

Interreg IIB project „Baltic Master: Maritime Safety Transport and Environment in the South Baltic Sea Region“

WP3 Case Study, Socio-Economic Impact Assessment

Curonian Spit – World Heritage site. The assessment of ecological and socioeconomic threats of oil transport routes and mining in Lithuanian part of the Southeast Baltic

Klaipėda County (Lithuania) extends over a wide and long strip of one hundred kilometres in the Western part of Lithuania from the border with Latvia to the border with Russia. Klaipėda County is the only county among ten counties in Lithuania to border on the Baltic Sea and the Curonian Lagoon. Together with the Nemunas River delta, the Curonian Spit and Palanga represent the most important recreational area in Lithuania.

The Curonian Spit is a sandy peninsula extending in a long narrow strip from the Semba peninsula in the Kaliningrad Region to Klaipėda. The total length of the peninsula is 97 km; the widest place near Bulvikis Horn is just 4 km. The eastern shores of the Curonian Strip are washed by the Curonian Lagoon, while the western shores by the waters of the Baltic Sea.

Of the 65 species of mammals native to Lithuania, 37 inhabit the Curonian Spit, four of which are included in the Red Book of Lithuania, namely the common pipistrelle, the serotine bat, the otter and the grey seal. Insect species can be found here that are not common anywhere else in Lithuania. One of the best-known moths of the peninsula is *Thaumetopoea pinivora*, included in the Red Book of Lithuania.

About 15 million birds cross the Curonian Spit during the spring and autumn migration periods; some of them overwinter here. Over 100 bird species hatch on the peninsula. The largest colony of herons and cormorants in Lithuania, counting about 1500 nests, is located north of Juodkrantė.

About 70 fish species inhabit the Baltic Sea waters near the shores of the strip. The most common are the Baltic herring, cod, plaice, and halibut. Catches in the Curonian Lagoon include perch, bream, eel, pikeperch and other fish.

On the Curonian Spit there several settlements integrated into the municipality of Nida, including Nida, Preila, Pervalka, Juodkrantė, and Alksnynė. Smiltynė is part of Klaipėda City. In all the settlements, the historic network of streets and housing is listed. Around 2800 people live there today (<http://www.neringa.lt/>).

The Curonian Spit is included in the UNESCO World Heritage list of cultural and natural sites. Hundreds of thousands of local and foreign tourist come here for rest and recreation every year. Tourists here will see high, windblown sand dunes or dunes overgrown with pinewoods, while if you choose the sightseeing path in the Naglių natural reserve you can observe the magnificent sight of the Curonian Spit, the lagoon and the sea at all at once. The Curonian Spit boasts rich cultural heritage. The four settlements located here, Nida, Preila,



Pervalka, Juodkrantė, are former fishing villages. Today the settlements have been joined under Neringa Municipality and have been given the status of resort. The territory of the Curonian Spit is listed; the National Park of the Curonian Spit has been established here.

A wonderful place to visit and to live... Though, as it often happens on coastline territories, various conflicting needs arise and objectives towards a better balance and safety. Klaipeda County Administration, as the regional authority, aims to preserve the unique elements of the marine landscape and therefore joined group of colleagues with similar interests in the Baltic Master project. Within the project, Klaipeda County is working on developing the case study 'Curonian Spit – World Heritage site. An assessment of the ecological and socioeconomic threats of oil transport routes and mining in the Lithuanian part of the Southeast Baltic'

The history of the increased potential risk for the natural and social-economic environment of the Curonian spit goes back to year 2004 when oil extraction was started from the Russian oil platform D-6 in the SE of the Baltic Sea. The platform is situated just 22.5 km from the coast at a depth of about 30 meters. Crude oil saturated with gas and at a later stage with production waters (multi-phase flow-product) is transported to the shore via 47 km of underwater pipeline at a maximum rate of 81.6 m³/h. The extractable oil reserve – 9.1 million tons, period of drilling and extraction – about 30 years. The platform is assisted by a standby emergency support vessel, which is summoned when something has gone wrong, e.g. when a search and rescue operation is required. During normal operations, the platform supply vessels keep the platforms provisioned and supplied.

