- Zielonka - bird
- corncrake - bird
- snipe - bird
- common tern (river) - Bird
- Tern - bird
- Black Tern - bird
- Eagle Owl - Bird
- Kingfisher - Bird
- Woodpecker - Bird
- The **bluethroat** - bird
- Warbler - bird
- Gąsiorek - bird

- ortolan - bird
- necked woodpecker - bird

Institutions where you can get information about the area:

- Lubelski Wojewódzki nature conservation,
- Lublin Regional Directorate Laso Pan-layer,
- Lublin closer to the head honcho tourist information you can seek in the Municipal Information Centre located in the Municipal Office in Hrubieszów
- General Directorate of Environment Protection Wawelska Street 52/54, 00-922 Warsaw
- Lublin Regional Tourism Organization M.C. Skłodowska Street 5 p. 107, Lublin
- Protection Directorate of Environment in Lublin
- Tourist Information in Chelm <http://www.itchelm.pl/> troops PTTK in Chelm ul. Lublin 139d / 15 22-109 Chelm

Administrative units:

- Hrubieszów (Hrubieszowski, province. Lublin)
- Mircze (Hrubieszowski, province. Lublin)
- Dołhobyczów (Hrubieszowski, province. Lublin)

Appendix 2

Source: <http://powiathrubieszow.pl/74,50,roslinnosc-i-zwierzeta-chronione,1,wiecej.html>

Vegetation and animals protected

Diversification of landform, soils, and conditionality in hydrological and diverse in its intensity and form of human impact on the natural elements made that flora of the county

Hrubieszów is very rich.

Plant species present

Hrubieszowska soil abounds vulgar plants, as well as numerous protected flora.

The first group includes among else: *Anemone nemorosa* L., hepatica gajowa anemone (forests)

madder fragrant, Pszonka, cuddle Crosses words, lungwort valley (in the fields), wild ginger, periwinkle, vials, speedwell medical ringtones scattered (ditches). In more humid places grows majownik bifoliate, lily of the valley lanuszka, lesser celandine, and on the edge of the marshy banks of the river, flowers of *Symphytum officinale*, sweet flag, **Bur-reed**. Water is the kingdom of arrows water flowers Nymphaea white and yellow colon, and duration of up water. There are Bobrek trójliśtny, marsh marigold marsh, with blood string of Medicine, kozibród Meadow, plantain, biedrzyńec, Common sorrel and borscht in the meadows sprouting.

Forests occupy a small area in the city Hrubieszów. The only well educated a collection of this type, is the area of forest growing on a larger combing exaltation of

Teresówka. Stand in combing these central and southern Creating the volume hornbeams and oaks admixture of beech and pine trees in majority aged 30-40 years. For circumcision on the east side GROWING planting black locust, creating a sort of guard of honor. On the west side of the forest, also for Circumcision, you will be coming from the pine plantings. In the forest, the volume wny stand the creation of elderberry, black cherry and common buckthorn, rarely cherry of shaking of (avian). Fleece is available in monotonous, they make a desired creating carpets anemone and mioduny violet forest, and in

humid patches plants, sedge Leś on, common curlew, wild ginger

Common (protected species). Much better behavior show yourself hail, located at Zamojski Street just outside the city (Las Dębinka - Safarowszczyzna), growing on loess ravines.

Stand consists of a stately Debo at the age of 80-100 years old, much younger hornbeams -

about 40 years, and lindens. Runo is much richer in comparisons with the hail of Teresówka fermentation broth is overgrowing.

Next anemone appears anemone, Polygonatum multiflorum, Maianthemum bifolium, European Wild Ginger, colorful spring peas, the **herb-paris**.

Park Locality nestled in the valley Huczwa in near the stadium, a community in the type of riparian poplar.

While the city park stretching Dobrzański, May 3 and Narutowicz Streets represent small, tree-lined square. It consists of ash, elm, maple, linden, birch individually.

