

# Information Sheet on Ramsar Wetlands (RIS)

1. **Date this sheet was completed/updated:** October 27' 2000

2. **Country:** Republic of Belarus

3. **Name of wetland:** Mid-Pripyat State Landscape Zakaznik

4. **Geographical coordinates:** 52°09'N, 27°00'E

5. **Elevation:** 120-150 m above sea level

6. **Area:** 90447 ha

7. **Overview:** The site covers that part of the Pripyat river floodplain which is located between the mouth of the Yaselda river and the mouth of the Stviga river (120 km). The floodplain varying from 4 to 14 km in width is flooded every year in spring. The site is dominated by alluvial, mainly oak forests, meadows and lowland mires. The floodplain is used mainly for haymaking, pasturing and fishing. This is a key Belarusian waterbird nesting and on-migration concentration site. The territory regularly supports more than 20,000 waterbirds.

8. **Wetland Type:** (please circle the applicable codes for wetland types as listed in Annex I of the Explanatory Note and Guidelines document)

<b>marine-coastal:</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>Zk(a)</b>
<b>Inland:</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>Sp</b>	<b>Ss</b>	<b>Tp</b>	<b>Ts</b>	
	<b>U</b>	<b>Va</b>	<b>Vt</b>	<b>W</b>	<b>Xf</b>	<b>Xp</b>	<b>Y</b>	<b>Zg</b>	<b>Zk(b)</b>			
<b>human-made:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>Zk(c)</b>		

**Please now rank these wetland types by listing them from the most to the least dominant: Ts, Xf, W, Tp, P, O, M, 4, 9, 2**

9. **Ramsar Criteria:** (please circle the applicable criteria; see point 12 below)

1a 1b 1c 1d 2a 2b 2c 2d 3a 3b 3c 4a 4b

**Please specify the most significant criterion applicable to this site: 1a, 2a, 3c**

10. **Map of site included?** YES

11. **Name and address of the compiler of this form:** Dr. Alexander Kozulin, the Institute of Zoology of the National Academy of Sciences, Ul. Akademicheskaja 27, 220072 Minsk, Belarus

12. **Justification of the criteria selected under point 9, on previous page.** (Please refer to Annex II in the Explanatory Note and Guidelines document).

The site is of international importance because it meets the following criteria:

**Criterion 1 a, 1c** (representative or unique wetland types):

1a - It is a particularly good representative example of a natural wetland type (floodplain), characteristic of the biogeographic region Polesia.

1c – it is a particularly good representative example of a wetland, which plays a substantial hydrological, biological role in the natural functioning of the Pripyat river basin.

### Criterion 2

2a - It supports an appreciable assemblage of rare and vulnerable species of plants and animals. Throughout the history of scientific research in the Mid-Pripyat Reserve 52 National Red Data Book species were registered in the area, of which 39 are breeding here.

### Criterion 3 (waterbirds):

3a - It regularly supports 20,000 and more waterbirds.

3c - It regularly supports 1 per cent of the individuals in a population of one species or subspecies of waterbirds (based on available data on populations). . More than 1 per cent of the European population of the following bird species breed here: Bittern *Botaurus stellaris* (300 males), Black Stork *Ciconia nigra* (50-70 pairs), Garganey *Anas querquedula* (10,562 pairs), Gadwall *Anas strepera* (688 pairs), Black Tern *Chlidonias niger* (500-1000 pairs), White-winged Black Tern *Chlidonias leucopterus* (3000-7000 pairs).

### Criterion 4

4b – it is an important source of food for fishes, spawning ground.

**13. General location:** The site is located in the middle part of the Pripyat river, between cities Pinsk and Turov, partially covering the territory of four administrative districts of Brest Region: Pinsk District, Stolin District, Luninets District, and Zhitkovichi District. The borders of the site have been defined and described as appropriate.

### 14. Physical features:

**Geology and Morphology.** The valley of the Pripyat river covers the central part of the Polesie Lowland. Its structure reveals three subsequently ascending over-floodplain terraces. The width of the first over-floodplain terrace fluctuates from 4-5 to 10-18 km. This part of the Pripyat floodplain hosts the biggest natural alluvial landscape plots not just in Belarus but in the whole Europe. Structural and functional features of the floodplain landscapes result for the most part from the alluvial character of the Pripyat river and its main tributaries. One of the most peculiar features of this area is presence of a large ancient lake-type enlargement, which is flooded every year. Two landscape structures and distinguished within the Mid-Pripyat area. These are: (1) floodplain landscape complexes with lowland hypnum-sedge mires, black alder grassy-and-sedge forests in broad-coomb areas; and (2) flat-crested landscapes with mesohydrophilic meadows, oak-forests on soddy-gley and gley soils, as well as with forb-and-sedge mires. Each of the two types of landscape complexes has its own micro- and mesorelief.

