

TAP

Trans Adriatic Pipeline



ESIA Albania

Annex 6.2.1.5 – List of Habitats - Fauna

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6.2.1.5 List of Habitats – Fauna

Habitat Type	Habitat Description	Related Fauna
<i>East Section</i>		
Lowland Grasslands (below 1500 m a.s.l) – agricultural areas	This habitat is very widely distributed along the Eastern section of the pipeline route, both in Devolli and Korca Valleys. It comprises arable lands and abandoned arable land turned into grasslands, located in the vicinity of the settlements (villages). The habitat supports a high abundance of bird species, mostly passerines (order Passeriformes). In winter the open fields are used by flocks of finches in company of other small passerines. In summer, the open fields provide breeding grounds for quails. Hedges and various fruit trees of the open terrain are visited by robins, house sparrows, wrens, larks and many species of finches, shrikes, hoopoe and doves. The most characteristic mammal species are rodents, both mice and voles.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ House mouse (<i>Mus musculus</i>) ○ Long-tailed field mouse (<i>Apodemus sylvaticus</i>) ○ Sibling vole (<i>Microtus epiroticus</i>) • Birds: <ul style="list-style-type: none"> ○ Quail (<i>Coturnix coturnix</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ House sparrow (<i>Passer domesticus</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Larks (<i>Alaudidae</i> sp) ○ Finches ○ Shrikes (<i>Lanius</i> spp) ○ Hoopoe (<i>Upupa epops</i>) ○ Doves (<i>Streptopelia turtur</i>, <i>S. decaocto</i>)
Orchards-Fruit tree plantations	This type of habitat is also widely spread along the pipeline route of Eastern section, especially nearby Cangonji-Zemblaku area, between Kp 19 and Kp 28. Although established relatively recently (last 10-15 year), this type of habitat is still expanding, as farmers are interested in further development of horticulture in Devolli and Korca fields. Fruit tree plantations of apple, plumb and Cherry offer some ecological niches for reptiles (i.e. lizards such as the European green lizard and wall lizard, various passerines (such as tits, finches, warblers, thrushes, black redstart, black bird, flycatcher, crows), bee-eater, hoopoe,. Most common mammal species are fox, badger, weasel, mice and vole. Birds of prey, such as common kestrel are often observed hunting over fruit tree plantations.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Weasel (<i>Mustela nivalis</i>) ○ Mice (<i>Mus sp</i>, <i>Apodemus sp</i>) ○ Vole (<i>Myodes spp</i>, <i>Microtus sp</i>) • Birds: <ul style="list-style-type: none"> ○ Passerines (<i>Ord: Passeriformes</i>) ○ Bee-eater (<i>Merops apiaster</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Common kestrel (<i>Falco tinnunculus</i>) • Reptiles: None <ul style="list-style-type: none"> ○ Lizards (<i>Lacerta spp</i>, <i>Podarcis spp</i>)

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Habitat Type	Habitat Description	Related Fauna
Coniferous forest - Dominated by <i>Pinus nigra</i>	This habitat was found within the study area in a small patch on the hills between Cangonji and Zemblaku villages (Kp 26 and Kp 27). Pine trees, although they do not form a continuous canopy, provide shelter for many breeding birds, including woodpeckers. The most characteristic birds for this type of forests are Coal tit, Great tit, Crested tit, Green woodpecker, etc. From mammals the most characteristic species are rodents, such as Red squirrel, Yellow-necked mouse, and Long-tailed field mouse.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Red squirrel (<i>Sciurus vulgaris</i>) ○ Yellow-necked mouse (<i>Apodemus flavicollis</i>) ○ Long-tailed field mouse (<i>Apodemus sylvatica</i>) • Birds: <ul style="list-style-type: none"> ○ Coal tit (<i>Parus ater</i>) ○ Great tit (<i>Parus major</i>) ○ Crested tit (<i>Parus cristatus</i>) ○ Green woodpecker (<i>Picus viridis</i>)
Transitional woodland-shrub	Transitional woodland-shrub is another type of vegetation that has a limited coverage along the Eastern section of the pipeline route, on the hilly slopes between Cangonji and Zemblaku (Kp 26 and 27). Located close to human settlements they are heavily exposed and affected by collection of firewood and grazing. Fauna of this type of habitat is a mixture of species linked with forests and shrubs. Avifauna is rich and dominated by passerines (order Passeriformes). A number of bird species visit the area during winter and summer time.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Wood mice (<i>Apodemus sp</i>) ○ Hazel dormouse (<i>Muscardinus avellanarius</i>) ○ Fat dormouse (<i>Glis glis</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Weasel (<i>Mustela nivalis</i>) ○ White tooth shrews (<i>Crocidura sp</i>) • Birds: <ul style="list-style-type: none"> ○ Warblers (<i>Sylvia spp</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Buntings (<i>Emberiza spp</i>) ○ Goldfinch (<i>Carduelis carduelis</i>) ○ Blackbird (<i>Turdus merula</i>) ○ Jay (<i>Garrulus glandarius</i>) • Reptiles: <ul style="list-style-type: none"> ○ Hermann's tortoise (<i>Testudo hermanni</i>) ○ Green lizard (<i>Lacerta viridis</i>)

