



# Kelme Wind Farm, Lithuania

## Habitat Residual Impact Assessment

PREPARED FOR



Ignitis Renewables

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# Kelme Wind Farm, Lithuania

## Habitat Residual Impact Assessment

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## LIST OF ACRONYMS & ABBREVIATIONS

Name	Description
BAP	Biodiversity Action Plan
BMP	Biodiversity Management Plan
CORPI	Coastal Research and Planning Institute
CHA	Critical Habitat Assessment

<b>Name</b>	<b>Description</b>
EPA	Environmental Protection Agency (of Lithuania)
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EN	Endangered (species threat status)
ERM	Environmental Resources Management Ltd.
ESS	Environmental and Social Standard
EU	European Union
LC	Least Concern (species threat status)
MW	Mega Watt
NT	Near Threatened (species threat status)
PR	Performance Requirement
VU	Vulnerable (species threat status)
WF	Wind Farm
WT	Wind Turbine

## EXECUTIVE SUMMARY

To support the supplementary information required for the Kelme Wind Farm in Lithuania, in support of the Project seeking finance from the EBRD (European Bank for Reconstruction and Development), Environmental Resources Management (ERM) was appointed by the developer and Project owner, Ignitis Renewables, to undertake a 'residual habitat impact assessment' to document the Project's post-construction phase residual impacts on natural habitats.

This was considered necessary to inform the Critical Habitat Assessment (CHA) required for the Project financing and the relevant management plans as these relate to the conservation and management of biodiversity, including a Biodiversity Action Plan (BAP) and Biodiversity Management Plan (BMP).

A desktop mapping and field survey exercise was undertaken in June 2025 during the optimal season for sampling, with a summary of the main findings of the habitat assessment being as follows:

- Whilst several wetlands, forest and woodland patches, shrubland and riverine habitats have been identified in proximity to wind farm infrastructure that has been constructed (i.e. access roads, underground transmission line installation, turbine pads), no habitat types of EU community importance (in terms of listing in Annex I of the EU Habitats Directive) have been impacted by the Project construction.
- Impacts on natural habitats have been largely avoided through planning of linear infrastructure (roads, transmission line) and turbines outside of natural area and restricting these largely to existing roads and cultivated lands where habitats are modified and disturbance has already occurred. Many habitats remain unimpacted and for the majority of the focal areas investigated in the field, there were no visible signs of significant impacts, and no residual impacts could be identified as being associated with the Project.
- A few habitats are impacted by invasive alien plants, weeds and ruderal plants; however, these are considered typical of disturbances caused by existing/legacy agricultural activities (prior to the construction of the wind farm infrastructure).
- Most habitats do not host conservation important flora species, except for two wetland areas – however no Project impacts to these areas are identified.
- For a few areas assessed, it could not be determined whether impacts to habitats relate to the Project or other activities related to agriculture for example. For these areas, the vegetation and habitat is in a state of recovery following disturbance, and in this case, it is recommended that natural recovery be allowed, with monitoring to determine the need for any active intervention (such as active planting or alien plant/weed control measures).
- Where there have been more significant and measurable residual impacts, typically resulting in the loss of habitat elements due to the Project, restoration (assisted vegetation) or compensation actions have been recommended, for wetland habitats at sampling sites #13 and #19.
- These findings and recommendations will be considered in the CHA, BAP and BMP being prepared by ERM for the Project.

# 1. INTRODUCTION

## 1.1 PURPOSE OF THE REPORT

Environmental Resources Management ("ERM") was appointed by Ignitis Renewables (referred to hereafter as "Ignitis" or "the Client") to provide supplementary information concerning the Kelme I and II Wind Farm in Lithuania, in support of the Project seeking finance from the European Bank for Reconstruction and Development ("EBRD").

There are several components of this supplementary information package required for Project disclosure with EBRD that pertain to the assessment of biodiversity and management thereof, including a Critical Habitat Assessment (CHA) and Biodiversity Action Plan (BAP)/Biodiversity Management Plan (BMP). To inform the CHA and BAP/BMP, information regarding the natural habitat types impacted by the construction-phase activities is required in terms of the location, extent and types of habitats in relation to Project infrastructure, impact type (temporary disturbance or permanent loss), nature of any residual impacts and possible measures to remediate or compensate for residual impacts. This is to supplement information regarding baseline status and condition of physical habitats that were potentially impacted by the construction of access roads, turbine pads and transmission lines, where there may be residual impacts that need to be addressed.

This report presents the findings of field surveys of selected focal areas of the Project and the assessment of residual impacts to habitats to inform further management actions and requirements in line with EBRD's expectations.

## 1.2 PROJECT DESCRIPTION

The Kelme Wind Farm Project (referred to hereafter as "the Project") located in Lithuania comprises two sub-projects, Kelme I and Kelme II, with a power generation capacity of 105 MW and 195 MW, respectively. Kelme I includes 16 wind turbines ("WTs"), whilst Kelme II includes 28 WTs. The Project also includes a 28.8 km underground transmission line to enable the connection of both wind farms to the electrical grid. The Project layout is shown on the map in Figure 1-1.

Construction commenced in May 2023, with construction having been completed and currently both sub-projects are undergoing test operations. Commercial operations for Kelme I are anticipated to start between Q1 and Q2 of 2025, while Kelme II is expected to begin operations later, between Q3 and Q4 of 2025.

For further detailed information on the Project components and technical specifications, the reader is referred to the detailed 'Project Description'.

Ignitis is seeking to finance the Project using a Project Finance structure involving EBRD. The Project has been categorized as 'Category A' under the EBRD's 2019 Environmental & Social ("E&S") Policy, signifying its potential for significant environmental and social impacts. Consequently, adherence to the EBRD's 2019 E&S Policy and associated Performance Requirements ("PR") is a critical component of the assessment.

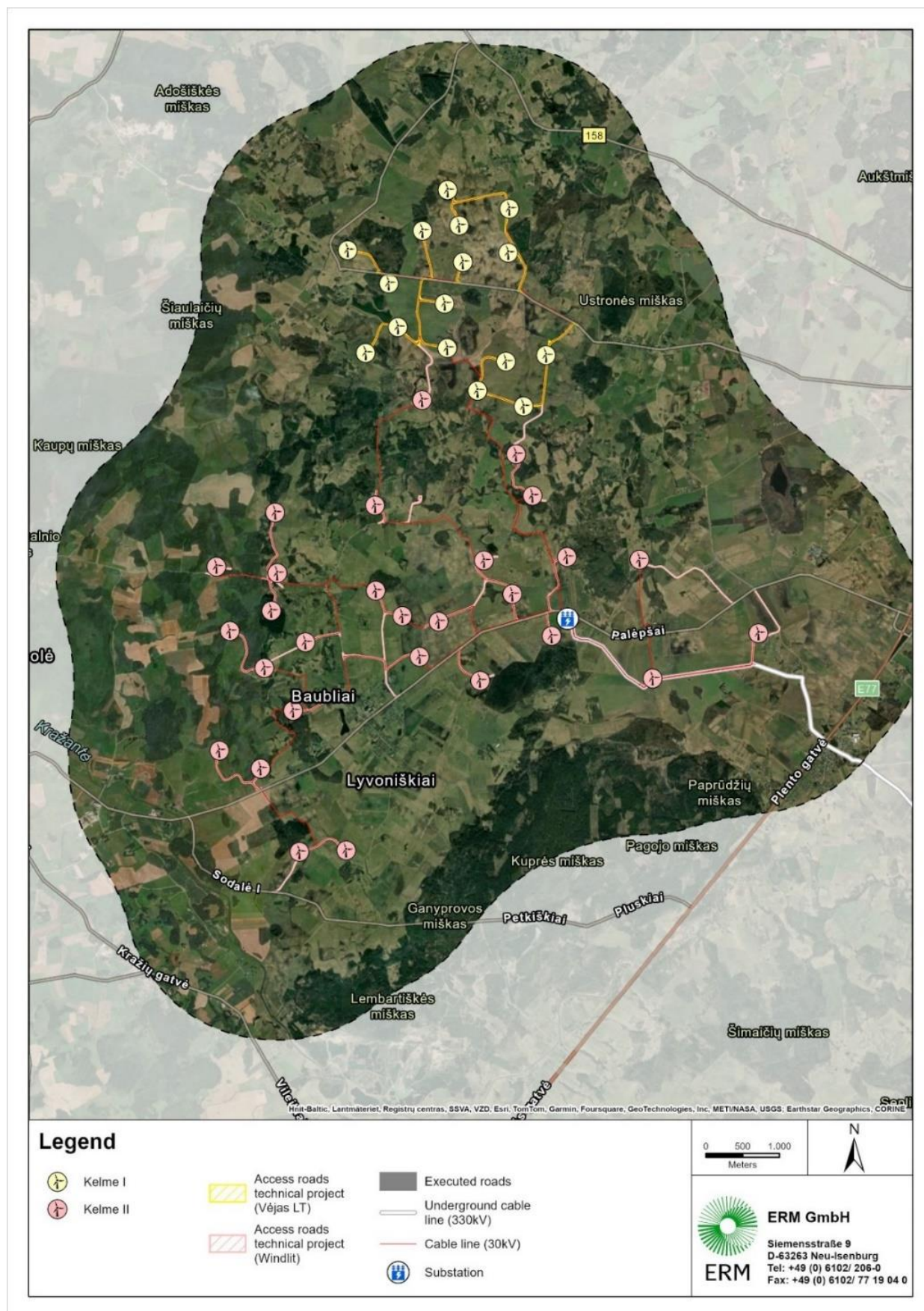


FIGURE 1-1 PROJECT LAYOUT MAP FOR KELME I AND II

Source: ERM, based on data provided by Ignitis

## 1.3 BACKGROUND

An Environmental Impact Assessment ("EIA") was completed for the larger wind farm, Kelme II (UAB Ekosistema, 2022<sup>1</sup>) and an EIA Screening Assessment for the smaller sub-project, Kelme I (UAB Ekosistema, 2019<sup>2</sup>).

