4.5. Potential Impact on Biodiversity

4.5.1. Information about Biotope Conditions

The Cernavoda NPP site is a built area. There are some arranged green areas inside, with small vegetation.

Outside the NPP site, at a larger scale, the following types of terrestrial ecosystems (Ref. 4.5-1) have been identified:

- Agro-ecosystems, represented by agricultural crops, field areas with fodder plants and technical plants, vegetable gardens and animal farms. Relationships among species within this type of ecosystems are presented in Fig. 4.5.1-1.
- Natural terrestrial ecosystems, represented by forests, riverside thickets, water meadows, depleted unproductive land or salted land. The relationships among component species are presented in Fig.4.5.1-2.

There are also aquatic ecosystems, as shown in chapter 4.1, where they were presented in detail.

Species in ecosystems can be grouped according to general trophic levels:

- Primary producers, including all the types of cultivated or natural vegetation.
- Order I consumers, which include: phytophagous insects, rodents, birds feeding with seeks and other vegetation, as well as herbivorous mammals.
- Order II consumers, which include: carnivorous insects, mammals which eat up insects, carnivorous mammals, man.
- Bacteria which decompose the excess of organic matter, as part of the cycle within the ecosystem.

There are not any protected areas in the Cernavoda NPP site. Protected areas in the region are presented at the end of Chapter 4.5.3.