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Habitat Type	Habitat Description	Related Fauna
Bare rocks with scarce vegetation	Situated mainly between Kp 26 and 27 between Cangonji and Zemblaku villages. Bare rocks with scarce vegetation provide a very suitable habitat for reptiles (lizards and snakes) that feed here on insects and mice. Birds of prey (and other birds, such as shrikes, rock partridge, rock dove, thrushes, rock bunting and wheatears are characteristic to such type of habitat.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Mice (<i>Mus spp</i>, <i>Apodemus spp</i>) • Birds: <ul style="list-style-type: none"> ○ Raptors (<i>Falco spp</i> and others) ○ Buzzard (<i>Buteo buteo</i>) ○ Shrikes (<i>Lanius spp</i>) ○ Rock partridge (<i>Alectoris graeca</i>) ○ Rock dove (<i>Columba livia</i>) ○ Thrushes (<i>Monticola spp</i>) ○ Rock bunting (<i>Emberiza cia</i>) ○ Wheatears (<i>Oenanthe spp</i>) • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Lacerta spp</i>, <i>Podarcis spp</i>) ○ Snakes (<i>Malpolon sp</i>, <i>Telescopus sp</i>, <i>Vipera spp</i>) • Amphibians: None
Stream/river habitat (running water)	Streams and rivers are important habitat for animal species linked with running freshwater habitats, such as dragonflies, fish (i.e. <i>Barbus meridionalis</i> , <i>Barbus graecus</i> , <i>Cobitis tenia</i> and <i>Chondrostoma nasus</i>), and amphibians. Fresh water streams and rivers provide an important habitat for a range of bird species including kingfisher and wagtails. This habitat is also frequented by herons. Some sections of the main Devolli River are also important for otter, whose presence has been verified in two locations, at the crossing point of the pipeline with the river nearby Bilishti (WP 057) and Zemblaku dam (Kp 26). Zemblaku dam represents a temporary stagnant waterbody with associated wetland along the main Devolli river. It was the only site along the Devolli river where few individuals of pygmy cormorant have been observed during the field survey along the Eastern section. In addition, on the floating vegetation of the shallow waters of Zemblaku dam moorhen, terrapin and water snake were observed.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtails (<i>Motacilla sp</i>) ○ Grey heron (<i>Ardea cinerea</i>) ○ Little egret (<i>Egretta garzetta</i>) ○ Pygmy cormorant (<i>Phalacrocorax pygmeus</i>) ○ Moorhen (<i>Gallinula chloropus</i>) • Reptiles: <ul style="list-style-type: none"> ○ European pond terrapin (<i>Emys orbicularis</i>) ○ Water snakes (<i>Natrix spp</i>) • Amphibians: <ul style="list-style-type: none"> ○ Stream frog (<i>Rana graeca</i>) ○ Agile frog (<i>Rana dalmatina</i>) ○ Balkan frog (<i>Pelophylax kurtmuelleri</i>)

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Other wetlands (stagnant water)	Stagnant waterbodies are represented in the study area by the small Reservoir of Tresteniku and the drainage/irrigation channel of Vranisht, both used for irrigation. The pipeline route passes very close to Trestetiku Reservoir (Kp 1). It as a sensitive habitat for a variety of animal taxa linked with aquatic habitats, such as dragonflies, fish, amphibians, aquatic reptiles, and waterbirds, however no otter presence has been confirmed at this site during our field surveys conducted in August, 2011. Little grebe and common sandpiper were observed at this site although few other bird species were observed. At the crossing point of the pipeline with Vranishti channel there was no water when the site was visited, however, water snake, terrapin and frogs were observed some 100 m away downstream where some shallow water was still present.	<ul style="list-style-type: none"> • Mammals:None • Birds: <ul style="list-style-type: none"> ○ Little grebe (<i>Tachybaptus ruficollis</i>) ○ Common sandpiper (<i>Actitis hypoleucos</i>) • Reptiles: <ul style="list-style-type: none"> ○ Water Snakes (<i>Natrix</i> spp) ○ European pond terrapin (<i>Emyx orbicularis</i>) • Amphibians: <ul style="list-style-type: none"> ○ Balkan frog (<i>Pelophylax kurtmuelleri</i>)
Caves and tunnels	This type of habitat is not found along the pipeline route, but some caves and tunnels are situated some 1-3 km away from the study area, and some cave-dwelling bats do visit the project area during their hunting at night. The most important cave is that of Treni, situated at the entrance point to Small Prespa lake, in which some 10 species of bats have been reported.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Great horseshoe bat (<i>Rhinolophus ferrumequinum</i>) ○ Blasius's horseshoe bat (<i>Rhinolophus blasii</i>) ○ Mediterranean horseshoe bat (<i>Rhinolophus euryale</i>) ○ Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) ○ Serotine (<i>Eptesicus serotinus</i>) ○ Greater mouse-eared bat (<i>Myotis myotis</i>) ○ Lesser mouse-eared bat (<i>Myotis blythii</i>) ○ Long-fingered bat (<i>Myotis capaccinii</i>) ○ Schreiber's bat (<i>Miniopterus schreibersi</i>) ○ Free-tailed bat (<i>Tadarida teniotis</i>)

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Habitat Type	Habitat Description	Related Fauna
<i>Central East Section</i>		
Alpine hay meadows and grasslands (above 1500 m a.s.l)	These habitats (pastures and meadows above 1500 m a.s.l) support a number of bird species during the summer months, however for the rest of the year they support very few species due to extreme climatic conditions and limited food resources. Among the most common birds of this habitat are various species of larks. The mammal fauna of the area includes moles which are characteristic of these habitats and evidence of wolf was potentially recorded in this area (Kp 71, Kp 75 and within the section between Kp 76 and Kp 82). From reptiles the common European viper is the most characteristic species.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Blind mole (<i>Talpa caeca</i>) ○ Stankovici's mole (<i>Talpa stankovici</i>) • Birds: <ul style="list-style-type: none"> ○ Skylark (<i>Alauda arvensis</i>) ○ Woodlark (<i>Lullula arborea</i>) ○ Dunnock (<i>Prunella modularis</i>) ○ Alpine accentor (<i>Prunella collaris</i>) ○ Rock bunting (<i>Emberiza cia</i>) • Reptiles: <ul style="list-style-type: none"> ○ Common European viper (<i>Vipera berus</i>)
Lowland Grasslands (below 1500 m a.s.l) – Semi-natural recently abandoned agricultural areas	This habitat comprises arable lands and abandoned arable land turned into grasslands, located in the vicinity of the settlements (villages). They support a high bird species abundance, mostly passerines (order Passeriformes). In winter the open fields are used by flocks of finches in company of other small passerines. In summer, the open fields provide breeding grounds for quails. Hedges and various fruit trees of the open terrains are visited by robins, house sparrows, wrens, larks and many species of finches. The most characteristic mammal species are rodents, both mice and voles.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Macedonian mouse (<i>Mus macedonicus</i>) ○ House mouse (<i>Mus musculus domesticus</i>) ○ Long-tailed field mouse (<i>Apodemus sylvaticus</i>) ○ Sibling vole (<i>Microtus epiroticus</i>) • Birds: <ul style="list-style-type: none"> ○ Quail (<i>Coturnix coturnix</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ House sparrow (<i>Passer domesticus</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Larks (Alaudidae) ○ Finches
Coniferous Forest - Dominated by <i>Abies alba</i>	Distributed in small patches within the mountain range between Kp 76 and Kp 76, this type of forest offer a good habitat for a species adapted to dense forestry cover. They are particularly important for bird communities (passerines and birds of prey) as well as large mammals including brown bear and wolf. Old stands of black pine forests provide good habitat for woodpeckers and tits.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Brown bear (<i>Ursus actos</i>) ○ Wolf (<i>Canis lupus</i>) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: <i>Passeriformes</i>) ○ Raptors