**Hydrographic and hydrological features.** The Pripyat river is the main waterway of the Polesie Lowland. The river is 761 km long. The catchment area is 121,965 km<sup>2</sup> with 52,700 km<sup>2</sup> in Belarus. Channel width upstream of the mouth of the Goryn' river is 80 m, downstream of the same point – 130-170 m. The largest left-bank tributaries of the Pripyat within the Zakaznik area are rivers Yaselda, Lan', Sluch. Most important right-bank tributaries within the Zakaznik are rivers Styr', Goryn', Stviga. The Pripyat and its tributaries belong to the flatland river type with dominating snow feeding. Dynamics of the in-year water level fluctuations reveal a relatively low-level and quite large-scale spring flood, short summer no-flood period, which is still almost every year interrupted by floodings, and much more discernible autumn and winter no-flood periods, attributed mainly to a peculiar combination of rainfalls and thaws. The flooding period varies greatly: from 40-45 days on small rivers to 3.5-4 months on the Pripyat itself. On the Pripyat and most of the tributaries the flood peak is normally observed at the end of March – beginning of April. The average rise of the water in spring (relative to the lowest summer level) is 3.5-4.5 m on the Pripyat, 1.5-3 m on left-bank tributaries and 1-2.5 m on right-bank tributaries. Water rising during rainfall events (as compared to that during normal annual floodings) is irregular and in some instances they exceed spring floodings (years 1952, 1960, 1974, 1993). Rainfall events and normal floodings lead to inundation of the whole floodplain including dwellings, public and administrative buildings, communication facilities. The largest area inundated during spring floodings is 425,000 ha. Spring flow of the Pripyat constitutes about 61 per cent of its yearly figure; for the summer-and-autumn and winter flows the shares are 23 and 16 per cent correspondingly.

The economic activities (more than 1 million ha of the Polesie area was drained from 1966 till 1990) have a significant impact on the river regime. Drainage of the water basin results in increased flow rate.

Construction of embankments to protect the area against flooding causes a significant rise in the flood level and flooding of previously water-free areas, including valuable floodplain forests and other lands located between embankments.

Almost all water quality indicators have shown downward trends over the last decade. Most remarkable are increases in the content of mineral N, P, and suspended matter. Oil products, phenols and copper have exceeded their maximum allowable concentrations by content. This means a higher runoff of biogenic substances from agricultural fields, growth in the amount of municipal liquid discharge, more rapid development of the industrial sector.

**Climate.** The whole area of the Mid-Pripyat Zakaznik lies in the Southern warm unstably wet agroclimatic region. The main attribute of the latter is formation of the least “continental” climate characterized by soft and short winters with summers warm and longer than in any other part of Belarus. This fact is proved by the average multi-annual meteorological data from the Pinsk Meteorological Station. The average January (coldest month) temperature is (-5.3°C); the average July (warmest month) temperature is +18.6°C. The average year temperature is +6.9°C. Corresponding figures for the whole of the Republic of Belarus are (-6.7°C), +17.8°C, and +5.8°C. In some years the temperature keeps above 0°C for as much as 250 days; above 10°C – for 157 days; above 15°C – for 95-105 days. Annual precipitation figure for the Polesie region is 600 mm. This is a little less than for the whole of Belarus (650 mm). Stable snow cover keeps for 75 days from last decade of December till beginning of March. In 18 per cent of all winters formation of a stable snow cover was not observed at all.

**Soil cover.** The soil cover of the Pripyat floodplain and its over-floodplain terraces is characterized by extreme diversity and complexity. It formed and developed under conditions of annual floods and deposition of new alluvial sediments on the surface. The alluvial sediments are dominated by sands, sandy loams, loams, with substantial siltation in some of the depressions. Vast wetland plots are typical for this area. Acid soils of high and medium degree cover 19-24 per cent of the territory. They have a relatively high humus content (3-4 per cent), which drops down only in near-channel soils (about 1 per cent). Floodplain peat-and-wetland type soils cover more than 50 per cent of the floodplain area and are characterized by high ash content. All floodplain soils are poor in mobile nutrients (this is observed at 80 per cent of the area). The soddy-polzolic, mainly sandy, soils of the over-floodplain terraces are characterized by elevated acidity, low humus content and unstable water regime.

**15. Hydrological values:** The Pripyat river is the main waterway of the large Polesie region. The hydrological regime of the river and its tributaries defines the level of groundwater in the whole region. Preservation and restoration of the natural hydrological regime of the river and its tributaries will allow for re-establishment of normal ecological conditions in the Polesie area, disturbed by drainage of more than 1 million ha in the Pripyat catchment. The most crucial problems existing in the Polesie: progressing mineralization of drained peat soils, drop in the groundwater level, more frequent draughts and summer inundations, progressing eutrophication of water caused by direct discharge of agricultural waters via drainage ditches, increased pollution of water with various substances. It is important to remember that the quality of water in the Dnieper river is to a great extent determined by the condition of its main tributary, i.e. the Pripyat river.