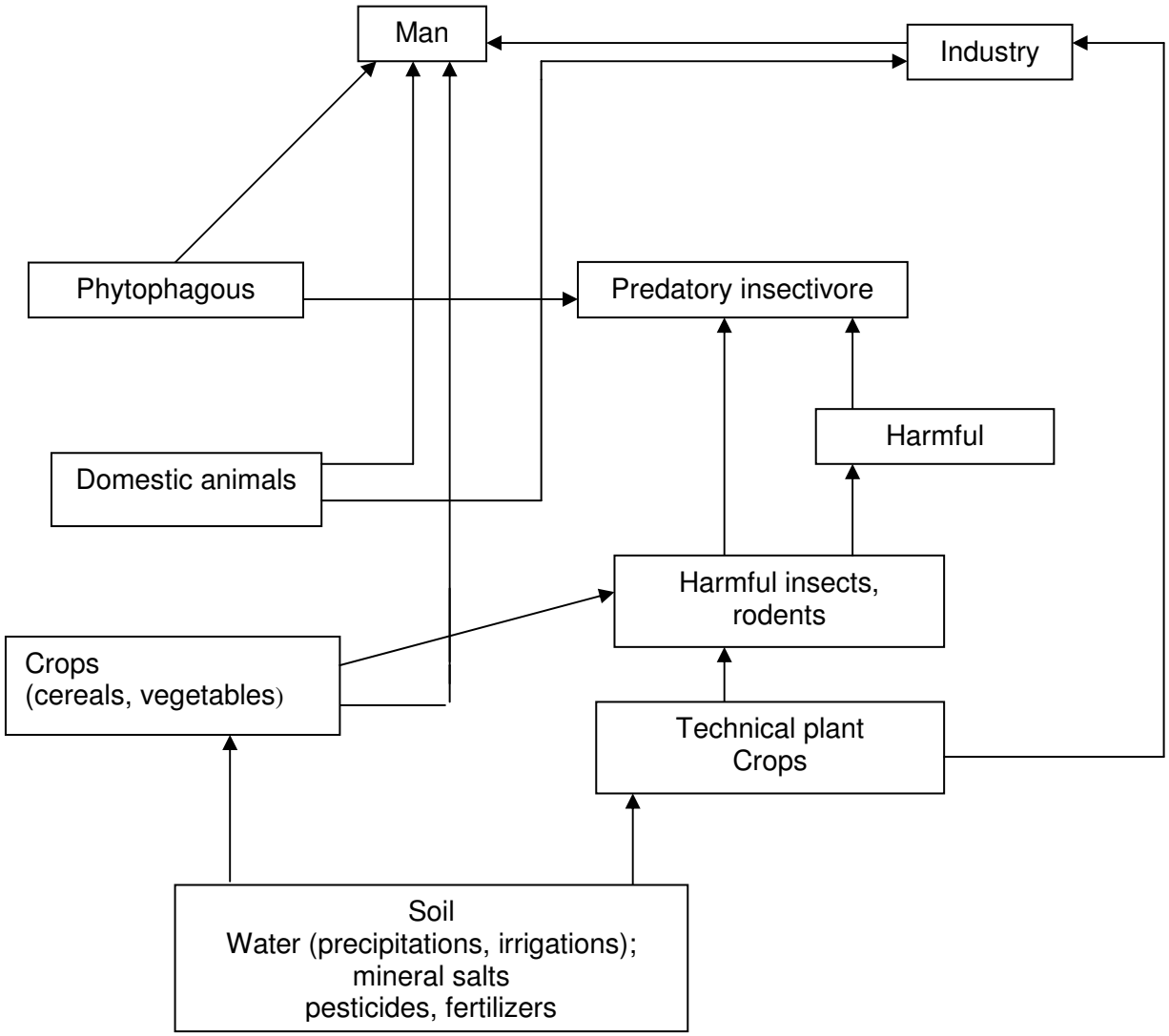


Figure 4.5.1-1. Trophic structure of an agro-ecosystem

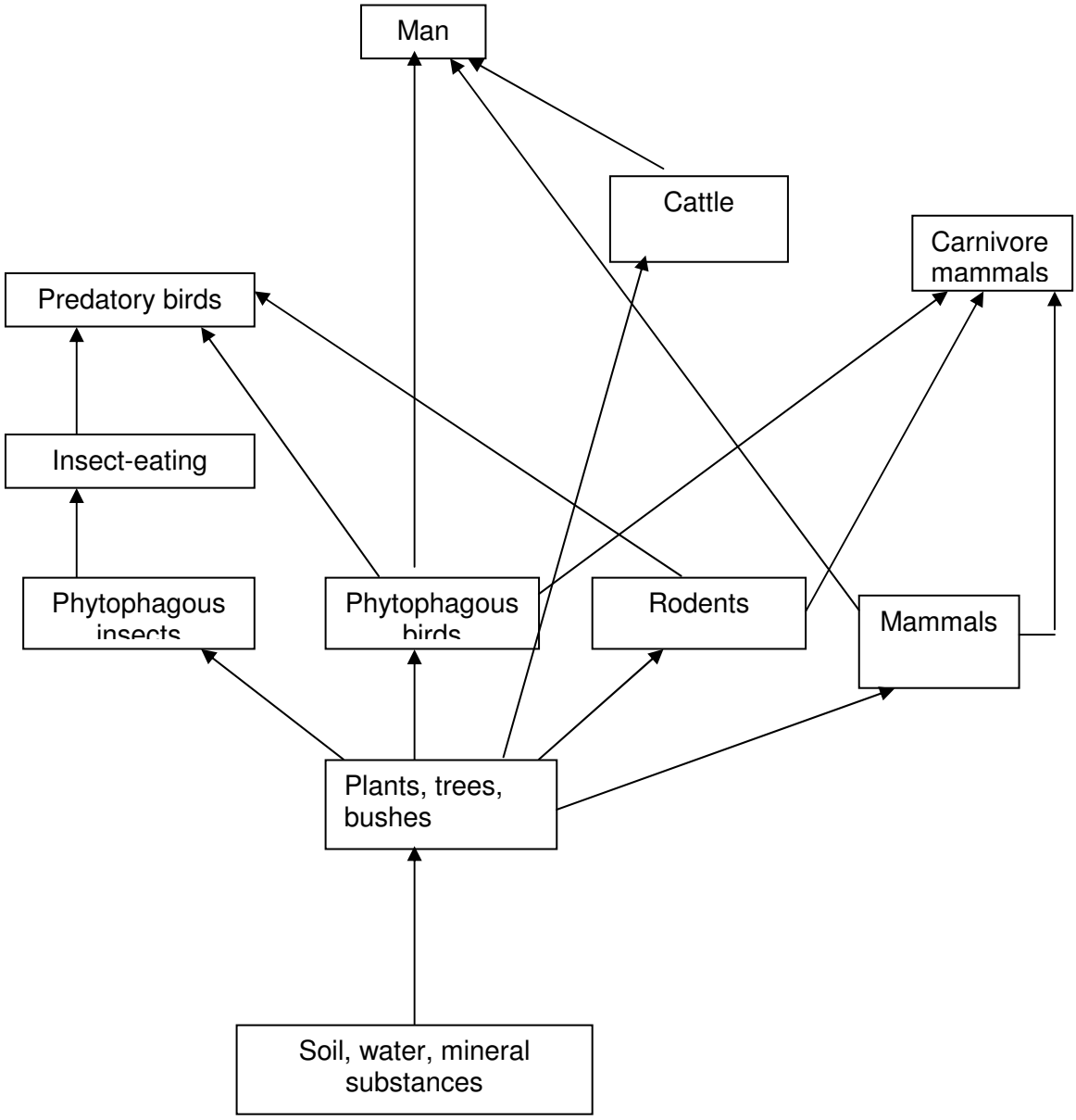


Figure 4.5.1-2. Trophic structure of terrestrial ecosystems

4.5.2. Flora

Within the Cernavoda NPP site, there is vegetation on the arranged green areas.

At a larger scale, outside the Cernavoda NPP site, there are agricultural crops (dominant), depleted meadows, vineyards and orchards, all of them spotted by isolated small patches of forest made up of acacia trees and poplar trees.

In the area neighboring the site to West-North-West, towards Cernavoda Town, the land is mainly covered by depleted vegetation.

The flora species are various, and they are presented here for geographical sectors (Ref.4.5-2, 4.5-3).

For the north and north-north-east sectors, the greatest community is represented by the acacia trees located on a plateau and Canadian poplar tree located on valleys. On extended surfaces beyond the forest, there are agricultural crops mixed with unproductive land covered by depleted vegetation. The main species of spontaneous flora are: Bromus sterilis, Bromus squarrosus and Aegilops cylindrica accompanied here and there by species such as Asparagus officinalis, Ballota nigra, Anagallis arvensis, Chenopodium album, Cirsium vulgare, Conyza canadensis, Canabis ruderalis, Convolvulus sp, Centaurea diffusa, Amaranthus albus, Papaver rhoeos, Linum austricum, Hordeum murimum.

In the north east sector, eastwards from the outskirt of the forest, there is a depleted meadow in which the dominant species is Botriochloa ischaemum, along with some other random species such as: Stipa capillata, Artemisia scoparia, Centaurea kanitziana, Linum austriacum, Cichorium intybus, Daucus setulosus, Brassica elongata, Salvia nemorosa, Euphorbia sequierana. The northern boundary of the sector is an agricultural land covered by crops.

The NE, E, ESE and SE sectors stretch on an area with cultivated land and small vineyards. The areas of natural meadows are generally small and include the same species, such as Botriochloa ischaemum.

The SE sector includes natural vegetation on the abrupt slopes such as Festrica Vallesiaca and some other ligneous species (e.g. Morus alba, Acer tataricum, ulmus) and herbaceous species (e.g. Kochia prostrata, Allium tauricum, Stipa capillata, Poa bulboza, Euphorbia sequierana, Achillea coarcatata, Solanum dulcamara).

The S, SSW, SW,W,WNW sectors include a part of the Danube- Black Sea Canal, and comprise mainly land covered by vineyards, up to Cochirleni Village. Close to the Danube, in the western sector, there is in extended surface covered by Canadian poplar (Plopulus canadensis) and few acacia trees spreading on terraces. Among the herbaceous species, there are: Dactylis glomerata, Mentha sp., Poa annua, Urtica dioica, Rorippa sylvestris.

On the direction of NW and NNW sectors, there is the Town of Cernavoda, and, partially close to the Site, there is also a forest mainly consisting of acacia trees (Robinia pseudacacia) and Crataegus monogyna, Prunus mahaleb, Pyrus sp., Ulmus sp., Quercus cerris, Acer sp. The herbaceous layer is rich in spontaneous flora, the Lolium perenne being the dominant one.

The flora and fauna structure was analyzed (Ref. 4.5-1) more detailed for terrestrial representative ecosystems (areas with an ecological stability, and less influenced by man intervention): Platonesti forest, Cernavoda forest, Mircea Voda forest, Allah-Bair hill and Alimanu (Vlahi) forest.