The nature of the platform operation – extraction of oil under pressure involves risks and accidents are not infrequent, mostly related with oil spills – operational spills, discharges, failure of the pipeline caused by an anchor being dragged over the pipe, corrosion or breakage in connections (welds, flanges), oil well blowouts. The estimated amount that could be discharged from D6 – in the worst case all the oil in the pipeline between valves onshore and on platform (2331 m³) would be discharged. This assumption is based on an aeration/saturation pressure of gas in oil of 25 atmospheres, and a reduction in pressure to three atmospheres due to a breakage, and an assumption that the expansion of the gas in the pipeline would press out all the oil.

An evaluation of socioeconomic balance and sensitivity of the coastal area and marine environment adjacent to the oil platform location revealed the need for a detailed study and analysis of the situation as well as an improvement in preventive measures and preparedness to eliminate any consequences of the potential damage to the environment from natural-social-economic standpoints. The case study 'Curonian Spit – World Heritage site. An assessment of the ecological and socioeconomic threats of oil transport routes and mining in the Lithuanian part of the Southeast Baltic' is being carried out in cooperation with scientists from the Coastal Research and Planning Institute of Klaipeda University (<http://www.corpi.ku.lt/>), and aims to resolve the following issues:

- The assessment of the most sensitive parts of Curonian Spit coastal area;
- Determination of oil spill migration routes and evaluation of speed and degree;
- Assessment of threats and prevention of main summer resorts' beaches;
- Evaluation of the changes of living quality and socioeconomic aspects of the local community living in the coastal zone;
- Evaluation of economical subsequence/ consequences of potential pollution to the resorts;

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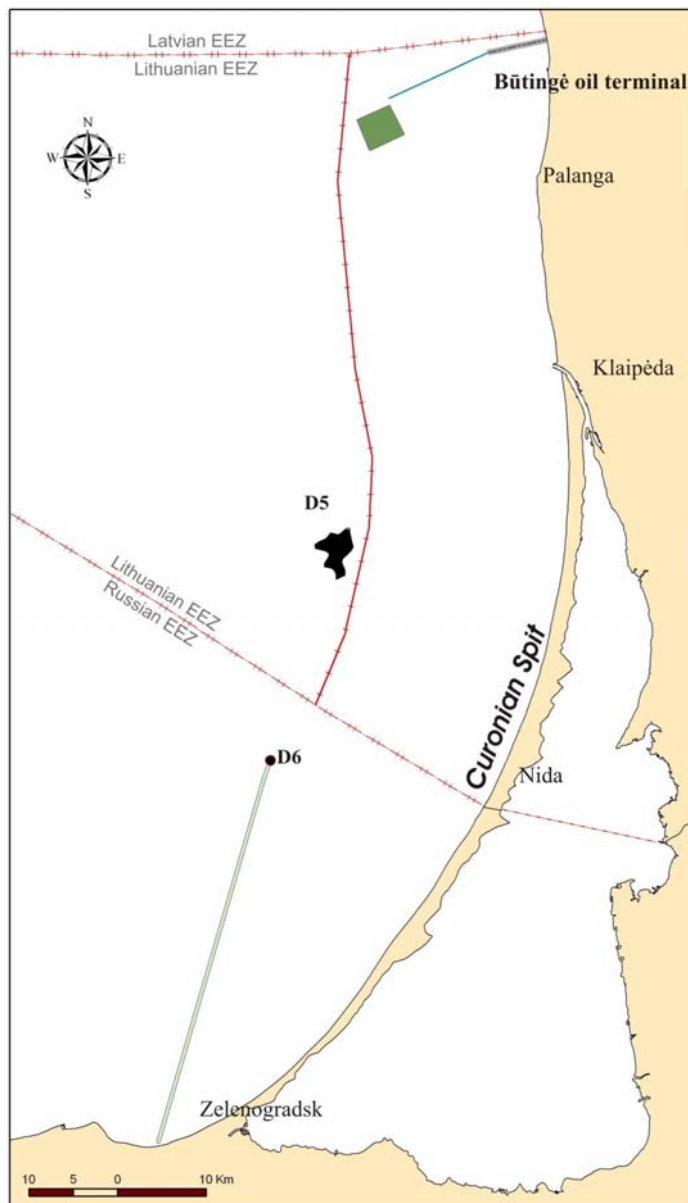


- Development of the strategy of oil spill prevention,
- To optimize the prediction and elimination of oil spill consequences as well as loss compensation mechanism.

The results of the study will be ready at the end of 2007.

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