**16. Ecological features:** Territories with natural vegetation (forests, meadows, mires, shrubs and waters) cover about 69,800 ha, or 92 per cent of the area of the Zakaznik. Forests cover 22.7 per cent of the area of the Zakaznik, meadows and mires cover 38.1 per cent, shrubs cover 12.3 per cent, waters cover 6 per cent of the Zakaznik's area.

Formation structure of the forests of the zakaznik exemplifies the diversity of the forests of this particular geobotanic region (66 forest types of 10 formations are present here). Relative to the character of the geobotanic region the floodplain can be noted for its significant share of oak and black alder forests and low presence of pine and derivative parvifoliate forests. The share of the following trees (rare in this subzone) is higher in the Zakaznik than in the geobotanic region: Hornbeam, Maple, Lime, Elm. As compared to areas without a protection status, the Pripyat floodplain contains much more of old oak, ash, and black alder forests. Ripe and overmatured tree stands, valuable in terms of ecology and phytocenosis, cover 8,280 ha, which is 52 per cent of the Zakaznik, including 4,311 ha of oak forests (79.8 per cent), 158.7 ha of hornbeam forests (94.4 per cent), 2,364 ha of black alder forests (43.7 per cent). Young forests of the 1<sup>st</sup> and 2<sup>nd</sup> classes have a relative low share in the overall forest structure (19 per cent). The main problem of the Pripyat forests is disturbances in the hydrological regime leading to overwetting of floodplain forests.

Meadows dominate in the vegetation structure of the Zakaznik. They cover more than 50 per cent of its area. This is where the Polesie region stands out as compared to other parts of Belarus. The territory of the Mid-Pripyat Zakaznik can be considered an example of natural lowland and floodplain meadows. Long-term flooding of the Pripyat floodplain and uniformity of mesorelief (evenness and wetness with low and flat-crested structures) meant quite low diversity in terms of phytocenosis. However, the area hosts unique and rare (in Belarus) communities which became quite spread due to the specific nature of the soil-forming rocks and a peculiar hydrological regime of the region. Widely present are first of all eutrophic mire communities (associations *Phalaridetum arundinaceae*, *Caricetum ripariae*, *Glycerietum aquatica*, *Caricetum gracilis*, *Phragmitetum communis*), certain acidophilic mire communities (*acc. Calamagrostidetum canescentis* and *Caricetum distichae*), and wet meadow communities (*acc. Caricetum paniceae* and *Agrostidetum albae*). Wide presence, high feeding value and specific phytocenotic structure (stratification, height and density of the grass stand) of many communities explain their important role in the economic (as a natural feeding base), as well as in the nature protection sector. Besides, the *Caricetum distichae* communities are interesting for their phytocenotic characteristics.

Progressive overgrowth of open floodplain meadows and lowland mires with shrubs has been observed in the last several years. This for the most part should be attributed to cessation of hay-cutting in hardly accessible floodplain parts, the local population having switched over to hay-making on drained areas that are well accessible for machinery.

**17. Noteworthy flora:** 725 plant species have been registered on the territory of the Zakaznik. Because of the large area of the site the study never covered the whole of the territory in question, so the list of plant species may be considered incomplete. At the same time, the quite high uniformity of over-wetted and mire-type floodplain ecotopes means low species diversity on the site. The analysis done so far allows for a conclusion that the Mid-Pripyat floodplain flora remains for the most part in its purely natural state. This is to be attributed to low degree of anthropogenic development of the floodplain due to prolonged floods and lack of roads. Thus the floodplain meadow ecotopes would at best be used as pastures and hay-making fields, which did not have any significant impact on the composition and preservation of natural flora. 11 Red Data Book plant species have been noted within the Zakaznik, some of which had been formerly believed to be non-existent in the Pripyat region. The latter include Rue-leaved saxifrage (*Saxifraga tridactylites*), *Viola stagnina*, and *Cardaminae parviflora* L.. The overall number of this kind of plant species, presenting special florochorologic interest, which have been identified on meadow and mire-type ecotopes, is 57.

Forest plots in the Pripyat floodplain have managed to stay in much better condition. 6 protected species have been revealed here. Some of the discoveries are really unique: they relate to either the farthest southern strip of occurrence or island habitats. The same is true about rare and chorologically interesting species, which are here 48 in number.

**18. Noteworthy fauna:** The richness of the zakaznik's fauna is explained by the high variability in local landscapes providing for unique habitat diversity. Most peculiar habitats are: transformed lowland mires (fens); dense network of floodplain lakes and temporarily flooded water bodies; river channels and sand dunes; wet, mire-type and steppe-like floodplain meadows; various floodplain forests, bushes and shrubs.