The **Platonesti forest**, located in the NW and NNW side of studied area, upon the Ialomita terrace, was planted 50 years ago in order to fix the sand dunes. The dominant species is locust tree (Robinia pseudacacia), beside flowering ash (Fraxinus ornus), Tartarian maple (Acer tataricum), hedgethorn (Crategus sp.), privet bushes (Ligustrum vulgare), Turkey cherry (Prunus mahaleb), Cornus sanguinea.

The herbal forest is poor like species number as well as individual number. In spring and autumn there is a carpet, consisting of short vegetation period species as: Poa anua, Bromus sterilis, Hordeum murinum and Bromus squarrosus. Most of these species are adapted to dry climate of Baragan.

In the lowest places, between the dunes, there are, less frequently, the following species: Chondrilla juncea, Erysimum diffusum, Geranium pusillum, Cynodon

dactylon, Chenopodium album, Pontentilla argentea, Poa compressa, Conyza canadensis, Urtica dioica and Galium humifusum.

On the dunes, the vegetation is poor, consisting of rare individuals of: Euphorbia, seguierana, Artemisia austriaca, Centaurea arenaria, Bromus squarrosus, Crepis tectorum, Veronica triphyllos, Gypsophila paniculata, Petrorhagia prolifera and Bugllossoides arvensis sibthorpiana.

In the places where there were sheepfold, some wild herbs species are growing: Urtica dioica, Carduus nutans, Chenopodium album, Atriplex patula, Ballota nigra, Cannabis ruderalis, Polygonum aviculare, Onopordum acanthium, Sysimbrium orientale, Cardaria draba, Conium maculatum .

In the forest eastern side grows an endemic species, in extermination danger because of grazing Ornithogalum orthophyllum Ten. Subsp. Psammophilum Zahar.

The **Allah-Bair hill**, located in the N, NE of studied area, consists of Mesozoic limestone. A steppe meadow developed here, with a special flora. The west side was intensively afforested, and the est side is under cereal crops.

Because of intense afforestation, the Allah Bair hill is enclosed by a barbed wire, in order to stop the grazing. This is the reason why we can find here very rare species: Hedysarum grandiflorum, Sedum caespitosum, Ornithogalum oreoides, Astragalus austriacus, A. corniculatus, Tenacetum millefolium, etc.

The xerophyle (steppe) vegetation, upon the afforested area, is seen like a stripe from the hill feet to the accidental areas. The stony and abrupt places, the detritus, form another vegetation steppe stripe, less dense.

The steppe vegetation is framed in the Bombycilaeno-Botriochloetum ischaemi association. The association matter consists of Dichanthium ischaemum (Botriochloa ischaemum), a dryness and grazing resistant plant. It has a strong rhizome, so it can regenerate following intense grazing and long dryness. The species that there are in this association are: Bombycilaela erecta, Campanula sibirica, Erysimum crepidifolium, Anthyllis vulneraria, Daucus guttatus setulosus, Buglossoides arvensis sibthorpiana, Poa bulbosa, Muscari racemosum, Taraxacum serotinum, Thlaspi perfoliatum, Cichorium intybus, Jurinea mollis, Thalictrum minus, Senecio vernalis,

Haplophyllum suaveolens, Centaurea kanitziana, Inula ensifolia, Scorzonera austriaca, Teucrium polium, Salvia nutans, Androsace maxima, Poa angustifolia, Echinops ruthenicus and Inula oculus-christi.

The detritus steppe vegetation is framed in the Pimpinello Thymion zygoidi association, with unique vegetale combinations. The species tacking part of this association there are: Thymus zygoides, Pimpinella tragium lithophila, Koeleria brevis, Dianthus nardiformis, Scutellaria orientalis, Hedysarum grandiflorum, Ornithogalum oreoides, grandiflorum, Gagea callieri, Dianthus pseudarmeria, G. taurica, Euphorbia nicacensis, Scorzonera mollis, Allium saxatile, Paronychia cephalotes, Campanula romanica, Ranunculus illyricus, Tanacetum millefolium, R. oxispermus, Alyssum saxatile, Achillea coarctata, Iberis sempervirens, A. leptophilla, Galium humirusum, Alyssum linifolium, Hornungia petraea, Carex humilis, Brassica elongata, C. liparocarpos, Acinos arvensis, Thlaspi perfoliatum, Hyacinthella leucophaea, Arabis recta, Veronica prostrata, Iris pumila, Adonis vernalis, Ganiolimon desserranum, Alyssum hirsutum, Minuartia bilykiana, Melica ciliata, Convolvulus cantabrica, C. lineatus and Euphorbia nicaeensis. These species are adapted for dryness, having special organs for resistance: bulbs, rhizomes, thicker roots, and tubers).

On the hill feet, in the Boascic flood plain, the herbal vegetation consists of : Lolium perenne, Poa angustifolia, Vicia angustifolia, Buglossoides glandulosa, Plantago lanceolata, Erophila verna, Poa bulbosa. In water and on the border develop: Potamogeton crispus, Zannichellia palustris, Catabrosa aquatica, Glyceria fluitans.

The bushes from the west and northern side can be framed in the Orno-Continentalia association. The component species are: Crataegus monogyna, Prunus spinosa, Fraxinus ornus, Carpinus orientalis, Acer tataricum, Viburnum lantana, A. campestre, Cornus mas, Rosa pimpinellifolia, Pyrus Pyraster, R. gallica Prunus malaheb, Poa compresa, Lingustrum vulgare, Asparagus verticillatus, Crataegus curvisepala, Potentilla erecta, Clematis vitalba, Poa bulbosa, Thalaspi perfoliatum, Solanum dulcamara, Valeriana officinalis, Cotoneaster niger and Vinca herbacea. These bushes were cleared, and terraces were carried out and different wood species were planted in their place.

The planted forest from Allah Bair consists of many wood essences. Some of them have protecting role: Rosa sp., Fraxinus ornus, Cornus mas., Cornus sanguinea, Crataegus sp., the main essence being Pinus silvestris.