Habitat types of forests in the district Hrubieszow

Lp. Name Characteristics

1. Forest towers occupies about 80% of habitats of Forest Stand consists of oaks (50%), birch (9%), Poplar (6%), and cloning of, hornbeam, linden and cherry. IN species-rich undergrowth occurs rare and protected species Ros ropes: periwinkle, the **bird's-nest orchid**, leaved Helleborine, lily złotogłów,

foxglove, Polystichum Aculeatum, Parzydło primrose
Medically, Splash European podkolan white and greenish, stinkhorn,
Turo wka .

2. humid forest

Its habitat occupies about 5% of Laso in the municipality, there are over
Bug River near the village of S lipcze, near Masłomęcz and Czerniczyn.
Stand consists of alder (56%), oaks (17%), pine (12%) and birch (5%).
Among species protected stated here: oppression shears green helleborine
szerokolistnego, lily złotogłów, guelder rose, wild ginger and common alder
Grey.

3. Las mixed fresh

It occurs in small areas (approx. 10% of the s w)
north after combing these municipalities (forests Strzelecki). Stand consists of pine (73%),
oaks (22%), birch (3%) and larch and alder, a protected plant species
among others: leaved Helleborine, foxglove, stinkhorn,
guelder rose, lily of the valley, buckthorn.

4. alder forest

habitats of alder occurs when the łnocnej border municipalities along in heavy operation.
Stand here consists of alder (87%) and birch (13%). protected species
plants include: black currant, viburnum reef, buckthorn.

5. ashen forest

It occurs in the north combing those municipalities in small hollows and along
heavy operation. The composition of the stand is to bring wife to alder (alder and birch) with a small Admixture elms,
ashes and Debo. The Sposa ro d protected gatunko Ros ropes
these woods were found: oppression shears green the **broad-leaved helleborine**,
black currant, viburnum reef, buckthorn.

With ro DLO: own by natural inventory in 2000

protected animals

Lp. Group

fauna

The species name of the species

1. birds black stork

(Ciconianigra)

Strzelce landscape park

(Within the limits of the municipality in Hrubieszów)

2. mammals because this year the European

(Castorfiber)

Bug valley

3. birds corncrake

(Crexcrex)

Bug valley

4. birds Lesser Spotted Eagle

(Aquilapomarina)

municipality in Hrubieszów

5. mammals speckled ground squirrel

(spermophilussuslicus)

What if in the use of ecological „ Blonie

Bug River an-shirts "

6. mammals wolf

(Canislupus)

Nadleś nictwo Strzelce

7. mammals otter

(Lutra lutra)

Bug river

8. birds ołna

(Meropsapiaster)

near Hrubieszow, where he regularly nest

Source: own study based on natural inventory in 2000

Upland above mentioned species of fauna (Tab. 12) „ are listed in the Polish Red Book Animal "(2001) and „ red fox of endangered animals and the threat complex in Poland" (2002).

Selected species of birds protected and rare in
hrubieszowski county

Lp. The species name Category Status Position

1. Great Crested Grebe

(*Podiceps cristatus*)

breeding and nest

some

What if tile ecological „ Blonie

Bug River an-shirts "

2. Little Egret

(*Egretta garzetta*)

passing nesting

full

oxbow lake near the village Husynne

3. Black Stork

(*Ciconia nigra*) breeding

nesting

some

Leśnictwo Gołębowiec

nesting

likely

Leś-law

Cichobó years of age

4. white stork

(*Ciconia ciconia*)

breeding and nest

some

area municipalities

5. garganey

(*Anas querquedula*) breeding

nesting

some

pond in the valley of the Bug River near the village

Wołynka

nesting

likely

What if tile ecological „ Blonie

Bug River an-shirts "

6. shoveler

(*Anas platyrhynchos*)

breeding and nest

likely

What if tile ecological „ Blonie

Bug River an-shirts "