National desktop datasets were used in the EIA with respect to habitat, which were identified, mapped and described at a relatively high level, using existing datasets for Lithuania/Europe. The habitat/biotope mapping in both the EIA screening for Kelme I and EIA for Kelme II highlight the presence of nearby patches of commercial (plantation) forests and natural forest patches, with the nearest forest area of state importance located adjacent to the Project. Peat bogs/depression wetlands are also described, as well as reclaimed swamps. The EIA Report for Kelme II indicates that certain habitat types in the Project area are protected under the EU Habitats Directive and mentions that the planned wind power plant does not fall within natural habitats of EU Community Importance (i.e. priority habitat types in terms of Annex I of the EU Habitats Directive), and whilst the Project infrastructure is located close to meadows and forests, the activity will not affect these habitats (activities are planned to take place on non-forest land and without altering natural areas).

However, based a gap analysis undertaken by ERM in 2024/25 of the Project EIA and related documentation against EBRD Performance Requirement 6 (PR6 – which relates to the assessment and management of project-related risks/impacts on biodiversity and ecosystems), several gaps in the habitat assessment contained in the EIA report were identified, including:

- A key gap relates to the lack of site-level field surveys or ground verification in the EIA to confirm habitat types and boundaries and locations where crossings of roads/transmission lines with forest, riverine and wetland habitat takes place, and the spatial extent and condition of any natural habitat affected.
- Based on a review of satellite imagery and the findings of the site visit conducted by ERM in November 2024, it appears that some of the planned access roads, transmission lines and temporary infrastructure does intersect natural forest, riverine and wetland habitats. Whilst access roads and turbine pads largely align with existing disturbance (i.e. existing dirt roads and areas of modified habitat under agricultural use), there are several areas where roads and underground powerlines appear to traverse wetlands (peat depressions) and where the layout appears to interact with forest patches and where forest habitat loss would be predicted to occur.
- The 330 kV underground cable appears to follow existing roads mainly but does seem to traverse through forest habitat near the crossing of the Gryzuva River as well as riverine/wetland habitat and also woodland/forest at several locations where existing access roads are not followed.

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<sup>1</sup> UAB Ekosistema (2022). Construction and Operation of Wind Power Plants in Kelme District Municipality (Kelme II): Environmental Impact Assessment (EIA) Report. For UAB WINDLIT.

<sup>2</sup> UAB Ekosistema (2019). Construction and Operation of Wind Power Plants in Kelme District Municipality (Kelme I): Screening Information for Environmental Impact Assessment. For UAB WINDLIT.

In response to these gaps, ERM recommended the following action:

**Assessment of residual impacts on habitat:** *Identify and assess residual legacy impacts to natural ecosystems and habitats associated with construction of infrastructure natural wetland, forest and riverine habitats to inform possible compensation / restoration measures that may be applicable. ERM has recommended the following approach:*

- *Natural habitats at infrastructure intersections (including wetlands - peat depressions/bogs, riverine areas associated with rivers/streams and forests) to be mapped in GIS (Geographical Information Systems) through the use of historical satellite imagery showing the pre-development land use.*
- *These focal areas are then to be verified in the field by a habitat specialist, to confirm the habitat type/classification, status, extent, condition of habitats disturbed. The habitat specialist will need to advise on whether permanent loss of habitat has occurred due to infrastructure development/habitat clearing and transformation due to the Project., the extent and habitat type. Where temporary impacts have occurred (temporary infrastructure or where the transmission line was installed below ground) these are to be differentiated and the status of the habitat determined (status of habitat recovery, whether there has been adequate restoration).*
- *Is also recommended that an inventory of flora be included in the habitat assessment, with a focus on identifying conservation-important plant species such as threatened species, local endemics, protected species nationally, etc.*
- *In addition, ERM recommends that an assessment of invasive species (IAS) risks and impacts be undertaken, particularly at the locations where residual impacts/disturbance to natural habitats has taken place during construction (invasive species of plants may introduced or their spread enhanced by construction-related disturbances).*

## 2. APPROACH AND METHODS

### 2.1 APPROACH

The approach to assessment of residual impacts on habitats involved a combined desktop assessment using satellite imagery and available habitat datasets as well as ground-truthing of identified focal areas in the field to confirm the habitat types and extents, their status and the nature of any residual impacts.

#### 2.1.1 DESKTOP ASSESSMENT

A desktop level assessment using GIS (Geographical Information Systems, QGIS) was first undertaken by ERM to determine the location of focal areas of habitats as these relate to forest, riverine vegetation and wetlands crossed by the Project infrastructure based on the latest layout plan and spatial data provided by Ignitis (showing location and extent of access roads/upgrades, undergrounds transmission line alignment, turbine and pad locations and extent. Initially, the spatial data showing access roads, turbines, pads, transmission lines was overlaid onto a global land cover map (CORINE land cover), as indicated on the map in Figure 2-1. Intersections of infrastructure for the Project with the land cover types related to natural habitat types were plotted in GIS (i.e. broad-leaved and mixed forest types, inland wetlands/marshes and transitional woodland).

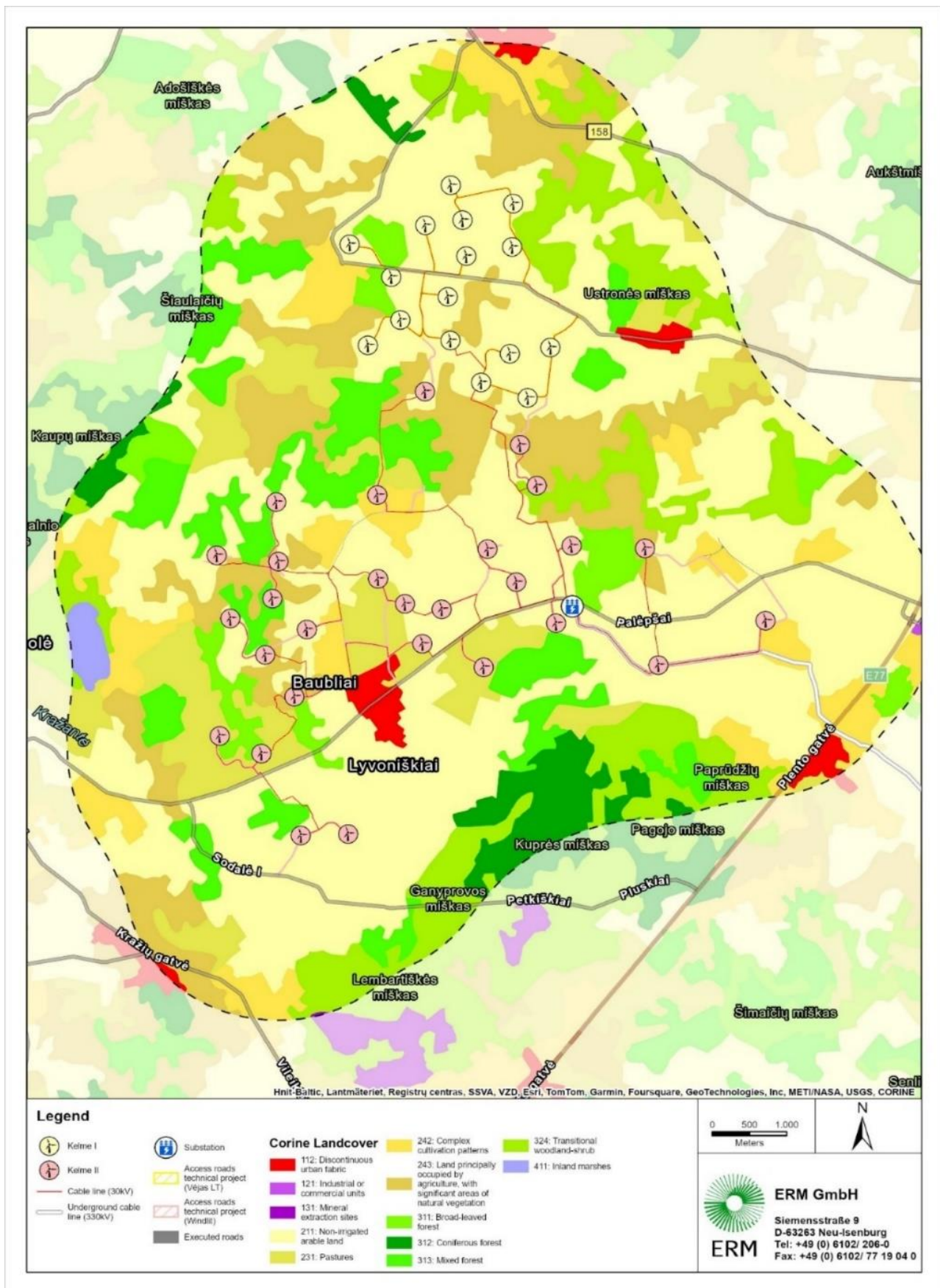


FIGURE 2-1 CORINE LAND COVER MAP WITH PROJECT LAYOUT OVERLAY

Source: ERM, based on data provided by Ignitis, CORINE land cover dataset (Copernicus, 2018)

In addition, available spatial information from the Lithuanian Geoportal.lt database (online at: <https://www.geoportal.lt/map/>) was sourced and inputted into GIS, showing natural habitats of European Community Importance (i.e. Annex I Habitats of the EU Habitats Directive) mapped for the country and managed by the Ministry of Environment of the Republic of Lithuania. The intersection of Project infrastructure with these important habitat types was also mapped and used to inform focal sites for field verification. These are shown in relation to the Project infrastructure/layout plan in **Error! Reference source not found.** and listed below in Table 2-1.