The wild herbs that are frequent in the area, there are: Linaria genistifolia, Origanum vulgar, Salvia nutans, Rapistrum perenne, Poa compressa, Xeranthemum annuum, Tanacetum corymbosum, Lamium amplexicaule, Dactylis glomerata, Camelina rumelica, Euphorbia nicaeensis, Consolida orientalis, Ceratocarpus arenarius, Bilberdykia convolvulus, Convolvulus arvensis, Galium tricorne, C. cantabrica, Glaucium, C. corniculatum, Chondrilla juncea, Buglossoides, Chondrilla arvensis, C. sibthorpiana, Sisymbrium orientale, Vicia peregrina, Adonis flammea, Ajuga chamaepytis, Amaranthus albus, Heliotropium europaeum and Caucalis daucoides. From these species, some of them grow in a high number of individuals (e.g. Brassica elongata, Sisymbrium orientale etc.), resulting on compact layers.

Because of biological stability break, some of speciese there are strongly infected by fungus. Brassica elongata is infected with Albugo candida and Peronospora parasitica, Rapistrum perenne is infected with Peronospora parasitica, Adonis flammea is infected with Puccinia recondita, Albuco candida and Amaranthus albus are infected with Albugo amaranthi, and Convolvulus arvensis is infected with Erysiphe convolvuli. Some fungus can result on plant deformations and the stopping of flowering and fruiting processes.

In the wheat crop from the est side of the hill there are only few wild herbs: Adonis vernalis, Angallis arvensis, Flammea, Ajuga chamaepytis, Agrostemma githago, Roseda lutea, Anchusa sp., Rapistrum perenne, Polygonum aviculare, Nigella arvensis, Papaver rhoeas, Nonea atra, Camelina rumelica, Sideritis montana, Sysymbrium altissimum, Carduus hemulosus, Centaurea cyanus, Chondrilla juncea, Chenopodium album, Caucalis lappula opulifolium, Bilderdykia convolus, Falcaria vulgaris, Sinapis arvensis and Stachys annua.

The most frequent are Centaurea cyanus and Bilderdykia convolus. In the corn crop there are Hondrilla Juncea, Euphorbia esula tomassiniana, Cynodon dactylon, Eragrostic minor, Heliotropium europaeum, Lathyrus tuberosus, Sorgum halepense, Setaria viridis, Tribulus terrestris and Xanthium italicum.

Along the rods there are some species as : Xeranthemum annuum, Xanthium spinosum si italicum, Lolium perenne, Cynodon dactylon, Agropyron cristaum pectinatum, Gallium humifusum, Sclerochloa dura, Hordeum murinum, Conium maculatum, Carduus acanthoides thoemmeri and Artemizia austriaca.

The **Cernavoda forest**, located in the easthern side of Cernavoda city, in the central part of the studied area, consists mainly of Robinia pseudacacia, and also Ailanthus althissima, Prunus mahaleb, P. spinosa, Ulmus sp., Maclura pomifera and Acer tataricum negundo.

The herbal plants form a discontinueous cover, consisting of:Bromus sterilis, Torilis arvensis, Geranium pussilum, Onopordum achantium, Sismbrium orientale, Carduus nutans, Achilea setacea, Ballota nigra, Marrubum peregrinum, Geum urbanum and Bromus hordeaceus.

In the south of Cernavoda - Constanta railway there is a vineyard plantation. This is located on the Carasu valley coast. The bottom of this valley is not cultivated and it is used as an access valley. Between the nineyard plantation and acces ways there are the following wild herb species: Nonea atra, Chondrilla juncea, Portulaca, oleracea, Reseda lutea, Tribulus terrestris, Poligonum aviculare, Sorghum halepense, Torilis arvensis, Sisymbrium orientale, Solanum nigrum, Setaria viridis, Solanum dulcamara, Salsola ruthenica, Solanum verticinata, Xanthium italicum, Senecio vernalis, Crepis foetida rhoeadifolia, Convolvulus arvensis, Xanthium spinosum, Bromus squarrossus, Amaranthus albus blitoides, B. tectorum, Eragrostis pumila, Conyza canadensis, Euphorbia esula tomassiniana, Digitaria sanguinalis, Lamium amplexicaule, Helioytopium europaeum, Cynodon dactylon, Lepidium perfoliatum, Chenopodium album, Lactuca serriola, Chenopodium opulifolium, Cirisium arvense, Euclidium siriacum, Eurodium cicutarium, Conium maculatum, Chorispora tenella, Achillea coarctata, Ballota nigra and Carthamus lanatus The most frequent species are Xanthium italicum, Sorghum halepense and Cynodon dactylon.

The most of these species (80 %) are annual, bi-annual and hibernating species. The Xanthium species have a great disemination power, because of their fruits that have a special structure (hooks).

The **Mircea Voda forest** is located in the E, ESE sector, on the left of Carasu Valley. The dominant species are Robinia pseudacacia, Fraxinus and Populus canadensis.

The herbal cover is weak and the flora is ruderal, with the following species: Urtica dioica, Anagallis arvensis, Conyza canadensis, Marrubium vulgare, Chenopodium album, Taraxacum officinale, Stellaria media, Cirisium vulgare, Anthriscus trichosperma, Potentilla reptans, Clematis vitalba, Sinapsis arvensisand Galium humifusum.

In the sunny areas is found Agropyron cristatum subsp. Pestinatum, beside other xerophyle species: Achillea coarctata, Bupleurum apiculatum, Astragalus cornutus, Erysimum diffusum, Daucus guttatus zahariadi, Achillea setacea, Teucrium polium, Euphorbia seguierana and Tenacetum millefolium.

The **Vlahii forest** (Forest from Alimanu) –Stirghina forest is located in the S, SW sector. Stirghina forest is located on the northern board of Vederoada Lake. The superior level is reprezented by Quercus pubescens, and the inferior one, shorter is reprezented by Carpinus orientalis. The less frequent species are Fraxinus ornus, Pyrus pyraster and Acer campestre.

The bush level consists of Cotinus coggygria, Cornus mas and Crataegus monogryna.

The herbal layer is poor developed because the strong shadow resulted on by the higher layers. In spring, the dominant species are Paeonia peregrina and Galanthus elvesi. In summer,the following tremophyle species develop: Carex hallerana, Piptatherum virescens, Carex michelli, Mercurialis ovata, Acinos rotundifolius, Vicia narbonensis, Alcea hirsuta, Alyssum murale, Asparagus verticillatus, Lychnis coronaria, Buglossoides purpureo-caeruleum, Poa augustifolia, Arum orientale, Vinca herbacea, Ajuga laxmannii and Iris sintenisii.