7. hawk

(*Accipiter nisus*)

breeding and nest

some

Leśnictwo Gołębowiec,

Stefankowice, Maziarnia,

Hrubieszów, Cichobórz

8. sparrowhawk

(*Accipiter nisus*)

breeding and nest

some

Leśnictwo Stefankowice, Maziarnia,

Gołębowiec, Cichobórz

9. corncrake

(*Crex crex*)

breeding and nest

likely

Bug valley, the valley Huczwa above above

Hrubieszów, meadows on the Ubrodownica

10. Kokoszka

(*Gallinula chloropus*)

breeding and nest

some

ecological use „ Blonie

Bug River an-shirts "

nesting

likely

oxbow lake near the village of Cologne

Husynne, tank dean

11. Jarząbek

(*Bombus agrorum*)

breeding and nest

likely

Leśnictwo Stefankowice, Maziarnia

12. Kingfisher

(*Alcedo atthis*) breeding

nesting

some

Bug valley

nesting

likely

section Huczwa

13. bee-eater

(*Merops apiaster*)

breeding and nest

some

ecological use,, Blonie

Bug River an-shirts "

14. remiz

(*Remiz pendulinus*)

breeding and nest

some

What if tile ecological „ Blonie

Bug River an-shirts "

Source: own study based on natural inventory in 2000

A number of the Plazo it is scarce and comes in white dispersed to members include ±:

fire-bellied toad, tree frog, frog desired marshes and digestive and brown (valley Huczwa), Green, Water and jeziorowa (pond flow of the canal relief), and toad (AREA

cities). All the above mentioned upland species in Plazo are protected under national law

(OJ 2001, No. 130 poz.1456).

Few reptiles occurring on the area in question are: European pond turtle (the border municipalities in Hrubieszów) worm (forests), grass snake, sand lizard (swards a position on the slopes of the valley of the Bug).

Water Bug and Huczwa rich in fish species such as pike, Prussian carp, tench, carp, bream, chub, carp, roach, catfish, burbot, stickleback, perch, dace, ide, bleak, loach and goat (protected).

Forest Dołhobyczowskie

Geographical location: Volynska Highlands - perches Solska Valley Hrubieszowska.

Area: 472.9 hectares.

Dołhobyczowski Protected Landscape Area includes three complexes Forest (Dołhobyczów - Dołhody Forest, Witków - Zabłocie Forest and Witków forest towers and humid, mixed, Oles ash), water and rushes, and after crops.

It occurs in these areas interesting and unique species of plants and animals. Dominated mostly Mature stands with sessile oak, is also located here Ros rope that is protected lily Turk's cap, yellow water lily, viburnum reef, European Wild Ginger, daphne, rare species butterflies and others.

Animal species that can be found in Dołhobyczowski protected landscape area this:

- ☐ 29 nests of white storks,
- ☐ black stork,
- ☐ because this year the European
- ☐ red tuna nieparek,
- ☐ black woodpecker,
- ☐ woodpecker average,
- ☐ fire-bellied toad,
- ☐ dusky large blue,
- ☐ The scarce large blue,
- ☐ The **collared flycatcher**
- ☐ The **red-breasted flycatcher**
- ☐ lesser spotted eagle,
- ☐ great crested newt,
- ☐ honey buzzard.

Forest Mirczańskie

Area: 153 hectares.

Flat area of brown soils Locality located on the edge of the valley of the Bug. There appears stands.

ANIMAL SPECIES, which can be met in the woods Mirczan States:

- ☐ black woodpecker,
- ☐ woodpecker average,
- ☐ The **collared flycatcher**
- ☐ The **red-breasted flycatcher**
- ☐ lesser spotted eagle,
- ☐ honey buzzard.

Appendix 3

Source: http://mircze.pl/asp/pl_start.asp?typ=14&sub=5&subsub=27&menu=95&strona=1

By indexation typical areas in Zamojszczyzna's fauna ("Studying the center axis of the documentation physiographic - Volume XX - Research and Valorisation of fauna of Zamojszczyzna "collective work direction Z. Głowacinski) the majority of municipalities form regions with above-average value drivers and high (Bug valley).

In the system of typical areas in fauna are present:

- ☐ fauna swards and steppes,
- ☐ forest fauna
- ☐ fauna meadow - thicket.

Areas with habitats in grasslands mostly were occupied at the for agricultural occupancy, today remained in the state after a natural wit only fragments of this type ecosystems in (slope, Circumcision of roads, copper, Deprecated plate). Habitats grasslands occur interesting group of insectivorous in the example bee, and in certain places - desired bee-eater, a rare bird in the typical areas southern and south - eastern.