**TABLE 2-1 ANNEX I HABITAT TYPES FOR THE PROJECT**

Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EUNIS Habitat Type and Code (2012)	Revised EUNIS Habitat Type and Code (2021)	EU Terrestrial Habitat Red List: Code and Name	EU Red List Status (2016)
3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	No	C1.2 Permanent mesotrophic lakes, ponds and pools	-	C1.2a Permanent oligotrophic to mesotrophic waterbody with Characeae	VU
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition — type vegetation	No	C1.3 Permanent eutrophic lakes, ponds and pools	-	C1.2b Mesotrophic to eutrophic waterbody with vascular plants	NT
3160: Natural dystrophic lakes and ponds	No	C1.4 Permanent dystrophic lakes, ponds and pools	-	C1.4 Permanent dystrophic waterbody	NT
*6120 Xeric sand calcareous grasslands	Yes	E1.9 Open non-Mediterranean dry acid and neutral grassland, including inland dune grassland	R1P Oceanic to subcontinental inland sand grassland on dry acid and neutral soils	E1.9a Oceanic to subcontinental inland sand grassland on dry acid and neutral soils	EN
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites)	No	E1.2 Perennial calcareous grassland and basic steppes	R1A Semi-dry perennial calcareous grassland (meadow steppe)	E1.2a Semi-dry perennial calcareous grassland	VU
*6230 Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Yes	E1.7 Closed non-Mediterranean dry acid and neutral grassland	R1M Lowland to montane, dry to mesic grassland usually dominated by Nardus stricta	E1.7 Lowland to submontane, dry to mesic Nardus grassland	VU
*6270 Fennoscandian lowland species-rich dry to mesic grasslands	Yes	E2.2 Low and medium altitude hay meadow	R22 Low and medium altitude hay meadow	E2.2 Low and medium altitude hay meadow	VU
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	No	E3.5 Moist or wet oligotrophic grassland	R37 Temperate and boreal moist or wet oligotrophic grassland	E3.5 Temperate and boreal moist or wet oligotrophic grassland	EN
6450: Northern boreal alluvial meadows	No	E3.4 Moist or wet eutrophic and mesotrophic grassland	R35 Moist or wet mesotrophic to eutrophic hay meadow	E3.4a Moist or wet mesotrophic to eutrophic hay meadow	LC
6510: Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	Yes	E2.2 Low and medium altitude hay meadows	R22 Low and medium altitude hay meadow	E2.2 Low and medium altitude hay meadow	EN
*7110 Active raised bogs	Yes	D1.1 Raised bogs	-	D1.1 Raised bog	EN
7140 Transition mires and quaking bogs	No	D2.2 Poor fens and soft-water spring mires	-	D2.2a Poor fen	VU

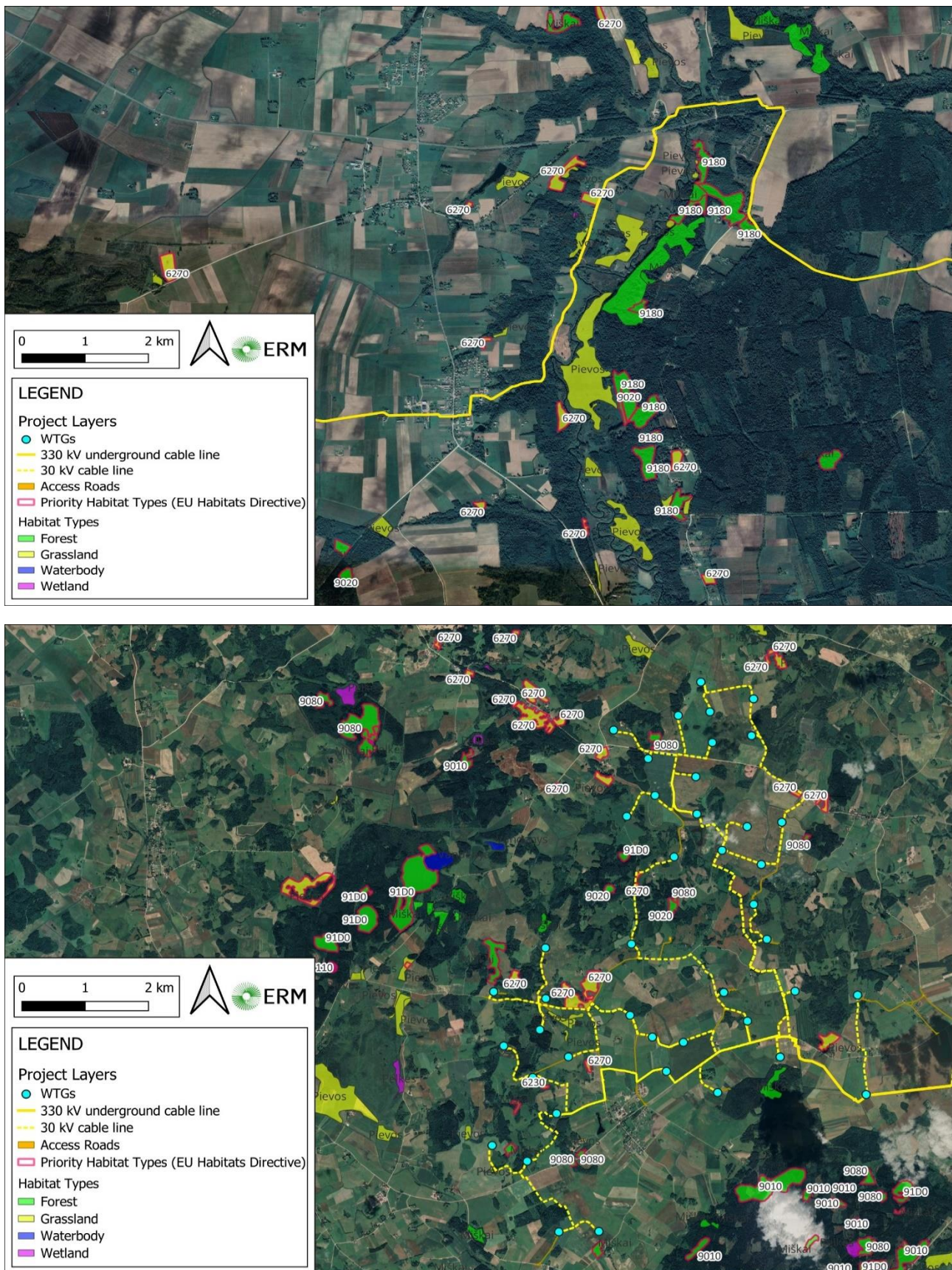
Habitat Classification: Annex I of the EU Habitats Directive	Annex I Priority Habitat Type?	EUNIS Habitat Type and Code (2012)	Revised EUNIS Habitat Type and Code (2021)	EU Terrestrial Habitat Red List: Code and Name	EU Red List Status (2016)
7160 Fennoscandian mineral-rich springs and springfens	No	D2.2 Poor fens and soft-water spring mires	-	D2.2c Intermediate fen and soft-water spring mire	VU
*9010 Western Taiga	Yes	G1.9 Non-riverine woodland with birch, aspen or rowan	T1C Temperate and boreal mountain Betula and Populus tremula forest on mineral soils	G1.9a Temperate and boreal mountain Betula and Populus tremula forest on mineral soils	LC
*9020 Fennoscandian hemiboreal natural old broad-leaved deciduous forests (Quercus, Tilia, Acer, Fraxinus or Ulmus) rich in epiphytes	Yes	G1. A Meso- and eutrophic oak, hornbeam, ash, sycamore, lime, elm and related woodland	T1E Carpinus and Quercus mesic deciduous forest	G1. Aa Carpinus and Quercus mesic deciduous woodland	NT
9050 Fennoscandian herb-rich forests with Picea abies	No	G3.A Spruce taiga woodland	T3F Dark taiga	G3.A Picea taiga woodland	NT
*9080 Fennoscandian deciduous swamp woods	Yes	G1.4 Broadleaved swamp woodland not on acid peat	T15 Broadleaved swamp forest on non-acid peat	G1.4 Broadleaved swamp woodland on non-acid peat	VU
9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	No	G1. A Meso- and eutrophic oak, hornbeam, ash, sycamore, lime, elm and related woodland	T1E Carpinus and Quercus mesic deciduous forest	G1. Aa Carpinus and Quercus mesic deciduous woodland	NT
*9180 Tilio-Acerion forests of slopes, screes and ravines	Yes	G1.A Meso- and eutrophic oak, hornbeam, ash, sycamore, lime, elm and related woodland	T1F Ravine Forest	G1. Ab Ravine woodland	NT
*91D0 Bog woodland	Yes	G3.D Boreal bog conifer woodland	T3J Pinus and Larix mire forest	G3. Da Pinus mire woodland	VU
*91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Yes	G1.1 Riparian and gallery woodland, with dominant alder, birch, poplar or willow	T11 Temperate Salix and Populus riparian forest	G1.1 Temperate and boreal softwood riparian woodland	NT

Table key:

EU Red List threat status: EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern

\*asterix indicates priority habitats in terms of Annex I of the EU Habitats Directive

Finally, a review of satellite imagery (Google Earth™) in relation to the Project layout was undertaken in GIS by an experienced remote-sensing operator with extensive experience in identifying and classifying habitats using satellite imagery. This manual process was useful in identifying additional areas potentially impacted at a scale/resolution not covered by the global/regional habitat datasets used.



**FIGURE 2-2 ANNEX I HABITAT TYPES IN RELATION TO THE PROJECT (ABOVE FOR THE TL, BELOW FOR WF)**

Source: ERM, based on data provided by Ignitis, Lithuanian Geoportal.lt database online at:  
<https://www.geoportal.lt/map/>

### 2.1.2 FIELD VERIFICATION

ERM developed a scope of work to inform field surveys of the focal areas identified during the desktop GIS-based assessment in 2.1.1.

Ignitis subsequently appointed the local consultants and qualified botanists in Lithuania representing the Coastal Research and Planning Institute (CORPI) to undertake the field surveys which were conducted over a period of two days in summer-time (25 - 26 June 2025), being the optimal period for sampling vegetation and habitat in Lithuania (aligns with the growing season and flowering period for key plant species, aiding in visual identification of species).