This kind of forest is found on the abrupt and easy coast. From the cost feet to the Vederoasa lake, on a thin stripe the dominant species Quercus pedunculiforma is found

The higher tree level consists of Quercus pedunculiforma, elm tree, tile and ash tree.

The lower level consists of Acer tataricum, Acer campestre and Pyrus pyrastar.

The bush layer consists of: Cornus mas, C. sanguinea, Crataegus monogyna, Ligustrum vulgare, Euonymus verrucosus. Se întalnesc de asemenea, liane: Hedera helix and Clematis vitalba.

The herbal layer is well developed and consists of: Alliaria petiolata, Mirrhoides nodosa, Vincetoxicum hirundinaria, Erysimum cuspidatum, Hesperis sylvestris velenovskyi, Geum urbanum, Lapsana communis, Polygonathum latifolium, Urtica dioica, Calepina irregularis, Carduus nutans, Anthriscus cerefolium, Sedum maximum, Rannunculus ficaria, Brachypodium sylvaticum, Ballota nigra and Buglossoides purpureo-caeruleum

In the area are found the following southern and mediteranean origin species: Centaurea napulifera, Crupina vulgaris, Rannunculus illyricus, Teucrium polium capitalum, Acinos rotundifolius, Trigonella gladiata, Muscari racemosum, Coronilla scorpioides, Viccia seratifolia, Alyssum hirsutum, Camelina rumelica, Lapulla patula, Crocus reticulatus, Lathyrus sphaericus, Orlaya grandiflora, L. cicera, Rumex tuberosus, Echinopus ruthenicus, Milium vernale, Koeleria nitidula and Inula oculus-christi.

4.5.3. Terrestrial Fauna

In the Cernavoda NPP site, fauna is less present.

At a larger scale, the terrestrial fauna existing in the zone around Cernavoda NPP have not very well defined spreading limits (Ref. 4.5-1).

Among the existent species, there are various phytophagous insects which are feeding with all the types of cultivated or spontaneous vegetation.

There are various amphibiens, and also various bird species. About 24 communities consisting of 200 species of birds have been observed over the zone.

The most spread mammals in the area are the rodents whose living environment is related to agricultural crops and forest vegetation.

The most representative species are the following:

Insects Class

Homoptera Order - parasiting the wheat crops;

Heteroptera Order - 90 % of the bugs that parasite wheat crops;

Coleoptera Order - parasite on cereal crops, wine cultures, potatoes, leafy trees;

Amphibia Class (Batrachians)

- Bombina bombina
- Rana ridibunda
- Pelobates fuscus
- Bufo viridis
- Hyla arborea

Reptile Class

- Tesduo graeca ibera
- Lacerta agilis
- Erix Jaculus
- Natrix natrix

Mammals Class

- Erinaceus europaeus
- Crocidura russula
- Talpa europaea
- Rhinolophus sp
- Lepus europaeus
- Capreolus capraeolus
- Microtus arvalis
- Rattus norvegicus
- Mus musculus

Aves Class

- Phasianus colchicus
- Perdix perdix
- Coturnix coturnix
- Columba sp
- Streptopelis turtur
- Anas anser

The situation of the wild fauna and flora is regulated by the Urgency Ordinance 236/2000, approved by Law 462/2001, with latter completions and modifications Law 345/2006 and others).

The structure of terrestrial fauna in the sectors is presented as follows:

NW, W sectors

The fields for living are: meadows, xerophyle forest, agricultural fields, flood plain vegetation and riverside coppice. Here live the following vertebrate species Nyctereutes procynoides ussuriensis Matschie, Lutra lutra, Emys orbicularis, Natrix tesselata), divers, herons, swans, storks, bald coot, wild ducks and geese, woodcocks, corncrakes, fishing eagle and Ondatra zibethica.

The invertebrates dominant species are:

- Gasteropode: Jaminia microtragus
  Hellicela candicans
- Acarians: Pachylaelaps tesselatus
  Schelaribates laevigatus
  Epricrius stellatus
  Epricrius menzeli
  Oppia sp.
  Pergalumna nervosus
  Chamobates cuspidatus
  Hypochtonuis rufulus
  Cunona sp.
- Araneide: Gnaphosidae sp.
  Oxyptila sp.
  Sitticus sp.
- Julide: Chromatoiulus uniliniatus
- Colembole: Isotoma notabilis
  Xenyllodes bayeri

Sminthurinus sp.
Xenylla humicola

N, NE sectors

The fields for living are meadows and xerophyle forests and agricultural fields.

The following species are found: Testudo graeca ibera Pall, Vipera ammodytes montandoni Boulenger and Mustella eversmani Les.

In the forest, the fauna is heterogenous, consisting of steppe and forest species. The following species are found: ground squirrel, steppe polecat, rabbit, roebuck, badger, squirrel, wild boar, fox, mufflon, pheasant (colonized), owl, cartal,(protected), lizard etc. Ondatra zibethica and Nyctereutes procynoides ussuriensis Matschie are also found. Beside the forest species, the fauna consists of elements adapted to agricultural systems: rabbit, steppe polecat (hunting species), steppe mouse (pest species).The typical birds are: partridge, quail, bustard.

Herpetofauna consists of sub-mediteranean elements as : tortoise of Dobrudja, river snake, earth frog, and endemic species : grivan of Dobrudja, striped green lizard.

The dominant invertebrates species are:

- Acarians: Nothrus palustris
  Oppia sp.
  Oribela cavatica
  Phthiracarus sp.
  Pergalumna nervosus
  Belba sp.
  Gustavia microcephala
  Uropodida

- Pseudoscorpions: Chthonius motasi
  Neobisium sp.