Wilderness fauna has valuable zoocenosis: moose, deer, black stork. Above

Bug River is a place performing with the lion's share of mud, and in the south - east passage municipalities marsh harrier.

Fauna Meadow - scrub occupy a larger or smaller area over almost every

waterways Municipalities Mircze the most valuable refuges located on the Bug (buzzer

fire station, reed bunting). In the area of wetland meadows and oxbow lakes obroś oped shrubs occurs

corncrake, wagtail desired by LTA, Thrush Nightingale, Teal. Characterization of habitat types meet also extremely dare role as recreation areas and ask passengers migratory animals,

especially birds. This applies to the volume of the typical areas of riverside and reservoirs of water. Developed strings of marsh - the river valleys, communities, copper, firehouses and ditches, ravines, single slope significantly affect the maintenance of occurrence of many continuity of species in wildlife and its species diversity. Forest fauna represents a deer, otters, badgers, wild boars, foxes, hares, and storks and cranes desired. In the commune Mircze stated previously Occurrence 38 species of mammals. Exponent these habitats is very high number of minor mammals - mostly in rodents (The **bank voles** and hamsters in the fields, voles in forests) and small mammals. the predators of (weasels). The result is high number of organisms on the upper floors of upland trophic, for example. Birds of predators. In the commune Mircze were found the following protected and rare species animals:

- ☐ **European beaver** (*Castor fiber*)
- ☐ otter (*Lutra lutra*) - A single observation near NCE at the Bug River and its oxbow lakes.
- ☐ badger (*Meles meles*)
- ☐ raccoon dog (*Nyctereutes procyonoides*)
- ☐ Lesser Spotted Eagle (*Aquila pomarina*) - are in forests constituting wild animal protected species - by J. Wojciak approx. 16 - 20 pairs,
- ☐ Grey Heron (*Ardea cinerea*) - Czapliniec numerous, more than 100 nests occupied,
- ☐ Black Kite (*Milvus migrans*) - Stand-alone protected by zoning,
- ☐ Sparrowhawk (*Accipiter nisus*)
- ☐ long-eared owl (*Asio otus*)
- ☐ Black Stork (*Ciconia nigra*) - 4, pairs,
- ☐ bee-eater (*Merops apister*)
- ☐ desired crane (*Grus grus*) - a single observation,
- ☐ grass snake (*Natrix natrix*) - occurs in thickets desired touchwood old logs poplar.

Bug valley is also very important migration routes of birds. especially in the spring Stops on the backwaters of the River Bug many ducks, waders, herons and other water birds. Bug valley importance for breeding birds and migratory flows from its character. Although natural riparian forests have been largely cut out and replaced by meadows and pastures though the river did not change significantly and is still the perfect place rich breeding and feeding ground. The dominant characteristic birds in the Municipality of agricultural landscape are quail, Stonechat, bunting and ortolan. Another interesting species expanding north range incidence is white-neck woodpecker. It is a species associated with anthropogenic habitats. Nests in orchards, parks in solitary roadside trees of. Like the bee-eater is characteristic of the south - eastern Polish. The characteristic species for land used for agriculture is the white stork. In addition, the Municipality Mircze The occurrence of the following gatunko in ptako in Bittern *Botaurus stellaris*, Bittern *Botaurus stellaris*, Sparrowhawk *Accipiter nisus*, Sparrowhawk, Lesser Spotted Eagle *Aquila pomarina*, eagle *Hieraetus pennatus*, Battalio *Philomachus pugnax*, Curlew *Numenius arquata*, whiskered tern *Chlidonias hybridus*, white-winged tern *Ch. leucopterus*. On the slopes of the Bug valley among reptiles There are numerous sand lizard (*Lacerta agilis*). On the Commune were found the following protected gatunko in amphibians: Toad bellied (*Bombina orientalis*), spadefoot (*Pelobates fuscus*), gray toad (*Bufo bufo*) European tree frog (*Hyla arborea*), desired toad (*Rana arvalis*) and the common frog (*Rana temporaria*).

The Municipality stated Mircze 55 gatunko the butterflies, which represents almost 37% Polish fauna. Small species richness due to the low natural diversity the environment and with a strong majority of the anthropogenic habitats of meadow and forest the study area.