The field surveys were undertaken in accordance with the following scope:

- Conduct a site-level field survey to verify the habitats at each of the 29 focal locations identified by ERM (as per the outcomes of the initial GIS analysis).
- The site level survey shall consist of a **rapid visual, transect based survey of habitats** to document the following:
  - Habitat characteristics at the site of the access road/transmission line crossings;
  - Rapid inventory of flora that focuses on any conservation-important plants (i.e. threatened or protected species, local endemic species) as well as invasive plants/weeds;
  - Identification of any Invasive Alien Plant species or serious weeds present within the habitat and immediate surrounds that would benefit from control measures (species inventory and indication of density/abundance of each species);
  - Visual assessment and basic description of habitat type informed by structure and composition;
  - Classification of habitat in accordance with Annex I of the EU Habitats Directive and importantly, identification of any 'priority' habitats in terms of Annex I listing;
  - Brief comment on any other forms of habitat disturbance at the site (existing roads, agriculture, etc.);
  - Opinion on habitat condition (basic rating can be used: natural/pristine, semi-intact, degraded, heavily degraded, artificial);
  - Status of the habitat: e.g. permanently impacted/lost, recovering naturally;
  - Basic mapping of natural habitat boundaries in GIS for each location;
  - Opinion on restoration potential for the habitat (natural recovery possible and only monitoring is necessary, or if assisted revegetation is needed) and any key measures or interventions recommended, or whether compensation measures are needed for habitat lost/severely degraded beyond repair; and
  - Digital photograph(s) to be taken of the habitat at each site assessed.

Data from the site surveys was collected in a standard format, according to the template in Table 2-2.

TABLE 2-2 STANDARD FIELD DATA COLLECTION SHEET FOR HABITATS

Rapid Habitat Assessment: Data Collection Sheet	
Date	
Assessor name	
Location / site reference	
Habitat type / classification	
Habitat description	
Dominant native flora:	
Dominant invasive species and densities:	
Conservation-important flora:	
Comments on disturbances	
Habitat condition	Pristine / Good / Semi-intact / Degraded / Heavily degraded / Modified / Artificial
Status of habitat	Lost / permanently impacted / Recovering
Restoration potential	Natural recovery (requires monitoring) / Assisted revegetation necessary / Compensation required / Other (specify:
Interventions recommended	
Link to photograph(s)	
Other comments	

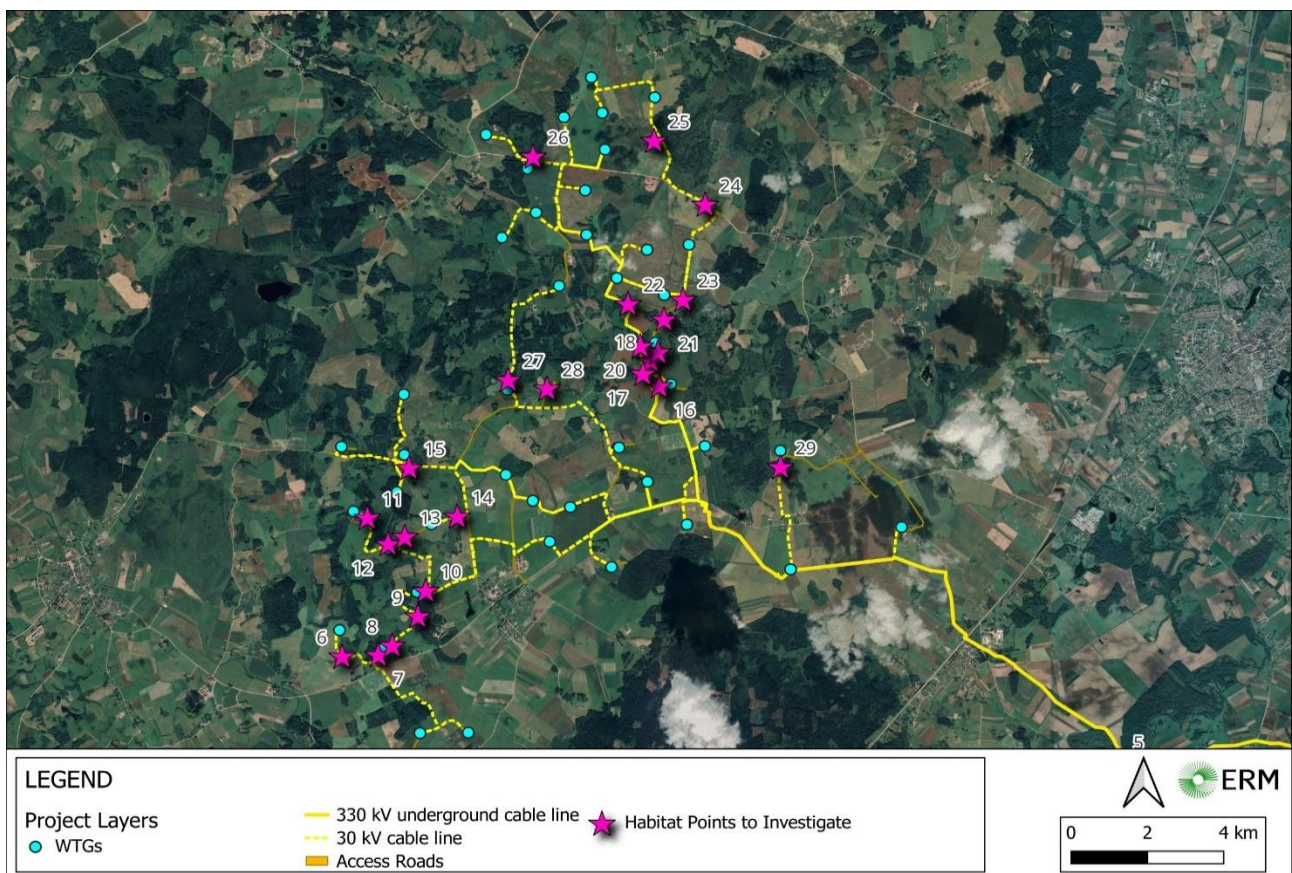
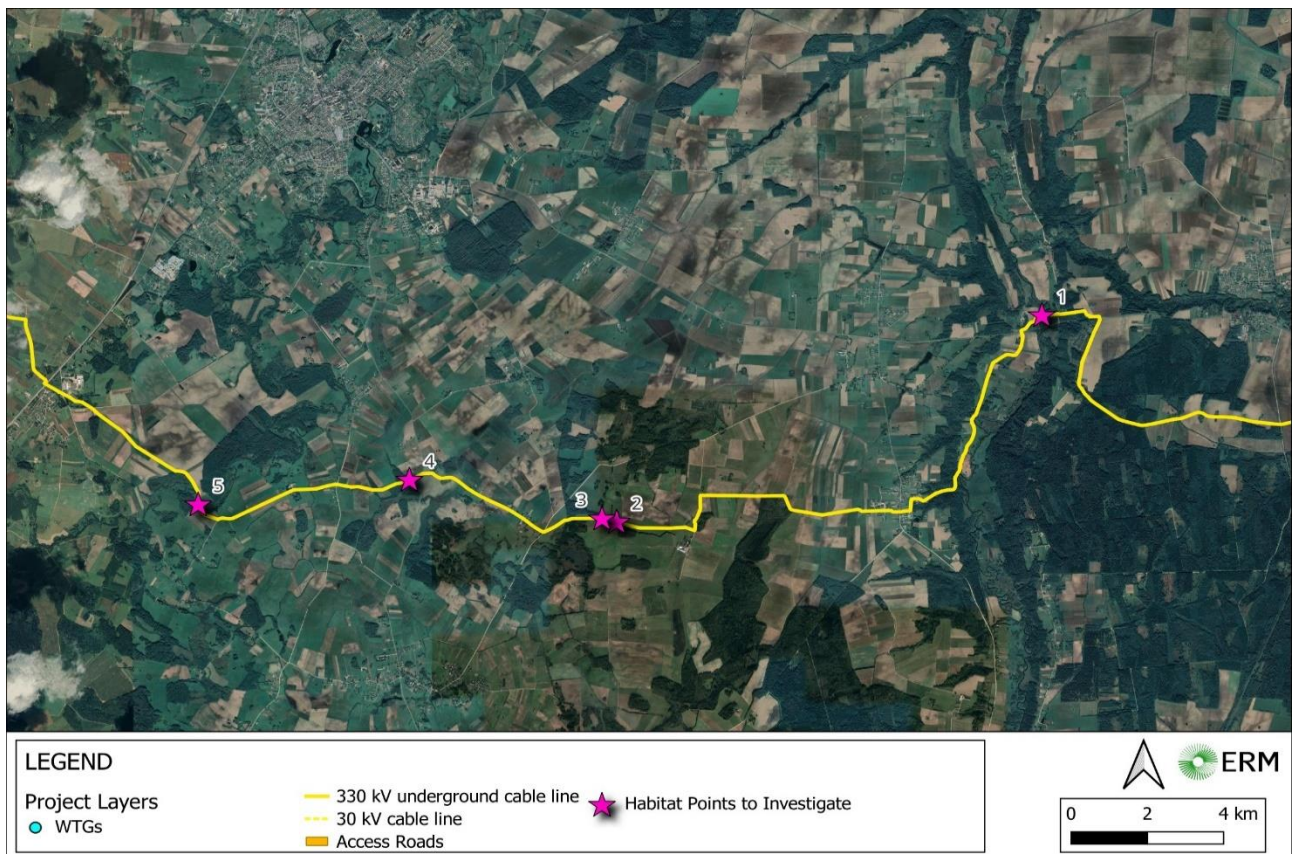
Source: Field sheet developed by ERM (2025), unpublished

### 3. SUMMARY OF RESULTS

#### 3.1 DESKTOP GIS ANALYSIS

The GIS analysis undertaken as per the approach and methods in Chapter 2 identified a total of 29 focal areas for field verification of habitats where potential residual impacts of Project infrastructure construction to natural habitats are predicted to have possibly occurred.

These are indicated on the map in Figure 3-1.



**FIGURE 3-1 MAP SHOWING THE LOCATION OF FOCAL SITES IDENTIFIED FOR FIELD SURVEYS OF HABITATS (ABOVE FOR THE TL, BELOW FOR THE WF)**

Source: ERM, based on data provided by Ignitis

### 3.2 FIELD SURVEYS

Field surveys were undertaken at each of the focal points requiring investigation (indicated in section 3.1 and the map in Figure 3-1).