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Coniferous forest - Dominated by <i>Pinus nigra</i>	This habitat was found within the study area in the mountainous range from Kp 64 to Kp 67 and Kp 83 to Kp 84. Like the fir forest this type of coniferous forest is the shelter of many breeding birds as well as large mammals such as bear and wolf.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Brown bear (<i>Ursus actos</i>) ○ Wolf (<i>Canis lupus</i>) ○ Red squirrel (<i>Sciurus vulgaris</i>) ○ Yellow-necked mouse (<i>Apodemus flavicollis</i>) ○ Long-tailed field mouse (<i>Apodemus sylvaticus</i>) • Birds: <ul style="list-style-type: none"> ○ Crossbill (<i>Loxia curvirostra</i>) ○ Hawfinch (<i>Coccothraustes coccothraustes</i>) ○ Coal tit (<i>Parus ater</i>) ○ Great tit (<i>Parus major</i>) ○ Crested tit (<i>Parus cristatus</i>)
Broadleaved Beech (<i>F. sylvatica</i>) forest	<p>This type of habitat is widely distributed along the Central eastern section of the pipeline route, between Kp 65 and Kp 76 and from Kp 76 to Kp 83 along the Potom route as well as Kp 91 to Kp 93.</p> <p>The beech forests support bird communities during spring, summer and early autumn. In winter this habitat supports very few species as birds migrate to lower altitudes where they find more suitable conditions. These beech forests provide breeding habitat for a wide range of birds and support the most species during the summer.</p> <p>Beech forests are an important foraging and breeding habitat for a range of mammals including brown bear, wild boar, beach marten, roe deer, red squirrel, dormice, Bank vole, etc. Old growing stands of beech forests provide important ecological niches for insects (beetles and butterflies) linked with this type of habitat, of which some are of international and national conservation interest, such as <i>Rosalia alpina</i>, <i>Cerambyx cerdo</i>, <i>Lucanus cervus</i>, <i>Carabus coriaceus</i>, etc. Numerous fire salamanders were also recorded during the field survey walking across the tracks and this habitat was the only place where alpine newt was recorded during field survey.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Brown bear (<i>Ursus actos</i>) ○ Wild boar (<i>Sus scrofa</i>) ○ Beach marten (<i>Martes foina</i>) ○ Roe deer (<i>Capreolus capreolus</i>) ○ Red squirrel (<i>Sciurus vulgaris</i>) ○ Edible dormouse (<i>Glis glis</i>) ○ Forest dormouse (<i>Dryomys nitedula</i>) ○ Bank vole (<i>Myodes glareolus</i>) • Birds: <ul style="list-style-type: none"> ○ Hobby (<i>Falco subbuteo</i>) ○ Wood pigeon (<i>Columba palumbus</i>) ○ Cuckoo (<i>Cuculus canorus</i>) ○ Eagle owl (<i>Bubo bubo</i>) ○ Tawny owl (<i>Strix aluco</i>) ○ Black woodpecker (<i>Dryocopus martius</i>) ○ Short-toed treecreeper (<i>Certhia brachydactyla</i>) ○ Nuthatch (<i>Sitta europaea</i>) ○ Finches • Amphibians: <ul style="list-style-type: none"> ○ Fire salamander (<i>Salamandra salamandra</i>) ○ Alpine newt (<i>Mesotriton alpestris</i>) • Invertebrates: <ul style="list-style-type: none"> ○ Rosalina longhorn beetle (<i>Rosalina alpina</i>) ○ Capricorn beetle (<i>Cerambyx cerdo</i>)

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Habitat Type	Habitat Description	Related Fauna
Mixed Broadleaved Forest Dominated by Oaks (<i>Quercus sp</i>)	<p>Although this type of forest habitat is relatively limited in its coverage it is distinguished by a high density of bird populations. This type of forest is mainly found between Kp 94 and Kp 107 of the pipeline route, of which the most sensitive section is that between Kp 104 and Kp 107. It offers suitable food resources and nesting for a number of bird species.</p> <p>Broadleaved forest are a good habitat for a number mammals such as brown bear, wild cat, roe deer, wolf, beach marten, badger, red squirrel, dormice, etc. Mixed broadleaved forests also host a number of reptiles, including tortoises. Old growing stands of mixed broadleaved (oaks) provide important ecological niches for insects (beetles and butterflies) linked with this type of habitat, of which some are of international and national conservation interest, such as <i>Cerambyx cerdo</i>, <i>Lucanus cervus</i>, <i>Carabus coriaceus</i>, <i>Osmoderma eremita</i>, <i>Papilio alexanor</i> etc.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Brown bear (<i>Ursus arctos</i>) ○ Wild boar (<i>Sus scrofa</i>) ○ Wild cat (<i>Felis silvestris</i>) ○ Roe deer (<i>Capreolus capreolus</i>) ○ Wolf (<i>Canis lupus</i>) ○ Beach marten (<i>Martes foina</i>) ○ Badger (<i>Meles meles</i>) ○ Red squirrel (<i>Sciurus vulgaris</i>) ○ Fat dormouse (<i>Glis glis</i>) ○ Hazel dormouse (<i>Muscardinus avellanarius</i>) • Birds: <ul style="list-style-type: none"> ○ Green woodpecker (<i>Picus viridis</i>) ○ Woodpecker (<i>Dendrocopos spp</i>) ○ Great tit (<i>Parus major</i>) ○ Blue tit (<i>Parus caeruleus</i>) ○ Sombre tit (<i>Parus lugubris</i>) ○ Jay (<i>Garrulus glandarius</i>) • Reptiles: <ul style="list-style-type: none"> ○ Hermann's tortoise (<i>Testudo hermanni</i>)