At the commune, there are three protected species. These include swallowtail (*Papilio machaon*), who lives in dry open areas and two species mieniaków - Strużka Score (*Apatura ilia*) and tęczywiec (*Apatura iris*) - associated with the forest environment. In addition, this area there are 8 gatunko in Incribed on the red list. Wśród have desired category E - dying, it was found *Limenitis orithya* (*Limenitis populi*), who has favorable conditions for development in the desired fertile woods of white aspen participation (including

type of Environment is also developing protected mieniak Struża Score).

Of the species at risk of extinction causing red tuna nieparek (*Lycaena dispar*), the only species in the Municipality protected by the Berne Convention SKA, who rice was observed in the wet peaty meadows around Krylov, Mołożów

UG Mircze

Appendix 4

Forms of nature

Characteristic forms nature conservation in Poland

The Nature Conservation Act desired batch of the following forms of nature conservation:

1. national parks,
2. Nature Reserves,
3. State Parks,
4. protected landscape areas,
5. Natura 2000
6. natural monuments,
7. documentation sites,
8. What if grassland ecological,
9. The nature and landscape,
10. protection of species of plants, animals and fungi.

Each form fulfills a different role in the Polish system of nature conservation and other objectives, which is why

It is characterized by a different regime of protection and the scope of restrictions on use.

Forms of nature protection Creating a large and diverse team means to pursue

Protection of nature, formed as a result of the development of the scientific basis for the protection of nature and its many years of practice. Summary of forms nature conservation in Poland

No. Name Number of objects forms of protection

1. National Parks 23
2. Nature Reserves 1 479
3. State Parks 122
4. protected landscape areas 395
5. Natura 2000 areas 145 areas of special protection in ptako (PLB)

845 Special Areas

Conservation (PLH)

6. monuments of nature 36 353
7. Documentation 171
8. ecological areas 7 090
9. The nature and landscape 287
10. Protection of Species 322 species of fungi

799 animal species The data points 1,2,3,4,5,7,9,10 table the source of the General Directorate for the Protection of Environment (section 10

As of January 2015. - The data refer to native species, 1,2,3,4 points as of December 2014.,

Section 5 Status on 21 November 2012., points 7.9 data during the update) data in points 6, 8

Table Based on the materials Environment 2014 Main Office

Statistics.

Characteristic forms of nature conservation in Poland:

- National Parks

They cover an area of outstanding value for the environmental, scientific, social, cultural and educational, of not less than 1 000 hectares, on which the Protection is subject to all nature and landscape values. The national park created to conservation of biodiversity resources, two in and elements of inanimate nature and landscape features, restore a proper state natural resources and components, as well as reconstruct distorted nature habitats, plants, animal habitats or habitats mushrooms.

- Nature Reserves

They include areas in natural or slightly changed ecosystems, refuges and natural habitats, as well as the habitat of plants, animal habitats and habitats of fungicides and formations and elements of inanimate nature, outstanding value for the environmental,

scientific, cultural or landscape.

- State Parks

These include areas protected due to the value drivers natural, historical and cultural landscapes in order to preserve and popularize the value drivers in the conditions Sustainable Development.

- Protected landscape areas

They include protected areas due to batch desired niający landscape, with diverse ecosystems, valuable because of the possibility of satisfying the needs of tourism and recreation and functions of ecological corridors.

- Natura 2000 sites

Natura 2000 is the youngest of the forms of nature protection, introduced in 2004. In Poland, as One of the mandatory in view of the accession to the European Union. Natura 2000 sites created in all Member States forming the European ecological network Natura 2000. The aim is the protection of about 200 of the most valuable and complex threat of extinction habitat natural and more than 1 000 rare and complex threat gatunko in. Unikalność this form of protection Nature is that e member countries form a network based on the same assumption en laid down in law and European Union guidelines, manage it using similar instrumento in, co Overall concerned about the appropriate financial resources and its promotion.

- Monuments of nature

Individual natural animate and inanimate, or their clusters of detail for reckless value drivers science, scientific, cultural, historical or landscape and characterized by individual characteristics, distinguishing them among other creations, impressive size of trees, shrubs native and foreign sources, waterfalls, karst spring, rocks, ravines, boulders Overhead and caves. Areas undeveloped, unless it constitutes a threat to an for the people or property, trees acting natural monuments are protected until they are spontaneous, complete disintegration.