Among terrestrial vertebrate animals 36 mammals, 182 bird species, 6 reptiles, 10 amphibians, and 37 fish species have been registered altogether.

**Mammals.** The Pripyat floodplain plays central role in supporting the existence of near-water species. It is here that Belarus' largest breeding centers of the following species are located: Beaver (*Castor fiber*), Otter (*Lutra lutra*), Pole Cat (*Mustela putorius*). Wetland forests and bushes are regional concentration center for Elk (*Alces alces*) and Wild Boar (*Sus scrofa*).

**Birds.** Relative to other terrestrial vertebrate animals present in the Zakaznik bird fauna is characterized by the biggest diversity. 155 nesting species have been registered here, which is 68.5 per cent of all nesting birds of Belarus. This indicator is probably the highest among all protected areas of Belarus.

Throughout the history of scientific research in the Mid-Pripyat Reserve 52 National Red Data Book species were registered in the area, of which 39 are breeding here. The status of 14 National Red Data Book species is fully dependent on the condition of the Pripyat floodplain. 30-100 per cent of the following species breed in the area in question: Little Bittern (*Ixobrychus minutus*), Black-crowned Night Heron (*Nycticorax nycticorax*),

Great White Egret (*Egretta alba*), Black Stork, Pintail (*Anas acuta*), Ferruginous Duck (*Aythya Nyroca*), Spotted Eagle (*Aquila clanga*), Little Crake (*Porzana parva*), Ringed Plover (*Charadrius hiaticula*), Terek Sandpiper (*Xenus cinereus*), Bluethroat (*Luscinia svecica*), Penduline Tit (*Remiz pendulinus*), Azure Tit (*Parus cyanus*).

The Pripyat floodplain is also an internationally important site in that it hosts a number of rare and disappearing European bird species, corresponding to the Ramsar 2a Criterion. Most important is that the site hosts constant and large populations of the following globally threatened species: Aquatic Warbler (*Acrocephalus paludicola*) (150-400 individuals), Spotted Eagle (15 pairs), Corncrake (*Crex crex*) (500-2000 individuals), Great Snipe (*Gallinago media*) (50 individuals). Sporadic nesting of Ferruginous Duck and irregular stop-overs of Lesser White-fronted Goose *Anser erythropus* were also registered on the site.

The Pripyat floodplain presents great importance for conservation of a whole range of other bird species that have been declared threatened in Europe. It is here that main habitats of such species are concentrated. These habitats, which have disappeared in other parts of Europe, are: lowland (fen) sedge and reed mires, large regularly flooded meadows, floodplain oak forests. More than 1 per cent of the European population of the following bird species breed here: Bittern (*Botaurus stellaris*, 300 males), Black stork (50-70 pairs), Black Tern (*Chlidonias niger*, 500-1000 pairs). For 27 bird species the area supports more than 1 per cent of their national populations.

The Pripyat floodplain is the largest breeding center of huntable Belarusian waterfowl, such as Mallard (*Anas platyrhynchos*, 14,585 pairs), Gadwall (*Anas strepera*, 688 pairs), Garganey (*Anas querquedula*, 10,562 pairs), Shoveler (*Anas clypeata*, 825 pairs). In years with prolonged spring floods it is commonly inhabited by Pochard (*Aythya ferina*, 1,169 pairs) and Coot (*Fulica atra*, 1,513 pairs).

The floodplain of the Pripyat river has a special international value for a number of waterfowl species during their spring migration. The Polesie Lowland is one Europe's largest channels of spring migration of birds, with the Pripyat floodplain been its core way. This migration route coincides with the boundaries of several large glaciations, which, most obviously, determined the formation of the migration route during the Pleistocene period. The route goes from west to east, which is different from traditional north- and north-west bound directions of migration of most terrestrial birds flying over Eastern Europe. The overall number of geese migrating along the Pripyat floodplain is estimated at 50 thousand individuals. The same figure for Widgeon (*Anas penelope*) is estimated to be 30,000. Spring migration period in the Pripyat floodplain varies from 15 to 55 days in different years. Mass migration of geese is traditionally observed to continue for 14 days (Kozulin et al., 1997). Spring migration is dominated by White-fronted Goose (*Anser albifrons*) with 84 per cent. The share of Bean Goose (*Anser fabalis*) is significantly smaller (13 per cent). Grey-lag Goose (*Anser anser*) and Lesser white-fronted goose are quite rare on their spring migration flight (1.6 per cent).