A summary of the results of the field surveys to verify habitats is provided in Table 3-1. *Detailed information for each focal assessment point is contained in the summary table contained in [Annexure A](#) (section 6.1) at the back of this report.*

The findings of the surveys indicate that:

- Habitat types comprise of natural wetlands, woodland and forest patches, riverine forest, shrubland/scrubland, wet meadows and artificial habitats (i.e. planted trees, drainage channels).
- For a few habitats, invasive alien plants, weeds and ruderals were identified, and these are typical of disturbances caused by agricultural activities (existing impact and disturbance regime prior to the construction of the wind farm infrastructure).
- Conservation-important (threatened, rare, protected) plant species were generally absent from the habitat types assessed, except for wetland areas associated with the focal areas #26 and #29, where the following plant species that are protected nationally in Lithuania were identified:
  - *Krūmynuose rasta*
  - *Neottia (Listera) ovata* (Common Twayblade) – LC globally
  - *Platanthera bifolia* (Lesser Butterfly Orchid) – LC globally
  - *Platanthera chlorantha* (Greater Butterfly Orchid) – LC globally

However, these wetlands and their flora remain unaffected by the Project.

- The majority of the habitats are not representative of EU habitats of community importance (in terms of listing in Annex I of the EU Habitats Directive) and do not meet the criteria for identifying/classifying habitats as such. The only exception is the habitat at sample site #22, which may be classified as 'priority' Annex I habitat type 9020: *Fennoscandian hemiboreal natural old broad-leaved deciduous forests (Quercus, Tilia, Acer, Fraxinus or Ulmus) rich in epiphytes*, however this habitat has not been impacted by the Project.
- Many habitats remain unimpacted and for most of the focal areas investigated in the field, there were no visible signs of significant impacts, and no residual impacts could be identified as being associated with the Project.
- For the habitats that have been impacted, these are mainly due to the legacy and long-term impacts of agricultural activities (clearing of arable land and cultivation) and existing access roads.
- For a few areas assessed, it could not be determined whether impacts to habitats relate to the Project or other activities related to agriculture for example. For these areas, the vegetation and habitat are in a state of recovery following disturbance, and in this case, it is recommended that natural recovery be allowed, with monitoring to determine the need for any active intervention (such as active planting or alien plant/weed control measures).

- Where there have been more significant and measurable residual impacts, typically resulting in the loss of habitat elements due to the Project, restoration (assisted vegetation) or compensation actions have been recommended, for wetland and wet scrubland habitats and specifically at sites #13 and #19.

TABLE 3-1 SUMMARY OF HABITAT FIELD SURVEY AND ASSESSMENT FINDINGS

Site #	Habitat Type	Annex I Type?	Conservation important species?	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations
1	Riverine forest	No	None	Semi-intact	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery.
2	Woodland patch	No	None	Semi-intact	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery
3	Woodland patch	No	None	Semi-intact	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery
4	Wetland	No	None	Pristine	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery
5	Wet riparian meadow with <i>Alnus incana</i> tree belt	No	None	Pristine	-	Unaffected by the cable laying works.	None.
6	Wet scrubland with grassland fragments	No	None	Semi-intact	Lost	The road crossing has disturbed a small part (approx. 0.02 ha) of the edge of the wetland habitat, but no significant adverse effects on the overall status of the entire habitat have been identified at this time.	To preserve the mesophytic grassland vegetation on the roadside, it is recommended to mow the roadside.  It is relevant to monitor changes in the hydrological regime in order to assess further impacts of the road culvert
7	Woodland	No	None	Degraded and Artificial	Lost	An area of 0,02 ha has been converted, and a culvert has been built under the road. The forest cover is preserved.  The road area itself cannot be restored, but the surrounding areas will undergo natural regeneration.	Allow for natural recovery (with monitoring).
8	Scrubland with wet meadows	No	None	Pristine	-	No visible signs of significant impacts.	None.
9	Forest	No	None	Good	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery
10	Wetland	No	None	Pristine	-	No impact - the access road follows an existing local road.	None.
11	Woodland	No	None	Modified	-	No impact due to the Project.	None.

Site #	Habitat Type	Annex I Type?	Conservation important species?	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations
12	An abandoned meadow undergoing shrub encroachment	No	None	Modified	-	No impact due to the Project.	None.
13	Natural wetland	No	None	Degraded	Permanently impacted	<p>A newly constructed access road crosses a natural wetland located within a small gully. On the southern side of the road, approximately 0.26 ha of natural vegetation has been destroyed. A pond was excavated, likely causing drainage of the area up to the road.</p> <p>On the northern side of the road, soil was either deposited or pushed into the wetland during road embankment construction, resulting in patches of exposed bare soil that are now undergoing spontaneous re-naturalization. A culvert connects the wetland on both sides of the road.</p>	<p>Compensation required.</p> <p>It is recommended to restore 0.26 hectares of natural meadow, preferably on moist soils.</p>
14	Natural wetland	No	None	Semi-intact	Permanently impacted	Impacts to the wetland are pre-existing and unrelated to the Project.	None.
15	Natural wetland	No	None	Semi-intact	Permanently impacted	Impacts to the wetland are pre-existing and unrelated to the Project.	None.
16	Wetland	No	None	Pristine	-	The cable installation has not affected the natural habitat.	None.
17	Drainage channels with grassy vegetation in wet areas	No	None	Artificial	Lost.	The cable installation has not affected the natural habitat.	None
18	Shrub wetland	No	None	Good	Recovering	No visible signs of significant impacts.	No specific requirements: allow for natural recovery.
19	Shrub wetland	No	None	Degraded / Artificial	Recovering	The road is built on the edge of a wetland. Major disturbance to the habitat is observed in the area around the wind turbine, where the relief has been altered, spruce trees have been planted and scrub has been cleared.	<p>Assisted revegetation necessary.</p> <p>Remove planted spruce trees, allowing the habitat to transform naturally. In order to preserve the main habitat of the wetland, it is necessary to restore the</p>

Site #	Habitat Type	Annex I Type?	Conservation important species?	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations
						About 40% of the wetland has been drained. We cannot assess whether the construction of the turbines was related to land drainage activities	hydrological regime, to restore the culvert and to assess the parameters of the culvert built under the road.
20	Drainage channels with grassy vegetation in wet areas	No	None	Artificial	Lost	The cable installation has not affected the natural habitat.	None.
21	Forest	No	None	Degraded	Permanently impacted	No visible signs of significant impacts.	No specific requirements: allow for natural recovery.  Native grasslands will naturally develop around the road crossing if it is mown regularly.
22	Forest	Yes: 9020	None	Pristine	-	No visible signs of significant impacts.	None.
23	Shrubland	No	None	Degraded	Permanently impacted	On the western side of the road, the shrubs and the grass cover underneath have been removed and part of the area has been sown with agricultural crops.	Allow for natural recovery (with monitoring).
24	Shrubland	No	None	Good	Recovering	No visible signs of significant impacts.	None.
25	Natural shrubland	No	None	Degraded	Recovering	Not possible to determine whether clearance of habitat is the result of construction or agricultural activities.	Allow for natural recovery (with monitoring).
26	Planted spruce stand	No	Yes:  <i>Listera ovata</i> , <i>Platanthera bifolia</i>	Pristine	-	These habitats remain intact and undisturbed.	None.
27	Planted forest	No	None	Modified	-	It is not possible to determine whether this change is a consequence of wind energy facility construction or agricultural activities.	It is recommended to restore 0.46 hectares of natural meadow.
28	A natural moist meadow overgrown with shrubs.	No	None	Pristine	-	No access road to the wind energy facility has been constructed, so no damage is observed.	None.

Site #	Habitat Type	Annex I Type?	Conservation important species?	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations
29	Wetland	No	Yes: <i>Krūmynuose rasta</i> , <i>Platantera chlorantha</i>	Pristine	-	No impacts due to the Project.	None.

Source: ERM and CORPI (2025)

## 4. CONCLUSION

Whilst several wetlands, forest and woodland patches, shrubland and riverine habitats have been identified in proximity to wind farm infrastructure that has been constructed (i.e. access roads, underground transmission line installation, turbine pads), no habitat types of EU community importance (in terms of listing in Annex I of the EU Habitats Directive) have been impacted by the Project construction.

Impacts to natural habitats have been largely avoided through planning of linear infrastructure (roads, transmission line) and turbines outside of natural area and restricting these largely to existing roads and cultivated lands where habitats are modified and disturbance has already occurred. Many habitats remain unimpacted and for most of the focal areas investigated in the field, there were no visible signs of significant impacts, and no residual impacts could be identified as being associated with the Project.

A few habitats are impacted by invasive alien plants, weeds and ruderal plants; however, these are considered typical of disturbances caused by existing/legacy agricultural activities (prior to the construction of the wind farm infrastructure).

Most habitats do not host conservation important flora species, except for two wetland areas – however no Project impacts to these areas are identified.

For a few areas assessed, it could not be determined whether impacts to habitats relate to the Project or other activities related to agriculture for example. For these areas, vegetation and habitat is in a state of recovery following disturbance, and in this case, it is recommended that natural recovery be allowed, with monitoring to determine the need for any active intervention (such as active planting or alien plant/weed control measures).

Where there have been more significant and measurable residual impacts, typically resulting in the loss of habitat elements due to the Project, restoration (assisted vegetation) or compensation actions have been recommended, for wetland habitats at sites #13 and #19.

These recommendations will need to be considered in the Critical Habitat Assessment (CHA) and the relevant management plans: Biodiversity Action Plan (BAP) and Biodiversity Management Plan (BMP).

## 5. REFERENCES

European Bank for Reconstruction and Development (EBRD), 2019. E&S Policy (containing relevant Performance Requirements). Available online at: <https://www.ebrd.com/home/who-we-are/ebrd-values/ebrd-environmental-social-sustainability/reports-and-policies/ebrd-performance-requirements.html>



UAB Ekosistema, 2019. Construction and Operation of Wind Power Plants in Kelme District Municipality (Kelme I): Screening Information for Environmental Impact Assessment. For UAB WINDLIT.