- Documentary stands

These are not distinguishing on the surface or possible to extract, important in terms of research and teaching, the place of occurrence of geological formations, accumulations of fossils or mineral creation caves or shelters under rocks along with silts and fragments exploited or inactive surface and underground workings. Documental positions may also be that the locus of fossil rudimentary plants or animals.

- Ecological lands

They are worthy of protection the rest ecosystems of significant importance for biodiversity - natural water reservoirs, on field and forest ponds, clumps of trees and bushes, swamps, bogs, dunes, patches of not used plants, old river bed, rock outcrops, slopes, stone on the river banks, natural habitats and of rare or protected plant species ropes, animals and fungicides in their refuges and multiply cost action or a place seasonal stay.

- Nature and landscape complexes

These are fragments of natural and cultural heritage worthy of protection because of the their scenic or aesthetic.

- Protection of species of plants, animals and fungi

Species protection is aimed at ensuring the survival and proper ownership of the conservation status of wild occurring within the country or other Member States of the EU Rare endemic, vulnerable down and complex threat of extinction and protected on based in regulations allows the international patients that Poland is a signatory, species of plants, animals and fungicides in and their habitats and refuges and superb behavior diversity of species and genetic. In order to protect the refuges and positions plants or fungicides in protected species or refuges, breeding sites and regular presence of animals under protection species may be the establishment of protection.

Red books and a list of threatened species

In order to protect the plant desired biological norodność you are prepared ro wnież red books and letters gatunko in complex threat. Published by the International Union for Conservation of Nature (IUCN) list of complex threat of extinction of species of organisms appeared for the first time 1963. IUCN Red List published annually and provides a good f ro DLO information about the threat of quan complex gatunko in and the degree of threat they pose.

Polish Red Book of Animals

It is a record of some complex threat species of the animals on Polish territory, created in the pattern International Red Book Species in complex threat. It contains a list of endangered species of animals exact description and maps of locations. Laid la also that the degree The threat to an every species, of their occurrence and the use of and proposed ways of protection.

For the Polish Red Book of Animals is developing the Institute of Nature Conservation, Polish Academy of Sciences, with the cooperation with the dozens of scientists from all over Polish. The latest edition of the Red Book Vertebrata from 2001., And the Red Book of Invertebrates in 2004.

Polish Red Book of Plants

Analogous to the Red Book of Animals contains a list of endangered gatunko Ros ropes with descriptions Biology, occurrence, threat en and using a method of protection. The information contained herein illustrate Zaro NCE degree of threat to an flora and the state of knowledge of this phenomenon.

Red Book of Plants was developed by the Institute of Botany Academy of Sciences and the Institute for Protection Nature Sciences. The latest edition of I'm with 2014.

Was published ro wniez Red Book of the Polish Carpathians (2008), who describes the ra The threat they Ros vascular rope.

Red Letters Animals, Plants and Mushrooms Polish

Red List Species the complex threat of extinction include Zaro NCE animals, plants as and mushrooms. They contain complete records gatunko threat in complex with their classification for the The threat to an appropriate category, but deferred account the desired of red books do not describe each species. The last edition of the Red List of Plants and fungicides in Polish, published by the Institute of Botany PAS comes from 2006.

Central Register Form Conservation

Keeping central registry forms of nature protection is based on Article. 113 1 of the Act of 16 April 2004 on nature protection, according to the rhyme who remains in the competence of the General Director of Protection of the environment. Register, constituting a base form Conservation of Nature, at the moment is in the process based on the data Derived from of registers in the conduct of regional Director the protection of Environment and other bodies responsible for nature conservation.

The work submitted in the Competition for Teachers for the best lesson plan of educational activities about biodiversity, Nature 2000 sites, different forms of nature protection and influence of changes of climate on ecosystems. The contest organised within project "Under the wings of Nature 2000" - educational activities for protection of biodiversity and ecosystems in Lublin Voivodeship" conducted within Financial Mechanism of European Economic Area 2009-2014.