This part of the Pripyat floodplain presents favorable habitat conditions for various **amphibian** and **reptile** species. Almost all representatives of Belarusian herpetofauna (16 species) have been noted in this area. These include such rare species as Pond Tortoise (*Emys orbicularis*), Natter Jack Toad (*Bufo calamita*), and Tree Frog (*Hyla arborea*).

**37 fish** species have been registered in the Pripyat and in the floodplain water bodies. The Pripyat plays one of the most important roles in the fishery industry of the country. Commercial catches include 22 fish species, such as Pike *Esox lucius*, Roach *Rutilus rutilus*, Golden Orfe *Leuciscus idus*, Rudd *Scardinius erythrophthalmus*, Aspigo *Aspius aspius*, Tench *Tinca tinca*, Chondrostoma *Chondrostoma nasus*, White Bream *Blicca bjoerkna*, Carp-bream *Abramis brama*, species of bream *Abramis sapa*, Zope *Abramis ballerus*, Sichel *Pelecus cultratus*, Crucian Carp *Carassius carassius*, Goldfish *Carassius auratus gibelio*, Common Carp *Cyprinus carpio*, European Catfish *Silurus glanis*, Burbot *Lota lota*, Pike-perch *Stizostedion lucioperca*, Common Perch *Perca fluviatilis*, Popes (*Gymnocephalus cernua*, *Gymnocephalus baloni*, *Gymnocephalus acerina*). Sporadic registrations of some of the far-eastern plant-eating fish species and Common eel (*Anguilla anguilla*) have been made. The part of the river from the mouth of the Bobrik river to the mouth of the Stviga is most valuable for conservation of fish species diversity. Here the largest spawning grounds of most of the species breeding in the river are found. Besides, estimates show that such National Red Data Book species as Sterlet (*Acipenser ruthenus*) and Barbel (*Barbus barbus*) can also breed here. Balon pope (*Gymnocephalus baloni*) which was formerly believed to be a Danube endemic species, also breeds here. The part of the river in question has a special value for the populations of European catfish (*Silurus glanis*), which only in 1993 was removed from the National Red Data Book. The biggest number of this species has been registered in the mouth of the right-bank tributary of the Pripyat, the Goryn' river. It is

necessary to add that narrowing of the floodplain during anti-flooding campaigns has led to significant worsening of conditions for spawning, as well as to decline in the size of catches.

**19. Social and cultural values:** Since pre-Christian times the floodplain of the Pripjat river and adjacent territories have been known for concentration of farming, crafts and spiritual culture of the whole Polesie region. The region hosts one of Belarus' largest complex of high-yielding rendzina soils with a total area of 45,000 ha. The sufficiently humid and warm conditions favored formation on this territory of an exclusively diverse animal and plant world. It is here that farming first started in Belarus. Good climatic conditions were noted by people, who built their numerous dwellings along the border of the Pripjat floodplain. Today the floodplain of the river hosts the biggest share of remaining natural landscapes. Besides the wide presence of archeological monuments natural landscapes also bear a historical and cultural value. Here traditional crafts and people's folklore retained much more of their initial substance than they have in any other part of Belarus.

The Pripjat floodplain still plays a very important role in the life of indigenous people. Fishing is practiced by local population all the year round. The floodplain is the main source of timber used as a construction material and as a fuel. Massive floodplain meadows of the Pripjat are used as pastures and for hay-making. Apiculture is still quite wide-spread in the area.

The Pripjat and its tributaries are main sources of water for 7 large fishfarms and a number of industrial enterprises. The use of water resources in the Pripjat basin is about 12 per cent of the average multi-annual flow volume.

The Pripjat floodplain is a nationally important recreation center. People from all over the Republic come here for resting, fishing, and hunting.

## **20. Land tenure/ownership of:**

### **(a) site**

State ownership prevails in the land tenure structure. There are 57 legal land-users on the territory of the Mid-Pripjat Zakaznik, including 35 collective and soviet farms (kolkhozes and sovkhozes), 8 village councils, 4 forestries, 2 private farms, the Dnieper-Bug Waterway Enterprise, a recreation center. Waters of waterbodies are included in the reserve land- and water-stock of district executive committees.

### **(b) surrounding area**

Surrounding forests and farmlands are of the State ownership.

## **21. Current land use:**

### **(a) site**

About 14 per cent of the area is used in agriculture, mainly hay-making and cattle pasturing. These are mainly floodplain meadows and mires. They are being used with very low intensity, which leads to overgrowing of open tracts with shrubs.

The qualitative characteristics of the agricultural lands of the Zakaznik are slightly better than in the region in general, but their development is unprofitable for the high cost and amount of labor needed for hydro-amelioration works. The latter are also unallowable in terms of ecology.

Separate, mostly elevated, floodplain parcels are illegally plowed by local people. Despite the fact that these are mostly insignificant (in terms of fauna and flora) areas, further expansion of arable lands within the floodplain boundaries should be stopped. Plowing of land on the territory of the Zakaznik is prohibited by special regulations established for land-users of the Zakaznik.