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Habitat Type	Habitat Description	Related Fauna
Transitional woodland-shrub	Transitional woodland-shrubs are located in lower altitudes close to human settlements and are heavily exposed and affected by firewood collection and grazing. This type of forest is located between Kp 55 and Kp 63 in the Korca region, as well between Kp 94 and Kp 99 of the pipeline route. Fauna of this type of habitat is a mixture of species linked with forests and shrubs. Avifauna is rich and dominated by passerines (order Passeriformes). A number of bird species visit the area during winter and summer time.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Wood mice (<i>Apodemus</i> sp) ○ Fat dormouse (<i>Glis glis</i>) ○ Hazel dormouse (<i>Muscardinus avellanarius</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Weasel (<i>Mustela nivalis</i>) ○ White tooth shrews (<i>Crocidura</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Warblers (<i>Sylvia</i> spp) ○ Robin (<i>Erithacus rubecula</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Buntings (<i>Emberiza</i> spp) ○ Goldcrest (<i>Regulus regulus</i>) ○ Firecrest (<i>Regulus ignicapillus</i>) ○ Goldfinch (<i>Carduelis carduelis</i>) ○ Blackbird (<i>Turdus merula</i>) ○ Jay (<i>Garrulus glandarius</i>)
Bare rocks with scarce vegetation	Situated mainly at Kp 91. Bare rocks with scarce vegetation provide a very suitable habitat for reptiles (lizards and snakes) that feed here on insects and mice. A number of birds of prey, and other birds, such as shrikes, rock partridge, rock dove, thrushes, rock bunting and wheatears are characteristic to such type of habitat.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Mice (<i>Mus</i> spp, <i>Apodemus</i> spp) • Birds: <ul style="list-style-type: none"> ○ Short-toed eagle (<i>Circaetus gallicus</i>) ○ Honey buzzard (<i>Pernis apivorus</i>) ○ <i>Falco</i> sp ○ Shrikes (<i>Lanius</i> sp) ○ Rock partridge (<i>Alectoris graeca</i>) ○ Rock dove (<i>Columbia livia</i>) ○ Thrushes (<i>Monticola</i> spp) ○ Rock bunting (<i>Emberiza cia</i>) ○ Wheatears (<i>Oenanthe</i> spp) • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Lacerta</i> spp, <i>Podarcis</i> spp) ○ Snakes (<i>Malpolon</i> sp, <i>Telescopus</i> sp, <i>Vipera</i> spp)

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Cliffs	<p>These types of biotopes are not often met inside the study area. A number of birds are quite well adapted to such conditions, including those birds of prey that build their nests in these areas. Other bird species which inhabit these areas include the nuthatch, thrushes, rock partridge, swifts, wheatear etc.</p> <p>A few mammal species also inhabit this habitat, including brown hare, voles, etc.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Brown hare (<i>Lepus europaeus</i>) ○ Voles (<i>Microtus</i> spp) • Birds: <ul style="list-style-type: none"> ○ Golden eagle (<i>Aquila chrysaetos</i>) ○ Peregrine falcon (<i>Falco peregrinus</i>) ○ Common kestrel (<i>Falco tinnunculus</i>) ○ Eagle owl (<i>Bubo bubo</i>) ○ Egyptian vulture (<i>Neophron percnopterus</i>) ○ Nuthatch (<i>Sitta neumayer</i>) ○ Thrushes (<i>Monticola</i> sp) ○ Rock partridge (<i>Alectoris graeca</i>) ○ Swifts (<i>Apus</i> spp) ○ Wheatear (<i>Oenanthe</i> sp) • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Lacerta</i> spp, <i>Podarcis</i> spp) ○ Snakes (<i>Malpolon</i> sp, <i>Telescopus</i> sp, <i>Vipera</i> spp)
Stream/river habitat (running water)	<p>Streams and rivers are important habitat for animal species linked with running freshwater habitats, such as dragonflies, fish (i.e <i>Barbus meridionalis</i>, <i>Barbus graecus</i> and <i>Chondrostoma nasus</i>), and amphibians. Clean and fresh water streams and rivers provide an important habitat for a range of bird species. This habitat is also important for otter and at least one water shrew. Presence of Otter has been verified in the Dunaveci River (Kp 51) at the crossing point of the pipeline as well as the Osumi River at Kp 57.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) ○ Miller's water shrew (<i>Neomys anomalus</i>) • Birds: <ul style="list-style-type: none"> ○ Dipper (<i>Cinclus cinclus</i>) ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtails (<i>Motacilla</i> spp) • Reptiles: None • Amphibians: <ul style="list-style-type: none"> ○ Agile frog (<i>Rana dalmatina</i>) ○ Stream frog (<i>Rana graeca</i>) ○ Common frog (<i>Rana temporaria</i>)

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Other wetlands (stagnant water)	Stagnant water habitats are represented in the study area by few water reservoirs used for irrigation. The pipeline route passes very close to Gjanci water reservoir (Kp 59-60) and two other smaller reservoirs situated in the road between Vithkuq and Rehove (Kp 64). They are undoubtedly a key habitat for a variety of animal taxa linked with aquatic habitats, such as dragonflies, fish, amphibians, aquatic reptiles, water-birds and otter. All three water reservoirs have been confirmed important sites for otter during our field surveys conducted in June and August, 2011. Water reservoirs offer important habitat for a number of bats that use them for hunting insects and drinking water. Likewise, water reservoirs provide food for various species of grebes, ducks and waders. This type of habitat is also consider highly sensitive, as being critical for many species that use this type of wetlands for breeding, foraging and as shelter.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) ○ Bats (<i>Rhinolophus</i> spp, <i>Myotis</i> spp) • Birds: <ul style="list-style-type: none"> ○ Grebes (Fam. Podicipedidae) ○ Ducks (Fam. Anatidae) ○ Waders (Ord: Charadriiformes)
Caves and tunnels	This type of habitat is very rare inside the study area. However, it should be stated that caves and tunnels are important habitat for cave-dwelling bats (at least 12 species).	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Bats (<i>Rhinolophus</i> spp, <i>Myotis</i> spp, <i>Eptesicus</i> sp)
Central West Section		
Lowland Grasslands (below 1500 m a.s.l) – Semi-natural recently abandoned agricultural areas	This habitat comprises arable lands and abandoned arable land turned into grasslands, located in the vicinity of the settlements (villages), along the Osumi valley, especially from Peshtan (Kp 139) to Strum (Kp 178). This habitat supports high bird species abundance, which are mostly passerines. In winter the open fields are used by flocks of finches in company of other small passerines. In summer, the open fields provide breeding grounds for the common quail. Hedges and various fruit trees of the open terrains are visited by robin, house sparrow, wren, larks and many species of finches. The most characteristic mammal species are rodents, both voles and mice. The most common insectivores are the white-toothed shrew and blind mole.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Thomas's pine vole (<i>Microtus thomasi</i>) ○ Macedonian mouse (<i>Mus macedonicus</i>) ○ House mouse (<i>Mus musculus domesticus</i>) ○ Long-tailed field mouse (<i>Apodemus sylvaticus</i>) ○ White-toothed shrew (<i>Crocidura suaveolens</i>) ○ Blind mole (<i>Talpa stankovici</i>) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Common quail (<i>Coturnix coturnix</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ House sparrow (<i>Passer domesticus</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Larks (Fam: Alaudidae) ○ Finches