UAB Ekosistema, 2022. Construction and Operation of Wind Power Plants in Kelme District Municipality (Kelme II): Environmental Impact Assessment (EIA) Report. For UAB WINDLIT.



## 6. ANNEXURES




### 6.1 ANNEXURE A: SUMMARY OF FINDINGS OF THE FIELD SURVEY OF HABITATS



TABLE 6-1 SUMMARY OF FINDINGS OF THE FIELD SURVEY OF HABITATS



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
1	Riverine forest	No	<p>The transmission line was constructed along the route of a former overhead electricity line.</p> <p>Analysis of orthophotographic maps indicates that the forest in this location was regularly cleared in the past. Currently, the forest habitat is undergoing natural regeneration: trees and shrubs are present, and a characteristic herbaceous layer has developed.</p>	<p><u>Dominant species:</u> <i>Alnus incana</i>, <i>Salix caprea</i>, <i>Cornus sanguinea</i>, <i>Eunymus europaeus</i>, <i>Rubus idaeus</i>, <i>Humulus lupulus</i>, <i>Equisetum pratense</i>, <i>Poa nemoralis</i>, <i>Aegopodium podagraria</i>, <i>Silene dioica</i>, <i>Campanula trachelium</i></p> <p><u>Invasive species:</u> <i>Acer negundo</i>, <i>Impatiens parviflora</i></p> <p><u>Conservation important species:</u> None</p>	Semi-intact	Recovering	There is no significant negative impact on the condition of the habitat.	No specific requirements: allow for natural recovery.	
2	Woodland patch	No	<p>A small woodland fragment situated within surrounding agricultural fields.</p> <p>The underground cable was laid in a wide linear clearing, currently characterized by early-successional grassland species and an underdeveloped herbaceous layer. The clearing is not visible in orthophotographic maps from the 2021–2023 period. Therefore, it remains unclear whether</p>	<p><u>Dominant species:</u> <i>Agrostis stolonifera</i>, <i>Agrostis capillaris</i>, <i>Poa pratensis</i>, <i>Phleum pratense</i>, <i>trifolium repens</i>, <i>Leucanthemum vulgare</i>, <i>ranunculus repens</i>, <i>Deschampsia caespitosa</i>, <i>Hypericum maculatum</i>, <i>Centaurea jacea</i>, <i>Prunella vulgaris</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Semi-intact	Recovering	There is no visible significant negative impact on the habitat.	No specific requirements: allow for natural recovery	



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			the clearing was made specifically for the installation of the power transmission line or due to other factors.						
3	Woodland patch	No	<p>A small woodland fragment situated within surrounding agricultural fields.</p> <p>The underground cable was laid in a wide linear clearing, currently characterized by early-successional grassland species and an underdeveloped herbaceous layer. The clearing is not visible in orthophotographic maps from the 2021–2023 period. Therefore, it remains unclear whether the clearing was made specifically for the installation of the power transmission line or due to other factors.</p>	<p><u>Dominant species:</u> <i>Glyceria fluitans</i>, <i>Lychnis flos-cuculi</i>, <i>Ranunculus repens</i>, <i>Myosotis scorpioides</i>, <i>Juncus effusus</i>, <i>trifolium repens</i>, <i>campanula patula</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Semi-intact	Recovering	There is no visible significant negative impact on the habitat.	No specific requirements: allow for natural recovery.	
4	Wetland	No	<p>A mosaic of wet grassland and scrubland.</p> <p>The cable is laid in the clearing. The cable's entry point under the wetland was damaged by vegetation cover, which is now recovering naturally.</p>	<p><u>Dominant species:</u> <i>Alnus incana</i>, <i>Salix cinerea</i>, <i>Salix fragilis</i>, <i>Prunus padus</i>, <i>Phragmites australis</i>, <i>Phalaris arundinacea</i>, <i>Deshampsia cespitosa</i>, <i>Holcus sp.</i>, <i>Ranunculus repens</i>, <i>Cirsium palustre</i>, <i>Lychnis flos-cuculi</i>, <i>Cardus crispus</i>.</p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u></p>	Pristine	Recovering	There are no significant adverse effects on the condition of the habitat.	Allow for natural recovery (with monitoring).	




Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
				None					
5	Wet riparian meadow with <i>Alnus incana</i> tree belt	No	All-grass wet meadow on the river terrace. In the foothills, the tree belt is formed by <i>Alnus incana</i> . Natural riparian meadow with characteristic species.	<u>Dominant species:</u> <i>Filipendula ulmaria</i> , <i>Phragmites australis</i> , <i>Thalictrum lucidum</i> , <i>Valeriana officinalis</i> , <i>Urtica dioica</i> , <i>Anthriscus sylvestris</i> , <i>Geranium pratense</i> , <i>Alopecurus pratensis</i> , <i>Dactylis glomerata</i> , <i>Cirsium oleraceum</i> , <i>Alnus incana</i> <u>Invasive species:</u> None <u>Conservation important species:</u> None	Pristine	-	Unaffected by the cable laying works.	None	
6	wet scrubland with grassland fragments	No	<p>Waterlogged scrubland, with beaver and beaver channels. Fragments of mesophytic grassland on the edges of the wetland, on the roadside. Habitat 6510 has been destroyed by agricultural crops, with plant species characteristic of the habitat still present along the roadside.</p> <p>The grassland habitat has been altered by agricultural activities. Historical data indicate that 6510 habitats have been identified in the area and have been converted to agricultural crops. Fragments of vegetation are characteristic of the habitat that are preserved on the roadside.</p>	<u>Dominant species:</u> <i>Salix cinerea</i> , <i>Betula pendula</i> , <i>Typha angustifolia</i> , <i>Equisetum fluviatile</i> , <i>Carex acuta</i> , <i>Filipendula ulmaria</i> , <i>Potentilla palustri</i> , <i>Calamagrostis canescens</i> , <i>Hottonia palustris</i> , <i>Lemna trisulca</i> , <i>Hydrocharis morsus-ranae</i> , <i>Alisma plantago-aquatica</i> , <i>Filipendula vulgaris</i> , <i>Sanguisorba officinalis</i> , <i>Leucanthemum vulgare</i> , <i>Galium album</i> , <i>Briza media</i> , <i>Festuca pratensis</i> , <i>Alchemilla acutiloba</i> <u>Invasive species:</u> None <u>Conservation important species:</u> None	Semi-intact	Lost	<p>The road crossing has disturbed a small part (approx. 0.02 ha) of the edge of the wetland habitat, but no significant adverse effects on the overall status of the entire habitat have been identified at this time</p>	<p>To preserve the mesophytic grassland vegetation on the roadside, it is recommended to mow the roadside.</p> <p>It is relevant to monitor changes in the hydrological regime in order to assess further impacts of the road culvert</p>	
7	Woodland	No	The road is on the border between forest and scrub. <i>Alnus incana</i> has been felled.	<u>Dominant species:</u> <i>Populus tremula</i> , with <i>Quercus robur</i> , <i>Prunus padus</i> , <i>Corylus avellana</i> , <i>Alnus incana</i>	Degraded and Artificial	Lost	An area of 0,02 ha has been converted, and a culvert has been built under the road. The	Allow for natural recovery (with monitoring)	



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
				<u>Invasive species:</u> None  <u>Conservation important species:</u> None			forest cover is preserved.  The road area itself cannot be restored, but the surrounding areas will undergo natural regeneration.		
8	Scrubland with wet meadows	No	Mosaic Salix cinerea shrublands with tall grass meadows.	<u>Dominant species:</u> <i>Salix cinerea</i> , <i>Bistorta major</i> , <i>Cirsium rivulare</i> , <i>Lychnis flos-cuculi</i> , <i>Cirsium oleraceum</i> , <i>Carex vulpina</i> , <i>Scirpus sylvaticus</i> , <i>Galium boreale</i> , <i>Galium album</i> , <i>Potentilla erecta</i> , <i>Aegopodium podagraria</i>  <u>Invasive species:</u> <i>Cirsium arvense</i> (widespread in drier, damaged soils)  <u>Conservation important species:</u> None	Pristine	-	There are no significant adverse effects on the condition of the habitat.	None.	
9	Forest	No	The area consists of a young deciduous forest stand where thinning operations have taken place, leading to localized disturbance of the natural herbaceous layer. It is unclear whether this disturbance resulted from the installation of the power transmission line or the thinning activities. The adjacent maturing oak stand appears to be unaffected.	<u>Dominant species:</u> <i>Betula pendula</i> , <i>Alnus glutinosa</i> , <i>Populus tremula</i> , <i>Padus avium</i> , <i>Corylus avellana</i> , <i>Dryopteris carthusiana</i> , <i>Ranunculus lanuginosus</i> , <i>Fragaria vesca</i> , <i>Geum rivale</i> , <i>Oxalis acetosella</i> , <i>Dryopteris filix-mas</i> , <i>Rubus idaeus</i> , <i>Carex sylvatica</i> , <i>Phyteuma spicata</i> , <i>Ranunculus repens</i> , <i>Asarum europaeum</i> , <i>Dactylis glomerata</i> , <i>Deschampsia cespitosa</i>	Good	Recovering	The adjacent maturing oak stand appears to be unaffected.	No specific requirements: allow for natural recovery	



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
				<u>Invasive species:</u> None - just ruderal species like <i>Urtica dioica</i>  <u>Conservation important species:</u> None					
10	Wetland	No	Wetland areas located to the north and south of the road remain unaffected.	<u>Dominant species:</u>  <u>Invasive species:</u>  <u>Conservation important species:</u>	Pristine	-	The access road follows an existing local road.  No negative impact on the habitat was observed.	None	
11	Woodland	No	Information about the former habitat can only be inferred from orthophotographic maps, as the entire area surrounding the wind energy facility has been cleared and converted into arable land. The maps show a 0.7 ha forest plot. According to forest cadastre data, this is a 36-year-old grey alder stand with birch. The plot was connected to the main forest block by a shrub-encroached meadow of approximately 0.18 ha.	<u>Dominant species:</u> None  <u>Invasive species:</u> None  <u>Ruderal species:</u> <i>Cirsium arvense</i> , <i>Artemisia vulgaris</i>  <u>Conservation important species:</u> None	Modified	-	No impact due to the Project.	None	
12	An abandoned meadow undergoing shrub encroachment	No	A new road was constructed across cultivated fields. Based on older orthophotographic maps, the location of the road was formerly an abandoned, shrub-encroached meadow.	<u>Dominant species:</u> None  <u>Invasive species:</u> None  <u>Conservation important species:</u> None	Modified	-	No impact due to the Project.	None	