- Julide: Chromatoiulus uniliniatus

- Colembole: Isotoma notabilis
  Folsomia guadricelata
  Orchisella sp.
  Xenylla humicola

Center of the studied zone

The vertebrates are the same as in the N, NE sectors

The dominant invertebrates species are:

- Acarians: Oppia sp.
  Phthiracarus sp.
  Pergalumna nervosus
  Oribella cavatica
  Gustavia microcephala
  Uropochidae
  Scheloribatis laevigatus
  Trombidiidae
  Achipteria nitens
  Epicrius menzeli
  Zercon gurensis
  Cunaxa sp.
  Scutacaridae

- Colembole: Isotoma notabilis
  Onychiurus armatus
  Schoethella unguiculata
- Coleoptere: Chlorophorus varius
  C. sartor
- Lepidoptere: Anthocaris cardaminis
  Pieris napi
  Pieris rapae
  Colias croceus
  Inachis io
  Vanessa cardui

	Melitaea didyma
	Melitaea phoeba
	Melitaea trivia
	Melitaea athalia
	Bolaria euphrosyne
	Bolaria dia
	Argynnis lathonia
	Argynnis niobe
	Argynnis adippe
	Argynnis charlotta
	Argynnis paphia
- Oligochete:	Fridericia bulboasa
	Fridericia bisetosa
- Gasteropode:	Jaminia microstragus
	Bulgarica cana
	Helicella striata
	Truncatillina cylindrica
	Vallonia pulchella
	Helicella candicans
	Corychium minimum
- Opilionide:	Lacinius horridus
- Aranee:	Zelotes latreillei
	Philodromus histrio
	Dolomedes finibriatus
	Argiope bruennichi
	Linyphia clathrata
	Lepthypantes flavipes
	Oxyptila sp.
	Thomisidae

E, ESE Sectors

The vertebrates are the same as in the N, NE sectors.

The dominant invertebrates species are:

- Acarians:	Oppia sp.
	Pergamasus theseus
	Pergamasus crassipes
	Pergamasus alstoni
	Nelacarus septentrionalis
	Oribella cavatica
	Uropochidae
	Scheloribatis laevigatus
	Belba sp.
	Hypochtonius rufulus
- Colembole:	Isotoma notabilis
	Isotoma viridis
	Onychiurus subcancelatus
	Xenilla humicola
	Onychiurus armatus
	Lepidocyrtus lignorum
	Lepidocyrtus cyaneus
	Lepidocyrtus sp.
	Tomocerus vulgaris
	Pseudosinella imparipunctalis
	Pseudosinella sp.
- Isopode:	Trochelipus rathkii
	Armadillidium vulgare
- Coleoptere:	Staphylynida
- Lepidoptere:	Anthocaris cardaminis
	Pieris napi
	Pieris rapae

Colias hyale
Pontia daplidice

- Oligochete: Fridericia ratzeli
Fridericia leydigi
Dendrobacna sp.

- Gasteropode: Jaminia microstragus
Manacha cartusiana

- Aranee: Lepthyphantes flavipes
Oxyptila praticola

- Chilopode: Lithobius crassipes

- Pseudoscorpioni: Chthonuis romanicus

S, SW sectors

The vertebrates are the same as in the N, NE sectors. Here is found the areal limit for the pheasant.

The dominant non-vertebrates species are:

- Acarians: Oppia sp.
Ceratozetis furcatus
Oribella cavatica

- Colembole: Tullbergia craussbauri

- Coleoptere: Chlorophorus varius
C. sartor

- Julide: Chromatoiulus trans-sylvanicus

- Lepidoptere: Anthocaris cardaminis
Pieris napi
Pieris rapae
Colias hyale

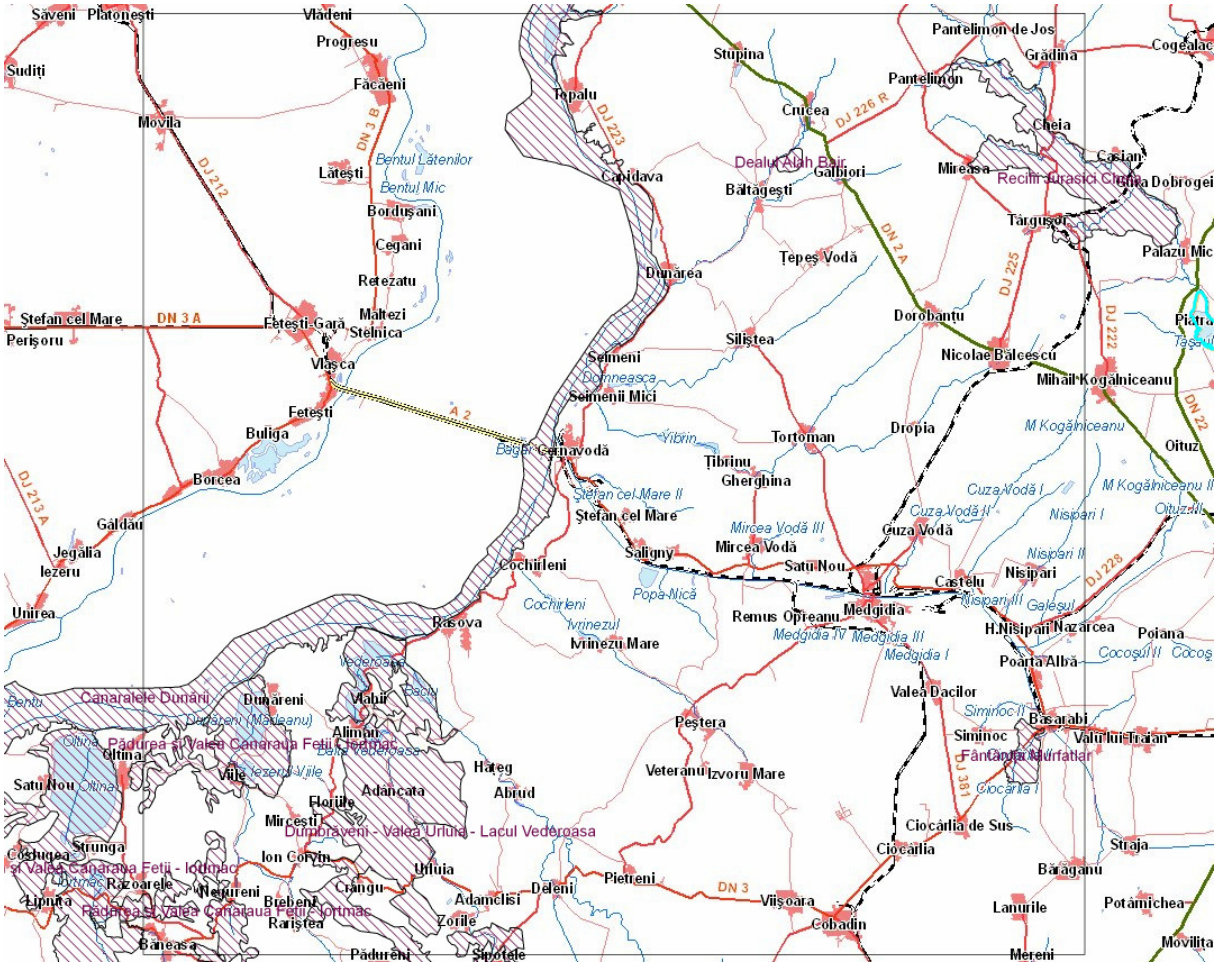
Colias croceu
Inachis io
Vanessa cardui
Melitaea didyma
Melitaea phoeba
Melitaea trivia
Melitaea atalanta
Bolaria dia
Argynnis lathonia
Argynnis adippe
Argynnis charlotta
Argynnis paphia