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Plantations of Coniferous forest - Dominated by <i>Pinus halepensis</i> and <i>Pinus pinea</i>	Plantations of <i>Pinus halepensis</i> and <i>Pinus pinea</i> are found in few places along the Central West section of the pipeline route, especially in the hilly area of Otlak, between Kp 162 and Kp 167. The pine forests were planted several decades ago, and offer shelter for a number of birds, such as passerines, wryneck, nightjar, hoopoe, and a number of birds of prey. The pine forest hosts a number of mammals, such as badger, fox, jackal, squirrel, edible dormice, and other rodents (wood mice) and insectivores. Reptiles, such as lizards, snakes and tortoise are common in this type of habitat.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Badger (<i>Meles meles</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Jackal (<i>Canis aureus</i>) ○ Red squirrel (<i>Sciurus vulgaris</i>). ○ Mice (<i>Apodemus</i> sp) ○ Fat dormice (<i>Glis glis</i>) ○ Shrews (<i>Crocidura</i> sp, <i>Suncus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Wryneck (<i>Jynx torquilla</i>) ○ Nightjar (<i>Caprimulgus europaeus</i>) ○ Hoopoe (<i>Upupa epops</i>) • Reptiles: <ul style="list-style-type: none"> ○ Lizards ○ European nose horn viper (<i>Vipera ammodytes</i>) ○ Hermann's tortoise (<i>Testudo hermannii</i>)
Transitional woodland-shrub	This type of habitat is found in the hilly areas around Çorovoda and Bogova. Fauna of this type of habitat is a mixture of species linked with forests and shrubs. Avifauna is rich and dominated by passerines. A number of bird species visit the area during winter and summer time. The most commonly present include warblers, robin, wren, hoopoe, buntings, goldcrest and firecrest, blackbird, and jay. Common mammals found in this habitat include wood mice and dormice. Other mammals recorded in this type of habitats are foxes, badger, weasel, and white tooth shrews.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Wood mice (<i>Apodemus</i> sp) ○ Fat dormice (<i>Glis glis</i>) ○ Hazel dormice (<i>Mucardinus avellanarius</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Weasel (<i>Mustela nivalis</i>) ○ White tooth shrews (<i>Crocidura</i> spp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Warblers (<i>Sylvia</i> spp) ○ Robin (<i>Erithacus rubecula</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Buntings (<i>Emberiza</i> spp) ○ Goldcrest (<i>Regulus regulus</i>) ○ Firecrest (<i>Regulus ignicapillus</i>) ○ Goldfinch (<i>Carduelis carduelis</i>) ○ Blackbird (<i>Turdus merula</i>) ○ Jay (<i>Garrulus glandarius</i>)

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Evergreen sclerophyllous scrubs/forests – Macchia	<p>This type of habitat is widely found along the Central Western section from Çorovoda to Polican and Vertop. Avifauna of the Mediterranean macchia found in the study area is that typical of the northern Mediterranean area and supports a wide range of bird species including many passerines. Scrublands provide an important wintering habitat for many bird species which breed at higher altitudes and move down to scrublands to escape bad weather. The most typical birds of such vegetation are warblers. During spring-summer seasons the macchia supports a range of species of birds, such as subalpine warbler, Olivaceous warbler, etc. During migration, Mediterranean shrubs especially near the coastal area are used as stop-over grounds for other species such as hoopoe, wryneck, blackbird, etc.</p> <p>A range of mammals also exploit the macchia habitat during different periods of the year. The tracks of the weasel, European polecat, fox and badger, as well as of different species of mice and voles were commonly observed during the field survey. Other species such as lesser white toothed shrew and bicoloured shrew and eastern European hedgehog are reported to this type of habitat. Various bat species hunt for food over the Mediterranean macchia.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Weasel (<i>Mustela nivalis</i>) ○ European polecat (<i>Mustela putorius</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Mice (<i>Apodemus</i> spp, <i>Mus</i> spp) ○ Voles (<i>Microtus</i> sp) ○ White tooth shrews (<i>Crociodura</i> spp) ○ Hedgehog (<i>Erinaceus concolor</i>) ○ Bats (<i>Rhinolophus</i> spp, <i>Pipistrellus</i> spp, <i>Myotis</i> spp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Warblers (<i>Sylvia</i> spp, <i>Cettia</i> sp, <i>Hippolais</i> spp) ○ Hoopoe (<i>Upupa epops</i>) ○ Wryneck (<i>Jynx torquilla</i>) ○ Blackbird (<i>Turdus merula</i>)
Bare rocks with scarce vegetation	<p>Bare rocks with scarce vegetation provide a very suitable habitat for reptiles (lizards and snakes) that feed here on insects and mice. A number of birds of prey short toed eagle, honey buzzard, falcons, and other birds, such as shrikes, grey partridge, rock dove, thrushes and wheatears are characteristic to such type of habitat.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Mice (<i>Apodemus</i> spp, <i>Mus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Short-toed eagle (<i>Circaetus gallicus</i>) ○ Honey buzzard (<i>Pernis apivorus</i>) ○ Falcons (<i>Falco</i> spp) ○ Shrikes (<i>Lanius</i> spp) ○ Grey partridge (<i>Perdix perdix</i>) ○ Rock dove (<i>Columba livia</i>) ○ Thrushes (<i>Monticola</i> sp) ○ Wheatears (<i>Oenanthe</i> sp) • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Lacerta</i> sp, <i>Podarcis</i> sp) ○ Snakes (<i>Malpolon</i> sp, <i>Telescopus</i> sp, <i>Vipera</i> sp)