Forests cover 22.7 per cent of the area of the Zakaznik. The use of forests of the Zakaznik is delegated to the Pinsk, Stolín, Luninets, and Zhitkovichi forestries. All forests belong to Groups 1 and 2. First Group forests further fall into 5 different categories. These are green zone forests (6.5 per cent of all forests), forests of water conservation strips along rivers (36.2 per cent), and forests of buffer strips along motorways and railroads (24.5 per cent). At 1,908 forest plots with a total area of 7,506 ha tree logging has been prohibited for one reason or another. Economic forests of the second group cover 32.7 per cent of the wood stock. Part of the forested area is radioactively polluted (802 ha), but the level of contamination is low: 1a zone.

The Pripyat channel is used for shipping. However, the intensity of this industry has declined considerably over the last decade.

The Pripyat is well known for its use in the fishing industry. In some years the fish catch in the Pripyat was as high as 400 tons. Fish catch per 1 km of the river averages 600 kg, which is significantly higher than for any other river of Belarus. Fishing is done both on an organized economic basis (as an industry) and by local population. Industrial catches include 22 fish species. At the same time, fish resources of the river present an important source of food for local people.

The Pripyat floodplain presents wonderful grounds for hunting local and migrating waterfowl, better than in any other part of Belarus. Depending on dryness level of the year and on breeding success of birds average catch of a hunter on the opening day may vary from 25 to 3 ducks (data over 1995-2000).

One of the traditional economic activities still practiced in the Pripyat floodplain is apiculture.

#### (b) surroundings/catchment

Intensive agriculture, forestry and fishery

## 22. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land use and development projects:

### a) at the site

**Climate change.** Because of the decrease in winter precipitation and radical climate changes the last decades have experienced years with no spring flood, or vice versa with extremely high spring floods and summer inundations. Absence of a flood or long-term inundation of the floodplain during the vegetation period (due to summer rainfalls) leads to sharp changes in the functioning of the floodplain ecosystem. This causes alterations in the vegetation structure, disturbances in the distribution and density of bird species, worsening of conditions for spawning of fish.

**Embankment works.** According to the estimates of the GIDROVELIOVODKHOZ Institute, embankment of the Pripyat floodplain will result in water rise by 1.4 m during floods at the part of the river between cities of Pinsk and Turov. This will lead to inundation of previously water-free land plots and changes in plant and animal world. Currently not all of the river has been subjected to embankment, but even partial narrowing of the floodplain leads to inundation of former water-free areas. The resulting prolonged flooding of floodplain forests during the vegetation period has already brought about drying out of oak forests in Mikashevichi and Zitkovichi districts.

**Burning of vegetation.** Burning of vegetation has serious consequences for vegetation and animals. Most negative impact is observed during dry springs with no floods, when burning destroys not only the vegetation but also the upper soil layer together with plant roots and insects. Burned mires are no longer used by birds for breeding. This is equally true for globally endangered species, such as Corncrake and Aquatic warbler.

**Wood cutting.** According to the existing legislation the water conservation zone covers area on both river banks within a 3 km distance from the river channel. As a result substantial forest stands located in the floodplain beyond the 3 km distance, are used intensively in forestry. The regime of forest use in the water conservation zone itself is not observed properly.

**Overgrazing.** Natural vegetation communities on numerous floodplain parts suffer from pasture digression resulting from overgrazing. This leads to changes in the vegetation structure of meadows, destruction of young growing forests.

**Shrub encroachment.** Numerous open fen parts in the Yaselda and Styr' mouths, as well as many floodplain meadows suffer from encroachment of shrubs resulting from cessation of haymaking,

**Unsustainable fishing.** A drop in the size of catch of large predator fishes from the Pripyat river has been observed over the last 10 years. One of the possible reasons of this fact is unsustainable fishing, including poaching during the spawning period. Additionally, a decline in the catch size of certain fish species may be

attributed to disturbances in the breeding conditions, which in turn, are brought about by the changed dynamics of the spring floods on drained catchments. More rapid discharge of flood water into the channel of the Pripyat river leads to reduction in the flood duration time. The latter fact causes drying out of eggs of the fishes which spawn in the area traditionally flooded in early spring.