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			Currently, the meadow has been converted into arable land. Available data does not allow for determining whether the road was built through the meadow or the cultivated fields. The forest located beyond the meadow remains undisturbed.  External pressures include adjacent arable fields and access road.						
13	Natural wetland	No	Based on a small remnant patch of moist meadow within the disturbed southern area, it is possible that a species-rich natural meadow habitat was lost.	<p><u>Dominant species:</u>  <i>Trollius europaeus</i>, <i>Galium boreale</i>, <i>Stachys officinalis</i>, <i>Filipendula ulmaria</i>, <i>Briza media</i>, <i>Geranium palustre</i>, <i>Bistorta major</i>, <i>Alopecurus pratensis</i>, <i>Rumex acetosa</i>, <i>Lychnis flos-cuculi</i>, <i>Vicia cracca</i>, <i>Helictotrichon pubescens</i>, <i>Ranunculus acris</i>, <i>aegopodium podagraria</i>, <i>poa pratensis</i>, <i>Achillea ptarmica</i>, <i>Trifolium montanum</i>, <i>Centaurea jacea</i>  <i>Salix sp.</i>, <i>Scirpus sylvaticus</i>, <i>Alopecurus pratensis</i>, <i>Cirsium palustre</i>, <i>Thalictrum lucidum</i>, <i>Lychnis flos-cuculi</i>, <i>Anthriscus sylvestris</i>, <i>Juncus effusus</i>, <i>Soalnum dulcamara</i>, <i>Comarum palustre</i>, <i>lysimachia vulgaris</i>.</p> <p><u>Invasive species:</u>  None</p> <p><u>Conservation important species:</u>  None</p>	Degraded	Permanently impacted	<p>A newly constructed access road crosses a natural wetland located within a small gully. On the southern side of the road, approximately 0.26 ha of natural vegetation has been destroyed. A pond was excavated, likely causing drainage of the area up to the road.</p> <p>On the northern side of the road, soil was either deposited or pushed into the wetland during road embankment construction, resulting in patches of exposed bare soil that are now undergoing spontaneous renaturalization. A culvert connects the wetland on both sides of the road.</p>	Compensation required. It is recommended to restore 0.26 hectares of natural meadow, preferably on moist soils.	


Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
14	Natural wetland	No	Natural wetland subject to special land-use restrictions.  External pressures include adjacent arable fields and access road.	<u>Dominant species:</u> <i>Salix sp.</i> , <i>Iris pseudacorus</i> , <i>Carex acuta</i> , <i>Calamagrostis canescens</i> , <i>Equisetum fluviatile</i> , <i>Typha angustifolia</i> , <i>Solanum dulcamara</i>  <u>Invasive species:</u> None  <u>Conservation important species:</u> None	Semi-intact	Permanently impacted	<p>An area of approximately 0.07 hectares of wetland may have been destroyed due to agricultural activities.</p> <p>The access road was constructed along the route of a former field road with an existing water culvert. Currently, clovers have been sown in the affected area.</p> <p>Impacts to the wetland are pre-existing and unrelated to the Project.</p>	None.	
15	Natural wetland	No	Natural wetland subject to existing land use pressures and impacts due to agriculture.	<u>Dominant species:</u> <i>Cereal</i> , <i>Trifolium hybridum</i> , <i>Festuca pratensis</i> , <i>Alopecurus pratensis</i> , <i>Potentilla anserina</i> , <i>Poa annua</i> .  <u>Invasive species:</u> None  <u>Ruderal species:</u> <i>Cirsium arvense</i> .  <u>Conservation important species:</u> None	Semi-intact	Permanently impacted	<p>Approximately 0.36 hectares of natural wetland have been destroyed by shrub removal and soil infilling in the lowest-lying areas, converting the land to arable use.</p> <p>The access road has not been constructed, suggesting that wetland destruction occurred due to land reclamation for agricultural purposes.</p> <p>Impacts to the wetland are pre-existing and unrelated to the Project.</p>	None.	
16	Wetland	No	Natural low-lying wetland with typical vegetation,	<u>Dominant species:</u> <i>Menyanthes trifoliata</i> , <i>Lysimachia thysiflora</i> ,	Pristine	-	The cable installation has not affected the natural habitat.	None.	



Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			optimal hydrological regime.	<p><i>Potentilla palustris</i>, <i>Iris pseudacorus</i>, <i>Typha angustifolia</i>, <i>Salix cinerea</i>, <i>Equisetum palustre</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>					
17	Drainage channels with grassy vegetation in wet areas	No	<p>Drainage canals, part of the wet scrub habitat transformed into agricultural land around 2021-2023.</p> <p>Habitat changes have been triggered by melioration and agriculture.</p> <p>Restoration of the habitat is not possible due to intensive agriculture</p>	<p><u>Dominant species:</u> <i>Cirsium palustre</i>, <i>Alopecurus pratensis</i>, <i>Phalaris arundinacea</i>, <i>Urtica dioica</i>, <i>equisetum fluviatile</i>, <i>glyceria fluitans</i></p> <p><u>Invasive species:</u> <i>Elodea canadensis</i></p> <p><u>Conservation important species:</u> None</p>	Artificial	Lost.	The cable installation has not affected the natural habitat.	None	
18	Shrub wetland	No	Open wetlands with characteristic plants have been restored in the road ditches. The hydrological regime is satisfactory, better than at point 19. Points 17, 18 and 19 are linked. Points 18 and 19 assess the same shared habitat.	<p><u>Dominant species:</u> <i>Salix sp.</i>, <i>Typha angustifolia</i>, <i>Iris pseudacorus</i>, <i>Typhoides arundinacea</i>, <i>Lysimachia vulgaris</i>, <i>Bistorta officinalis</i>, <i>Filipendula ulmaria</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Good	Recovering	The road is built on the edge of a wetland. The northern part of the habitat (at point 18) is preserved, with no signs of desiccation so far.	Allow for natural recovery (with monitoring)	
19	Shrub wetland	No	Most of the habitat is mechanically intact but degraded due to changes in the hydrological regime.	<p><u>Dominant species:</u> <i>Salix sp.</i>, <i>Typha angustifolia</i>, <i>Iris pseudacorus</i>, <i>Menyanthes trifoliata</i></p>	Degraded / Artificial	Recovering	The road is built on the edge of a wetland. Major disturbance to the habitat is observed	Assisted revegetation necessary.	


Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			<p>Melioration works have been done in the area, and a drainage canal near the turbine collects water, but there is no outflow. Drainage channels have also been formed in agricultural areas, the culvert under the road is high and water is stored near the road.</p> <p>The assessment has been carried out over a wider area, as in this case it is land drainage activities that have the greatest negative impact on the natural recovery of the habitat.</p>	<p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>			<p>in the area around the wind turbine, where the relief has been altered, spruce trees have been planted and scrub has been cleared.</p> <p>About 40% of the wetland has been drained. We cannot assess whether the construction of the turbines was related to land drainage activities</p>	Remove planted spruce trees, allowing the habitat to transform naturally. In order to preserve the main habitat of the wetland, it is necessary to restore the hydrological regime, to restore the culvert and to assess the parameters of the culvert built under the road.	
20	Drainage channels with grassy vegetation in wet areas	No	<p>Drainage canals and the conversion of wet scrub habitat into agricultural land were observed around 2021–2023.</p> <p>Habitat changes have been triggered by melioration and agriculture. Restoration of the habitat is not possible due to intensive agriculture.</p>	<p><u>Dominant species:</u> <i>Alnus incana</i>, <i>Salix sp.</i>, <i>Juncus effusus</i>, <i>Epilobium hirsutum</i>, <i>Galium palustre</i>, <i>Poa pratensis</i>, <i>Lychnis flos-cuculi</i>, <i>Trifolium hybridum</i>, <i>Ranunculus repens</i>, <i>Alopecurus geniculatus</i>, <i>Eleocharis sp.</i></p> <p><u>Ruderal species:</u> <i>Cirsium arvense</i>, <i>Urtica dioica</i>, <i>Artemisia vulgaris</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Artificial	Lost	The cable installation has not affected the natural habitat.	None.	


Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
21	Forest	No	<p>The new road crosses an area covered by bushes and native trees. A birch coppice on the eastern side of the road is mapped as abandoned agricultural land.</p> <p>A water culvert has been built where the road crosses a drainage canal.</p>	<p><u>Dominant species:</u> <i>Betula pendula</i>, <i>salix fragilis</i>, <i>alnus incana</i>, <i>single Quercus robur</i>, <i>ulmus glabra</i></p> <p><u>Ruderal species:</u> <i>Cirsium arvense</i>, <i>Artemisia vulgaris</i> observed only on the roadbed.</p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Degraded	Permanently impacted	<p>The road and its zone of influence do not extend into the deciduous forest on the western side, as assessed by forest management data (State Forest Cadastre).</p>	<p>No specific requirements: allow for natural recovery.</p> <p>Native grasslands will naturally develop around the road crossing if it is mown regularly.</p>	
22	Forest	Yes: 9020	<p>Deciduous forest with features of the habitat of European Community importance Broadleaved and mixed forests 9020. However, the identification of the habitat lacks representative species, and the trees of broadleaved species are too young. Could be considered as a potential 9020 habitat. The habitat is undisturbed.</p>	<p><u>Dominant species:</u> <i>Quercus robur</i>, <i>Acer platanoides</i>, <i>Alnus incana</i>, <i>Corylus avellana</i>, <i>Stachys sylvatica</i>, <i>Asarum europaeum</i>, <i>Oxalis acetosella</i>, <i>Ribes sp.</i>, <i>Athyrium filix-femina</i>, <i>Paris quadrifolia</i>, <i>Silene dioica</i>, <i>Milium effusum</i>, <i>Anemone nemorosa</i>, <i>Ranunculus lanuginosus</i></p> <p><u>Invasive species:</u> None</p> <p><u>Conservation important species:</u> None</p>	Pristine	-	<p>Visually, there are no signs of habitat disturbance.</p>	None.	
23	Shrubland	No	<p>The newly constructed road crosses a wet scrubland that has formed naturally in a ravine.</p> <p>An area of approximately 0,06 ha is open wet</p>	<p><u>Dominant species:</u> <i>Tripleurospermum perforatum</i>, <i>Persicaria lapathifolia</i>, <i>Alopecurus pratensis</i>, <i>Deschampsia cespitosa</i>, <i>Lysimachia vulgaris</i>. <i>Salix cinerea</i>,</p>	Degraded	Permanently impacted	<p>On the western side of the road, the shrubs and the grass cover underneath have been removed and part of the area has been sown with agricultural crops.</p>	Allow for natural recovery (with monitoring).	

Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			grassland with typical natural vegetation. On the eastern side of the road the scrub and herbaceous vegetation are intact.	<i>Phragmites australis</i> , <i>Phalaris arundinacea</i>  <u>Invasive species:</u> None  <u>Conservation important species:</u> None					
24	Shrubland	No	<p>A small aquatic feature has developed within a local topographic depression. This water body is fringed by tall, hygrophilous vegetation characteristic of riparian and wetland margins. Additionally, plant species typical of mesotrophic to wet meadow habitats are interspersed throughout the area.</p> <p>The surrounding landscape is dominated by intensively managed arable land sown with conventional agricultural crops. A habitat previously mapped and inventoried under Annex I of the EU Habitats Directive as 6270 – <i>Fennoscandian lowland species-rich dry to mesic grasslands</i> has been destroyed through land conversion to agriculture. No remnants of habitat type 6270* were identified within the current wetland boundaries, and it has not been re-inventoried in this location.</p>	<u>Dominant species:</u> <i>Salix sp.</i> , <i>Typha angustifolia</i> , <i>Glyceria fluitans</i> , <i>Lychnis flos-cuculi</i> , <i>Epilobium hirsutum</i> , <i>Symphytum officinale</i> , <i>Sparganium emersum</i> , <i>Alisma plantago-aquatica</i> , <i>Caltha palustris</i> , <i>carex vesicaria</i> , <i>galium palustre</i> .  <u>Ruderal species:</u> <i>Cirsium arvense</i> , <i>Anthriscus sylvestris</i> , <i>Arctium tomentosum</i> , <i>Artemisia vulgaris</i>  <u>Invasive species:</u> None  <u>Conservation important species:</u> None	Good	Recovering	Visually, there are no signs of habitat disturbance due to the Project.	None.	

Site #	Habitat Type	Annex I Type?	Description	Flora	Habitat Condition	Habitat Status	Residual impact due to Project?	Recommendations	Photographs
			The present wetland shows no obvious signs of anthropogenic disturbance or degradation. However, interpretation of orthophotographic imagery reveals that woody vegetation (primarily shrubs) had been cleared in the past. These shrubs are now undergoing natural regeneration.						
25	Natural shrubland	No	<p>Wet scrub has been cleared in most of the habitat (it is not possible to determine whether this is the result of construction or agricultural activities). The remaining, unaffected area is dominated by <i>Salix cinerea</i> scrub with tall, wetland grasses. 0.85 ha are affected, of which 0.21 ha are affected by the power plant and access road, where habitat recovery is not possible.</p> <p>An open wetland with its characteristic vegetation is forming on 0,61 ha where shrubs have been cleared. Part of the affected area is covered with ruderal vegetation, probably as a result of the change in the hydrological regime due to the elevation of the base of the turbine and the site. The area is expected to eventually become established with plants tolerant of drier sites, i.e. part of the habitat will be transformed by</p>	<p><u>Dominant species:</u>  <i>Salix sp.</i>, <i>Salix caprea</i>,  <i>Phragmites australis</i>,  <i>Deschampsia cespitosa</i>,  <i>Scirpus sylvaticus</i>, <i>Geum rivale</i>, <i>Ranunculus repens</i>,  <i>Cirsium palustre</i>, <i>Galium palustre</i>, <i>Juncus effusus</i>,  <i>Carex acutiformis</i>, <i>Carex hirta</i>, <i>Carex pseudocyperus</i>,  <i>Carex flava</i>, <i>Epilobium hirsutum</i>,  <i>Lysimachia vulgaris</i>, <i>Bistorta major</i>, <i>Filipendula ulmaria</i>,  <i>Lychnis flos-cuculi</i>, <i>Silene dioica</i>, <i>Solanum dulcamara</i>,  <i>Aegopodium podagraria</i>.</p> <p><u>Invasive species:</u> None</p> <p><u>Ruderal species:</u> <i>Cirsium arvense</i></p> <p><u>Conservation important species:</u> None</p>	Degraded	Recovering	Not possible to determine whether clearance of habitat is the result of construction or agricultural activities.	Allow for natural recovery (with monitoring)	

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			spontaneous renaturalisation.  Around 0.21 ha of wetland was lost.						
26	Planted spruce stand	No	The wind farm is situated within a cultivated field, with access provided via a local road connecting the villages of Gailaičiai and Akmeniai. The access road follows the route of a former road, and its infrastructure remains unchanged. The forested area on the right-hand side is undisturbed. Along the road edge, there is a planted spruce stand that transitions into wet scrub further in.	<u>Dominant species:</u> <i>Festuca Pratensis</i> , <i>Lolium perrene</i> , <i>Elytrigia repens</i> , <i>Centaurea cyanus</i> , <i>Leucanthemum vulgare</i> , <i>Capsella bursa-pastoris</i> , <i>Tripleurospermum perforatum</i>  <u>Invasive species:</u> None  <u>Conservation important species:</u> <i>Listera ovata</i> or <i>Platanthera bifolia</i>	Pristine	-	These habitats remain intact and undisturbed.	Allow for natural recovery (with monitoring)	
27	Planted forest	No	<p>The access road follows a pre-existing local road. On the eastern side of the road, approximately 9-year-old plantations of spruce and black alder juveniles have been established. A small copse with mature black alder trees remains undisturbed.</p> <p>Analysis of orthophotographic maps from the 2021–2023 period shows that on the western side of the road there was a degraded, shrub-encroached meadow. Currently, the shrubs have been removed, and the meadow has been converted to agricultural land. Land use change has occurred over</p>	<u>Dominant species:</u> <i>Alnus glutinosa</i> , <i>Picea abies</i> . In the black alder juvenile stand, <i>Urtica dioica</i> , <i>Cirsium oleraceum</i> , <i>Geum rivale</i> , <i>Scrophularia nodosa</i> , <i>Filipendula ulmaria</i> , <i>Ribes nigrum</i> , <i>galium palustre</i> .  <u>Invasive species:</u> None  <u>Ruderal species:</u> <i>Urtica dioica</i>  <u>Conservation important species:</u> None	Modified	-	It is not possible to determine whether this change is a consequence of wind energy facility construction or agricultural activities.	It is recommended to restore 0.46 hectares of natural meadow.	

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			an area of approximately 0.46 hectares.						
28	A natural moist meadow overgrown with shrubs.	No	<p>A moist meadow has formed in the lowest part of the terrain. The meadow is unused and thus overgrown with shrubs, currently covering approximately 70% of the area. Between the shrubs, species-rich meadow fragments persist. Drainage ditches have been directed into this terrain depression.</p> <p>The habitat contains species characteristic of habitat type 6410 – Molinia meadows; however, their abundance is insufficient to classify the area as this EU Habitats Directive habitat. Additionally, the site exhibits excessive shrub encroachment.</p> <p>Construction of the access road has not yet begun. Analysis of database information indicates that the planned access road is adjacent to a field designated as natural meadows and pastures under special land-use conditions. However, this field is currently ploughed and sown with cereals, resulting in the destruction of the natural meadow.</p>	<p><u>Dominant species:</u>  <i>Salix caprea</i>, <i>Salix sp.</i>,  <i>Geranium pratense</i>, <i>Scirpus sylvaticus</i>, <i>Bistorta officinalis</i>, <i>Galium boreale</i>,  <i>Alopecurus pratensis</i>, <i>Carex cespitosa</i>, <i>trifolium medium</i>,  <i>Knautia arvensis</i>, <i>filipendula ulmaria</i>, <i>alchemilla sp.</i>,  <i>Hypericum maculatum</i>,  <i>Deschampsia caespitosa</i>,  <i>Potentilla erecta</i>, <i>Carex nigra</i>, <i>Carex acuta</i>,  <i>Aegopodium podagraria</i>,  <i>Achillea ptarmica</i>,  <i>Heracleum sibiricum</i>, <i>Cirsium palustre</i>, <i>Thalictrum lucidum</i>, <i>Briza media</i>,  <i>Lychnis flos-cuculi</i>, <i>Lathyrus pratensi</i></p> <p><u>Invasive species:</u> None</p> <p><u>Ruderal species:</u>  <i>Cirsium arvense</i></p> <p><u>Conservation important species:</u>  None</p>	Pristine	-	No access road to the wind energy facility has been constructed, so no damage is observed.	None.	

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29	Wetland	No	A puddle formed in a depression with waterlogged banks giving way to wet scrubland.	<u>Dominant species:</u> <i>Carex acuta</i> , <i>Carex nigra</i> , <i>Utricularia sp.</i> , <i>Phalaris arundinacea</i> , <i>Calamagrostis canescens</i> , <i>Salix cinerea</i> , <i>Betula pendula</i>  <u>Invasive species:</u> None  <u>Conservation important species:</u> <i>Krūmynuose rasta</i> <i>Platantera chlorantha</i>	Pristine	-	No impacts due to the Project.	None.	



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