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Olive groves	Olive groves represent a type of habitat that is relatively well represented in the hilly areas around Berati and Lapardha, offering some ecological niches for reptiles (i.e lizards such as the European green lizard and wall lizard), tortoise, various passerines (such as tits, finches, warblers, thrushes, black redstart, flycatcher) and roller. A number of common mammal species are also regularly present in this habitat. Some rare insects, such as praying mantis (<i>Mantis religiosa</i>), and southern swallowtail butterfly (<i>Papilio alexanor</i>) were observed during field survey inside the old growing olive groves.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Weasel (<i>Mustela nivalis</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Mice (<i>Apodemus</i> spp, <i>Mus</i> spp) ○ Voles (<i>Microtus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Roller (<i>Coracias garrulus</i>) • Reptiles: <ul style="list-style-type: none"> ○ European green lizard (<i>Lacerta viridis</i>) ○ Wall lizard (<i>Podarcis muralis</i>) ○ Hermann's tortoise (<i>Testudo hermanni</i>)
Stream/river habitat	Streams and rivers are important habitat for animal species linked with running freshwater habitats, such as dragonflies, fish (<i>Barbus meridionalis</i> , <i>Barbus graecus</i> , <i>Chondrostoma nasus</i> , <i>Alosa fallax</i> , <i>Leuciscus cephalus</i> , <i>Cobitis taenia</i> , <i>Pachychilon pictum</i>), and amphibians. Fresh water streams and rivers provide an important habitat for a range of bird species such as kingfisher, wagtails, Grey Heron, Little Egret, Common sandpiper, Little Ringed Plover and Common Gull. This habitat is important for otters as well. As already mentioned earlier in this report, otter presence has been confirmed within a number of sections of the Osumi river crossed by the pipeline route. In some parts of the Osumi riverbed there are temporary stagnant or low running water pools that are used as important breeding ground for other amphibian species such as toads.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtails (Fam: Motacillidae) ○ Grey heron (<i>Ardea cinerea</i>) ○ Little egret (<i>Egretta garzetta</i>) ○ Common sandpiper (<i>Actitis hypoleucos</i>) ○ Little ringed plover (<i>Charadrius dubius</i>) ○ Common gull (<i>Larus ridibundus</i>) • Amphibians: <ul style="list-style-type: none"> ○ Balkan frog (<i>Pelophylax kurtmuelleri</i>) ○ Agile and Stream Frog (<i>R. dalmatina</i>, <i>R. graeca</i>) ○ Toads (<i>Bufo</i> spp, <i>Bombina variegata</i>)

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Limestone Caves/ tunnels/fortress	This type of habitat is very rare inside the study area. There were no big caves observed during the field survey. Nevertheless there are fortresses (such as Berati) and some tunnels created by military and mining operations of the past that provide with some habitat for cave-dwelling bats.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Bats (<i>Rhinolophus</i> spp, <i>Epseticus</i> sp, <i>Myotis</i> spp)
West Section		
Lowland Grasslands (below 1500 m a.s.l) – Semi-natural recently abandoned agricultural areas	This habitat comprises arable lands and abandoned arable land turned into grasslands, located in the vicinity of the settlements (villages). This is the most common type of habitat along the western section of the pipeline route and is widely found between Kp 177 and Kp 209. This habitat supports high bird species abundance, which are mostly passerines. In winter the open fields are used by flocks of finches in company of other small passerines. In summer, the open fields provide breeding grounds for the common quail. Hedges and various fruit trees of the open terrains are visited by robin, house sparrow, wren, larks and many species of finches. The most characteristic mammal species are rodents, both voles and mice, such as Thomas’s pine vole, the Macedonian mouse, the common house mouse and the common wood mouse. The most common insectivores are the white-toothed shrew, and Balkan blind mole.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Balkan blind mole (<i>Talpa stankovici</i>) ○ White-toothed shrew (<i>Crocidura suaveolens</i>) ○ Mice (<i>Apodemus</i> sp, <i>Mus</i> sp) ○ Thomas’s pine vole (<i>Microtus thomasi</i>) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Common quail (<i>Coturnix coturnix</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ House sparrow (<i>Passer domesticus</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Larks (Fam: Alaudidae)
Plantations of Coniferous forest - Dominated by <i>Pinus halepensis</i> and <i>Pinus pinea</i>	Plantations of <i>Pinus halepensis</i> and <i>Pinus pinea</i> are found along the coast (Kp 209). The pine forests along the coast were planted several decades ago, and offer shelter for a number of birds, such as, passerines, wryneck, nightjar, hoopoe, and a number of birds of prey. The pine forest hosts a number of mammals, such as badger, fox, jackal, polecat, marten, squirrel, edible dormice, and other rodents (wood mice) and insectivores (white toothed shrews, including pigmy white-toothed shrew). Reptiles, such as lizards, snakes, and tortoise are common in this type of habitat.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Badger (<i>Meles meles</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Western polecat (<i>Mustela putorius</i>) ○ Beach marten (<i>Martes foina</i>) ○ Red squirrel (<i>Sciurus vulgaris</i>) ○ White-toothed shrew (<i>Crocidura</i> sp) ○ Etruscan shrew (<i>Suncus etruscus</i>) ○ Fat dormice (<i>Glis glis</i>) ○ Wood mouse (<i>Apodemus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Wryneck (<i>Jynx torquilla</i>) ○ Nightjar (<i>Caprimulgus europaeus</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Raptors • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Podarcis</i> sp, <i>Lacerta</i> sp, <i>Pseudopus</i> sp) ○ European nose horn viper (<i>Vipera ammodytes</i>) ○ Hermann’s tortoise (<i>Testudo hermanni</i>)

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Olive groves	Olive groves represent a type of habitat that is found in the hilly area nearby Mbrostar (Kp 193 - 194). Some of these olive groves are relatively old, and offer some ecological niches for reptiles (i.e. lizards such as the European green lizard and wall lizard), tortoise, various passerines (such as tits, finches, warblers, thrushes, black redstart, flycatcher) and roller, and mammals (fox, badger, weasel, mice and vole). This type of habitat is visited also by birds of prey such as buzzard, Common kestrel, and Barn owl that feed mainly on abundant small mammal community. Some rare insects, such as praying mantis (<i>Mantis religiosa</i>), and southern swallowtail butterfly (<i>Papilio alexanor</i>) were observed during field survey inside the olive groves.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Weasel (<i>Mustela nivalis</i>) ○ Mice (<i>Mus</i> sp, <i>Apodemus</i> sp) ○ Vole (<i>Microtus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Roller (<i>Coracias garrulus</i>) ○ Buzzard (<i>Buteo buteo</i>) ○ Common kestrel (<i>Falco tinnunculus</i>) ○ Barn owl (<i>Tyto alba</i>) • Reptiles: <ul style="list-style-type: none"> ○ European green lizard (<i>Lacerta viridis</i>) ○ Wall lizard (<i>Podarcis muralis</i>) ○ Hermann's tortoise (<i>Testudo hermanni</i>)
Stream/river habitat	Semani River, although polluted by oil residues and spillage from the local Oil Field and urban waste, provides important habitat for animal species linked with running freshwater habitats, such as fish (i.e. <i>Barbus meridionalis</i> , <i>Barbus graecus</i> , <i>Chondrostoma nasus</i> , <i>Alosa fallax</i> , <i>Leuciscus cephalus</i> , <i>Cobitis taenia</i> , <i>Pachychilon pictum</i>), amphibians, and birds. This habitat is also important for otter. During our field surveys, presence of otter were confirmed at both the Semani Rivers crossing points with the pipeline route, although both sites were not thought to have otter holts within the vicinity of the crossings.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtails (Fam: Motacillidae) ○ Nightingale (<i>Luscinia megarhynchos</i>) ○ Cetti's warbler (<i>Cettia cetti</i>) ○ Zitting cisticola (<i>Cisticola juncidis</i>) ○ Chiffchaff (<i>Phylloscopus collybita</i>) ○ Wood warbler (<i>Phylloscopus sibilatrix</i>) • Amphibians: <ul style="list-style-type: none"> ○ Balkan frog (<i>Pelophylax kurtmuelleri</i>) ○ Agile frog (<i>Rana dalmatina</i>)