- Gasteropode: Jaminia microstragus
Bulgarica cana
Vallonia pulchella
Helesi lucorum
Clausillidae
Cochlodina laminata
Cepacea rindobonensis
Manacha carphatica

- Aranee: Oxyptila sp.
Araneus sp.
Harpactia rubicunda

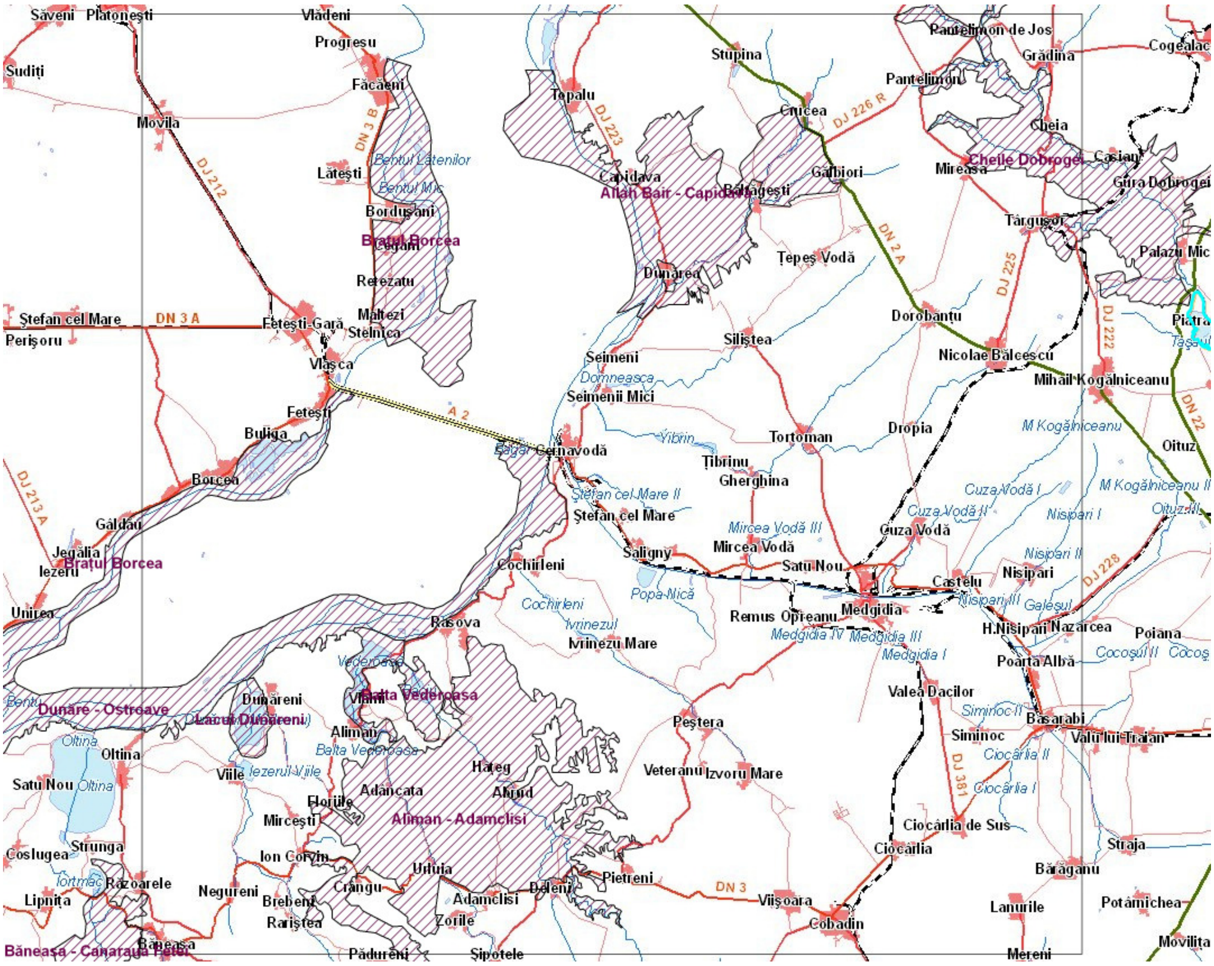
As mentioned in section 4.5.1, there are not natural habitats within the Cernavoda NPP site, and this built area cannot be taken into account as regards biodiversity.

The Cernavoda NPP site is not near protected areas. At longer distances, to about 30 km, there are SCI areas (Fig. 4.5.3-1), SPA areas (Fig. 4.5.3-2) and reserves (Fig. 4.5.3-3).