#### b) around the site

**Anti-flooding projects.** In 1978 in order to solve the flooding problem the Government of the Republic of Belarus together with BELGIPROVODKHOZ Institute and 17 other research and project institutes developed a document called "Scientific and Technical Background for Amelioration and Engineering Works to Protect the Pripyat Floodplain against Floodings". In 1980 this document was revised to take account of the latest scientific studies and outcomes of integrated ecological reviews. The revised "Background" document envisaged construction of embankments to protect about 152,000 ha (provided that the overall floodplain area was 425,000 ha). The plot to be protected included about 150 dwellings, communication facilities, industrial enterprises and other constructions. In accordance with a contract with the World Bank, signed in 1994, BELGIPROVODKHOZ Institute developed technical documentation for protection of human dwellings and agricultural lands against floodings, reconstruction of infrastructure facilities, repair of water supply and use systems, and amelioration of lands in 8 districts of the Belarusian Polesie located in the catchment of the Pripyat river. By now the activities foreseen in the Background documents have been completed only partially. The project elaborated in cooperation with the World Bank has never started. There is a danger that once this projects start, the biodiversity of the site will be seriously damaged. In the current situation all project that presuppose construction of dams and/or embankments in the Pripyat floodplain should be subject to wide discussion not just within state agencies but in a much broader forum, including the public and NGOs.

In 1998 The Government of Belarus has adopted a 5-year program of introduction of a flood preventino scheme in the Prypiat region, but the program is not in place for a reason of lacking funds.

**Intensification of water use.** An allowable volume of water resources that can be used for economic purposes should stay within 10-25 per cent of all water resources of a river. The use of water resources in the Pripyat catchment is about 12 per cent of the average multi-annual flow. Most of the water is used in fishery (40 per cent) and industry. This means that the water consumption is close to a mark beyond which (and provided it is growing) it can lead to negative ecological consequences for the river system. Irrecoverable water consumption in the Pripyat catchment is about 5 per cent of the average yearly flow.

**Water pollution.** Main sources of pollution in the Pripyat catchment are thermal power plants, wood-processing factories, pulp mills, enterprises of light and food industries, agriculture (arable farming and cattle breeding), and the municipal sector. Almost all water quality indicator have shown downward trends over the last decade. Most remarkable are increases in the content of mineral N, P, and suspended matter. Oil products, phenols and copper have exceeded their maximum allowable concentrations by content. This means a higher runoff of biogenic substances from agricultural fields, growth in the amount of municipal liquid discharge, more rapid development of the industrial sector.

**Amelioration.** By now about 20 per cent of the floodplain area have been ameliorated. Amelioration facilities of polder types dominate. Negative consequences of amelioration include not only reduction in the area of natural floodplain biotopes, but also significant disturbances of the hydrological regime of the surrounding areas. Polder construction has seriously impacted some of the floodplain forests, which thus became cut off from the river. Over-wetting as a result of disruptions in natural flow regime has led to mass desiccation of ripe ash and alder forests in the Turov-Liadets forest complex, the largest one in the Pripyat basin. Construction of another two amelioration facilities is currently going on in the floodplain. These are facilities in the floodplain of the Vetlitsa river (Stolin district) and facilities to the north of village Malishev (Zhiktovichi district).

**23. Conservation measures taken:** Before 1999 several small zakazniks existed in the area, including the Lower Yaselda Zakaznik (6,733 ha), the Lan' Mouth Zakaznik (288 ha), the Lower Sluch' Zakaznik (3,313 ha). About 65,943 ha were not covered by protection. The Cabinet of Ministers' Decree # 1105 dated July 19'1999 pointed out the ecological singleness of the Pripyat floodplain and its international importance for preservation of biodiversity and established on that basis a new National Landscape Mid-Pripyat Zakaznik, which encompassed all smaller zakazniks and areas formerly not covered by protection.



The following activities are prohibited at the Mid-Pripyat National Landscape Zakaznik:

- Activities leading to changes in natural landscape and threatening the existing hydrological regime (excluding works related to reconstruction and exploitation of acting drainage systems and anti-flood installations);
- Disturbance of the natural soil cover (excluding lands used in agriculture);
- Dumping of polluted and poorly purified wastewater, industrial and municipal wastes into water bodies;
- Clearance of water and riparian vegetation (except for land plots where this has been officially allowed);
- Establishment of tourist camps, fires, car parkings in places where this is not allowed; driving outside roads, except vehicles used in agricultural and forestry activities;
- Main purpose clear and successive felling in pine, oak, ash, and hornbeam forests;
- Main purpose felling and cattle pasturing in many most valuable forest openings;

Construction of buildings, power lines, roads, pipelines and other engineering facilities, clearance of river channels, mining of wide-spread minerals may be effected on the territory of the Zakaznik for economic purposes exclusively in line with the legislation of the Republic of Belarus, in coordination with the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, and the Ministry of Architecture and Construction of the Republic of Belarus.

**24. Conservation measures proposed but not yet implemented:** Most of the problems in the Mid-Pripyat Zakaznik arise from the fact that huge mire areas within the catchment boundaries were drained and the floodplain was narrowed as a result of embankment meant to prevent inundations. In order to be able to solve these problems it is necessary to develop a management plan for the Mid-Pripyat Zakaznik which will in the first place allow for fighting such threats as water pollution and changes in the hydrological regime of the tributaries, brought about by amelioration of the catchment area and intensification of land- and water-use. To this end the Ministry of Natural Resources and Environmental Protection has developed several project proposals.