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Habitat Type	Habitat Description	Related Fauna
Drainage channels	This is a very specific type of slow running/almost stagnant water habitat that is characteristic of lowland and plain coastal agriculture land. They provides suitable conditions for a number of freshwater insects (dragonflies), fish (especially eel, (<i>Anguilla Anguilla</i>)), amphibians, reptiles, and birds. Sometimes, the otter may visit drainage channels.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtail (<i>Motacilla</i> spp) ○ Water rail (<i>Rallus aquaticus</i>) ○ Moorhen (<i>Gallinula chloropus</i>) • Reptiles: <ul style="list-style-type: none"> ○ European grass snake (<i>Natrix natrix</i>) ○ Dice snake (<i>Natrix tessellata</i>) ○ European pond terrapin (<i>Emys orbicularis</i>) ○ Striped-neck terrapin (<i>Mauremys caspica</i>) • Amphibians: <ul style="list-style-type: none"> ○ Frogs (<i>Rana</i> sp) ○ Toads (<i>Bufo</i> sp, <i>Bombina variegata</i>) ○ Smooth newt (<i>Triturus vulgaris</i>)
Water reservoirs	The only Reservoir along the western section of the pipeline is that of Petova (Kp 194). This Reservoir has evolved into almost natural conditions, with well developed aquatic vegetation (submerged and floating, reeds and trees) due to its age (created more than 40 years ago). It is undoubtedly a key habitat for a variety of animal taxa linked with aquatic habitats, such as dragonflies, fish, amphibians (9 species), aquatic reptiles (4 species), water-birds and otter. Petova Reservoir offers important habitat for a number of bats that use it for hunting insects and drinking water. Likewise, reservoirs provide food source for various species of grebes (especially for little grebe) and ducks. Birds of prey including buzzard, kestrel, and black kite were observed during our field survey in the Petova Reservoir.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) ○ Bats (<i>Rhinolophus</i> sp, <i>Myotis</i> sp) • Birds: <ul style="list-style-type: none"> ○ Grebes (Fam: Podicipedidae) ○ Ducks (Fam: Anatidae) ○ Buzzard (<i>Buteo buteo</i>) ○ Common kestrel (<i>Falco tinnunculus</i>) ○ Black kite (<i>Milvus migrans</i>) • Reptiles: <ul style="list-style-type: none"> ○ Water snakes (<i>Natrix</i> sp) ○ European pond terrapin (<i>Emysorbicularis</i>) ○ Striped-neck terrapin (<i>Mauremys caspica</i>) • Amphibians: <ul style="list-style-type: none"> ○ Frogs (<i>Rana</i> sp) ○ Toads (<i>Bufo</i> sp, <i>Bombina variegata</i>) ○ Newts (<i>Triturus</i> sp)

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Habitat Type	Habitat Description	Related Fauna
Salt marshes	<p>Salt marshes dominated by glasswort (<i>Salicornia fruticosis</i>) are found along the coastal zone, in the transitional wetlands influenced by the intrusion of sea waters, between Kp 207 and Kp 209 of the pipeline route. Due to high evaporation during dry season, and precipitations and fresh water inflow during wet seasons, the salinity in such marshes fluctuates a lot, becoming a limiting factor for a number of animal taxa. Few animal species (eurybionts) are adapted to such conditions. However, the beds of <i>Salicornia</i> provide good shelter for a number of nesting waders and gulls. Waders and egrets, grey heron and purple heron use salt marshes as feeding grounds. Marsh harrier is a common bird of prey of salt marshes. From mammals, salt marshes are an attractive feeding habitat for jackal, fox and badger. Sometimes, when the level of water increases, this habitat is visited by otter as well although no evidence was recorded in this area during survey.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Jackal (<i>Canis aureus</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Waders (<i>Tringa</i> spp, <i>Himantopus himantopus</i>) ○ Gulls (<i>Larus</i> spp) and herons (<i>Ardea</i> spp) ○ Little egret (<i>Egretta garzetta</i>) ○ Marsh harrier (<i>Circus aeruginosus</i>)
Coastal lagoons	<p>The only coastal lagoons nearby the landfall are that of Gjemise (in the south) and of Petriti (in the north of pipeline route). Limited in size and easily accessed, both lagoons have a moderate importance for water-birds, especially during winter season. A number of water-birds pass winter in this area, such as ducks, waders (including avocet and snipe), grebes, gulls and terns.</p> <p>During breeding season along the lagoon edges Kentish plover and common sandpiper, gulls and terns were observed. Grey herons and little egrets are common around the lagoon edges, although there is no proof that they breed in the area.</p> <p>There are a few fish species are characteristic of the lagoon ecosystem, such as flat head mullet (<i>Mugil cephalus</i>), thin-lip mullets (<i>Liza ramada</i> and, <i>L. saliens</i>), gilt-head bream (<i>Sparus aurata</i>), and Mediterranean sand smelt (<i>Atherina hepsetus</i>). For mammals the most typical species are otter, badger, fox, and jackal.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Jackal (<i>Canis aureus</i>) ○ Red fox (<i>Vulpes vulpes</i>) ○ Badger (<i>Meles meles</i>) ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Ducks (<i>Anas</i> spp, <i>Aythya ferina</i>) ○ Waders (<i>Calidris</i> sp, <i>Charadrius</i> spp), <i>Pluvialis</i> sp, <i>Lymnocyptes</i> sp, <i>Tringa</i> spp, <i>Avoseta recurvirostra</i>) ○ Snipe (<i>Gallinago</i> spp) and grebes (<i>Podiceps</i> spp) ○ Gulls (<i>Larus</i> spp) and terns (<i>Sterna</i> spp) ○ Common sandpiper (<i>Actitis hypoleucos</i>) ○ Grey herons (<i>Ardea cinerea</i>) ○ Little egrets (<i>Egretta garzetta</i>)
Tunnels	<p>This type of habitat is very rare inside the study area. There were some tunnels created by military operations (Kp 195 of the Pipeline) of the past that provide with some habitat for cave-dwelling bats.</p>	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Bats (<i>Rhinolophus</i> spp, <i>Epseticus</i> sp, <i>Myotis</i> spp)