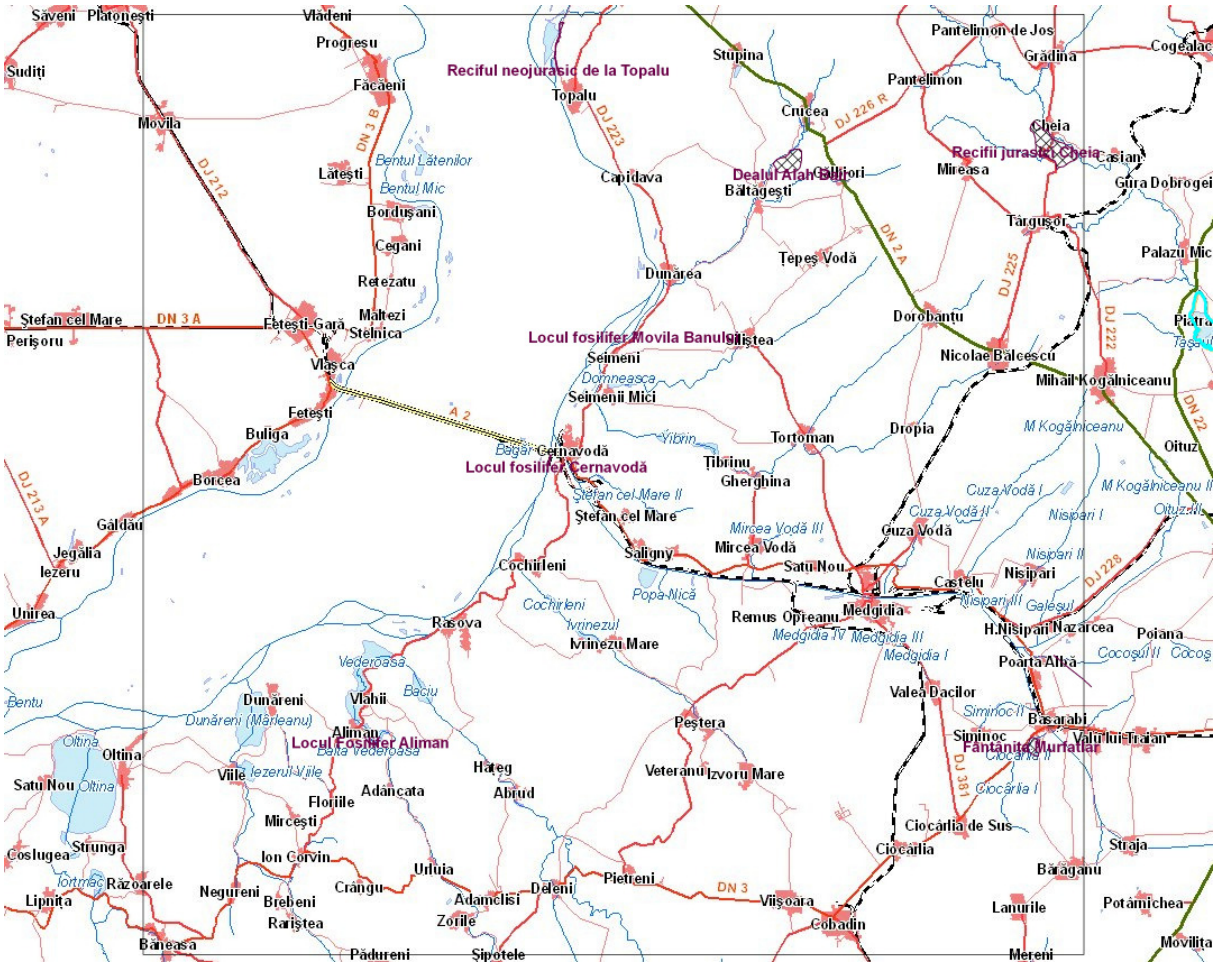
Site name	Code
Canaralele Dunarii	ROSCI0022
Fantanita Murfatlar	ROSCI0083
Dumbraveni - Valea Urluia - Lacul Vederoasa	ROSCI0071
Dealul Alah Bair	ROSCI0053
Recifii Jurasici Cheia	ROSCI0215
Padurea si Valea Canaraua Fetii - Iortmac	ROSCI0172

Figure 4.5.3-1. SCI areas



Name	Code
Dunare - Ostroave	ROSPA0039
Aliman - Adamclisi	ROSPA0001
Allah Bair - Capidava	ROSPA0002
Brațul Borcea	ROSPA0012
Baneasa - Canaraua Fetei	ROSPA0008
Lacul Dunăreni	ROSPA0054
Balta Vederoasa	ROSPA0007
Cheile Dobrogei	ROSPA0019

Figure 4.5.3-2. SPA areas



Name	Area (ha)	Code
Dealul Alah Bair	187.25	367
Locul fosilifer Cernavoda	3.57	354
Reciful neojurasic de la Topalu	20.73	352
Locul Fosilifer Aliman	4.09	351
Recifii jurasici Cheia	387.95	362
Fantanita Murfatlar	82.74	364
Locul fosilifer Movila Banului	11.30	355
Valul lui Traian	1.56	359

Figure 4.5.3-3. Reserves

4.5.4. Impact on Flora and Fauna During the Units 3 and 4 Construction Period

The Cernavoda NPP site was prepared more than 20 years ago for five NPP units. Even at that time the necessary activities did not have an impact on flora or fauna, because the former site use (before 1985) was for extraction of limestone from a quarry.

The Units 3 and 4 will be completed on the NPP Site, on an already built area, near Unit 1, Unit 2 and the other buildings and constructions necessary for the activities on the Cernavoda NPP platform. Therefore, there will not be an impact on vegetation and fauna in this perimeter.

The construction activities to be carried out will not reduce furthermore the plant and animal species diversity, because there are no habitat losses or changes.

The site does not include any critical or productive habitat, and the finishing works and activities will not have an impact on the terrestrial flora and fauna.

At the finishing moment, landscape and green spaces arranging measures will be taken.

4.5.5. Impact on Flora and Fauna During the Units 3 and 4 Operation

During the Unit 1 operation (in the period 1996 - 2006), it was not observed any impact on flora or fauna in this area.

Therefore, it is assessed that the Units 3 and 4 operation will not have an impact on fauna and flora in the Cernavoda NPP site.

At a larger scale around the Cernavoda NPP site, a potential impact on fauna or flora could be related to air or water releases.

Because the administrative and design measures lead to the limitation of non-radioactive releases in air to insignificant quantities, it results that their impact on terrestrial vegetation and fauna will not be significant.

Because the Units 1, 2, 3 and 4 effluent effect on the Danube water temperature at the water intakes of the irrigation systems is low, the use of the warmer water for irrigation, from the river stretch downstream Cernavoda (Seimeni system), will have a practically insignificant impact, or no impact farther downstream.

The impact of this warmer water (along a relatively small distance) on terrestrial fauna near the river is also insignificant.

The crop irrigation with warmer water from the DBSC race 2 favors the crop development. However, the long water transport distances in the irrigation systems networks reduce the thermal factor influence, and water temperature along the irrigation canals is more influenced by the local conditions, soil temperature, solar radiation and other factors.

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