Land-use regulations in force on the territory of the Zakaznik exclude any type of draining amelioration and burning of vegetation in spring. One of the main constraints for economic activities in these areas should be abolishment of spring hunting. It has also been proposed that local hunting organizations should at their discretion introduce areas free of hunting for summer and autumn hunting periods as well.

Additionally it would be expedient to introduce absolute abolishment of draining amelioration in the Pripyat floodplain, put further constraints on agricultural activities in this area, develop regulations on timing of hay-cutting and cattle pasturing, significantly reduce (or even prohibit) the use of poisonous chemicals, provide for obligatory employment of environmentally safe technologies in application of fertilizers.

**25. Current scientific research and facilities:** The site is a regular scientific ground used for research in different area. Its scientific value has grown especially after comprehension of the crucial role of past drainage (1960-1970) in transformation of natural ecosystems. Most detailed description of the hydrology, soils, geology, flora, and fauna of the site was done in 1980 when background for construction of embankments along the Pripyat channel was being developed. This research has involved participation of the scientific institutes of the National Academy of Sciences; a number of ministries; Brest, Gomel, and Belarusian State universities. However, the intensity of the research has dropped significantly in early 1990 for the lack of funding. The National park Pripyatski at the eastern border of the site represents a local-level research institute with limited scientific expertise, insufficient equipment and laboratories. The modern ecological state of the Pripyat catchment has been described in the technical-and-economic background for hydro-amelioration works to prevent inundations. The background was compiled by an expert group representing several scientific institutes. Modern condition of flora and fauna of the Pripyat floodplain was studied during development of a background for establishment of National Landscape Zakaznik "Mid-Pripyat", as well as in preparation of description of the Pripyat floodplain according to Ramsar criteria. Currently the significance of the Common Snipe and the Great Snipe is being investigated in the Pripyat river floodplain in the framework of an OMPO-funded project "The designation and management of key habitats for the Common Snipe *Gallinago gallinago* and Greit Snipe *Gallinago media* in Belarus". In order to be able to solve the problems of the Pripyat region which appeared after drainage of the largest part of the catchment, it is necessary to establish close cooperation between various institutes and organizations. The core idea of all projects on the site should be conservation of the biodiversity of the region alongside with

meeting social and economic demands. The problems of the region have been by now well studied and discussed at numerous conferences. The main deficiency of the current scientific research is its scattered character and lack of a single coordination center.

**26. Current conservation education:** Conservation education started to develop only recently. Raising awareness of local people on the significance and value of the site was initiated during compilation of the background for establishment of National Landscape Zakaznik "Mid-Pripyat". Several special posters were produced, a number of articles was placed in local newspapers. Those activities were funded by the Michael OTTO Foundation for Environmental Protection (Germany). One of the outcomes of the International Conference on conservation of river floodplains and lowland mires of the Polesie region was decision by its participants that more effort should be directed towards development of environmental awareness of local population. In 1998 with the support of the Royal Society for the Protection of Birds (RSPB, UK) a feasibility study for establishment of a local eco-center in the town of Turov was done. The center would ensure dissemination of information on and popularization of the value of the Pripyat floodplain for conservation of global biological diversity.

At present information campaigns on the international value of the Pripyat are organized by National NGO BirdLife Belarus (APB, Akhova Ptushak Belarusi). This includes production of films and videos, posters and other printed products, holding of lectures, placing articles in mass-media.

**27. Current recreation and tourism:** Riverside biotopes, water bodies, and – in a less degree – forests are used by local population for recreation (low-scale and unorganized). Organized recreation and tourism are currently established only in the Pripyatski National Park bordering on the site in question. Limited activities in organization of visits of tourist groups from outside Belarus (mostly Western Europe) have been accomplished by district branches of National Society of Hunters and Fishermen.

Potential value of the Zakaznik for development of ecotourism is high due to presence of unique landscapes and animals. The waterway can also be used for getting to any place in the floodplain, which is another advantage favoring development of ecotourism on the site.

**28. Jurisdiction:** Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, Ul. Kollektorknaia 10, 220048 Minsk, Belarus  
Brest Region Committee of Natural Resources and Environmental Protection, Ul. Malaia 3, 224013 Brest, Belarus

**29. Management authority:** National Landscape Zakaznik "Mid-Pripyat" is managed by Pinsk, Stolin, Luninets, and Zhiktovich district executive committees, as well as the Ministry of Forestry of the Republic of Belarus. Protection activities are effected by district executive committees, State Forest Guar, in cooperation with nature-conservation organizations.

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