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Habitat Type	Habitat Description	Related Fauna
<i>Northern Section</i>		
Lowland Grasslands (below 1500 m a.s.l) – Semi-natural recently abandoned agricultural areas	This habitat comprises arable lands and abandoned arable land turned into grasslands, located in the vicinity of the settlements (villages). This is the most common type of habitat along the northern section, and is the main habitat type of the pipe yard nearby Synej village. This habitat supports high bird species abundance, which are mostly passerines. In winter the open fields are used by flocks of finches in company of other small passerines. In summer, the open fields provide breeding grounds for the common quail. Hedges and various fruit trees of the open terrains are visited by robin, house sparrow, wren, larks and many species of finches. The most characteristic mammal species are rodents, both voles and mice, such as Thomas’s pine vole, the Macedonian mouse, the common house mouse and the common wood mouse. The most common insectivores are the white-toothed shrew, and Balkan blind mole.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Balkan blind mole (<i>Talpa stankovici</i>) ○ White-toothed shrew (<i>Crocidura suaveolens</i>) ○ Mice (<i>Apodemus</i> sp, <i>Mus</i> sp) ○ Thomas’s pine vole (<i>Microtus thomasi</i>) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Common quail (<i>Coturnix coturnix</i>) ○ Robin (<i>Erithacus rubecula</i>) ○ House sparrow (<i>Passer domesticus</i>) ○ Wren (<i>Troglodytes troglodytes</i>) ○ Larks (Fam: Alaudidae)
Stream/river habitat	Although Karpen is a small stream situated at proximity of a pipe yard, it provides important habitat for animal species linked with running freshwater habitats, such as fish, amphibians, terrapin and birds. This habitat is also important for otter, although during our field survey in July 2012 otter signs were not observed along the investigated section of the Karpen river/stream.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Otter (<i>Lutra lutra</i>) • Birds: <ul style="list-style-type: none"> ○ Kingfisher (<i>Alcedo atthis</i>) ○ Wagtails (Fam: Motacillidae) ○ Nightingale (<i>Luscinia megarhynchos</i>) ○ Cetti’s warbler (<i>Cettia cetti</i>) ○ Zitting cisticola (<i>Cisticola juncidis</i>) ○ Chiffchaff (<i>Phylloscopus collybita</i>) ○ Wood warbler (<i>Phylloscopus sibilatrix</i>) • Reptiles: <ul style="list-style-type: none"> • European pond terrapin (<i>Emys orbicularis</i>) • Amphibians: <ul style="list-style-type: none"> ○ Balkan frog (<i>Pelophylax kurtmuelleri</i>) ○ Tree frog (<i>Hyla arborea</i>)

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Habitat Type	Habitat Description	Related Fauna
Plantations of Coniferous forest - Dominated by <i>Pinus halepensis</i> and <i>Pinus pinea</i>	Plantations of Aleppo pine (<i>Pinus halepensis</i>) and Stone pine (<i>Pinus pinea</i>) are found along the coast approximately 1 to 2 km on the left side of the Road to Durres harbour, where a military base and a state residential area are located. Being small in size and relatively disturbed, the planted pine forests offer shelter for a number of birds, such as, passerines, wryneck, nightjar, hoopoe, and 1 or 2 species of birds of prey. The pine forest hosts few mammal species, such as weasel (<i>Mustela nivalis</i>), rodents (wood mice) and insectivores (white toothed shrews, including pigmy white-toothed shrew). Reptiles, such as lizards, snakes, and tortoise are rarely met.	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> ○ Weasel (<i>Mustela nivalis</i>) ○ White-toothed shrew (<i>Crocidura</i> sp) ○ Etruscan shrew (<i>Suncus etruscus</i>) ○ Wood mouse (<i>Apodemus</i> sp) • Birds: <ul style="list-style-type: none"> ○ Passerines (Ord: Passeriformes) ○ Wryneck (<i>Jynx torquilla</i>) ○ Nightjar (<i>Caprimulgus europaeus</i>) ○ Hoopoe (<i>Upupa epops</i>) ○ Raptors (<i>Athene noctua</i>, <i>Otus scops</i>) • Reptiles: <ul style="list-style-type: none"> ○ Lizards (<i>Podarcis</i> sp, <i>Lacerta</i> sp.) ○ Hermann's tortoise (<i>Testudo hermanni</i>)
Continuous Urban Fabrics/Urbanised area	This urbanised area is found on both sides of the Road from Plepa to Durres harbour. The area has been densely developed as urban and tourist zone, leaving little space for green areas and wildlife. However, this type of habitat provides shelter for a number of species, such as passerines (swallows, passerines), Collared dove (<i>Streptopelia decaocto</i>), magpie (<i>Pica pica</i>), hooded crow (<i>Corvus cornix</i>), bats (<i>Pipistrellus</i> spp.), wall lizard (<i>Podarcis muralis</i>), and Turkish gecko (<i>Hemidactylus turcicus</i>). For mammals, the most common species found here are the house mouse (<i>Mus domesticus</i>) and rats (<i>Rattus rattus</i> and <i>Rattus norvegicus</i>).	<ul style="list-style-type: none"> • Mammals: <ul style="list-style-type: none"> • House mouse (<i>Mus domesticus</i>) • Rats (<i>Rattus rattus</i>, <i>R. norvegicus</i>) • Bats (<i>Pipistrellus</i> spp) • Birds: <ul style="list-style-type: none"> ○ House Sparrow (<i>Passer domesticus</i>) ○ Collared Dove (<i>Streptopelia decaocto</i>) ○ Magpie (<i>Pica pica</i>) ○ Hooded Crow (<i>Corvus cornix</i>) ○ Jackdaw (<i>Corvus monedula</i>) ○ Swallows (<i>Hirundo</i> spp, <i>Delichon urbica</i>) • Reptiles: <ul style="list-style-type: none"> ○ Turkish Gecko (<i>Hemidactylus turcicus</i>) ○ Wall Lizard (<i>Podarcis muralis</i>)

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