

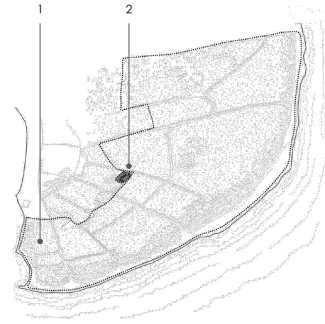
# research and educational center design

dedicated to the protection of the natural landscape in Hel

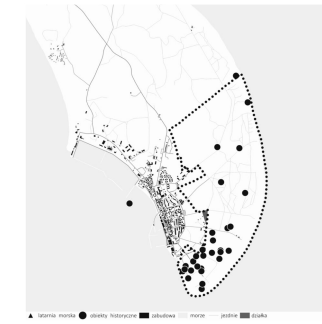
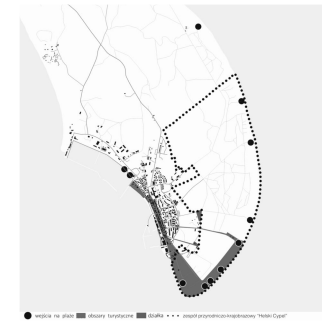
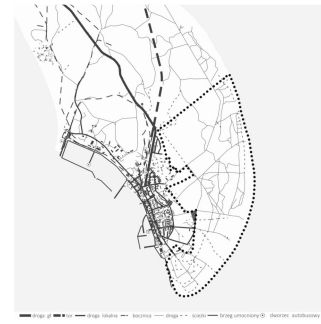
## introduction



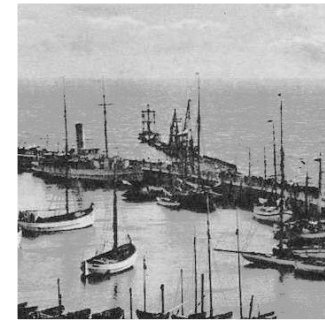
The aim of addressing the presented topic is to draw attention to the issue of excessive exploitation of valuable natural areas on the Hel Peninsula and to propose solutions intended to prevent this process. The scope of the study consists of two scales – general (1) and detailed (2). The area whose protection constitutes the main focus of the project lies within the boundaries of the "Hel Peninsula" Nature and Landscape Complex. The project proposes the development of several points across the site, which together would form a trail regulating tourist movement. The encountered spaces are intended to encourage visitors to reflect and appreciate the natural qualities of the coastal landscape. The concept also includes the design of a research and educational center dedicated to conducting landscape studies of the area covered by the project and monitoring the changes introduced within it. The center would be located in the immediate vicinity of the "Hel Peninsula" area, while remaining outside its



## infrastructure analyses



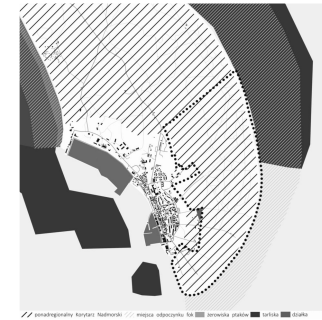
## historical background



The first mentions of Hel date back to 1198, when it was known as the Kashubian fishing village of Gellen. Over the centuries, Hel functioned within various cultural spheres. It successively belonged to Prussia, the Teutonic Order, once again the Prussian Confederation, then the Kingdom of Poland, and later returned to the Kingdom of Prussia. In 1807, it became part of the Free City of Danzig, which at that time was under French control. Later, as a consequence of the Prussian partition, Hel once again came under the rule of the Kingdom of Prussia. This period marked dynamic development. From 1871, when Prussia became part of the German Empire, the Hel Peninsula remained within the German sphere of influence. During this time, intensive colonization of the area took place, mainly by settlers of German origin. A particularly significant event was the construction of the fishing harbor in 1893, which saved the town from collapse caused by natural disasters and prolonged periods of hardship.

In 1896, Hel gained recognition as a seaside resort among the inhabitants of Gdańsk and Sopot and was granted the status of a Coastal Health Resort. In 1918, as a result of the provisions of the Treaty of Versailles, the peninsula was once again incorporated into Poland. Three years later, the construction of a railway connection to Gdańsk began, significantly increasing its popularity as a seaside destination. Due to Hel's strategic location, the first plans for the militarization of the area were also initiated. The naval port was established first in 1931, followed in 1936 by the creation of the Fortified Region, which restricted civilian access to the area. The strategic concept was developed by Heliocor Laskowski, a naval artillery engineer. It envisioned the creation of a self-sufficient defensive naval base serving as support for the fleet. Restrictions were only eased in 1989, while their complete abolition did not take place until the 1990s.

## natural environment analyses



## cultural background

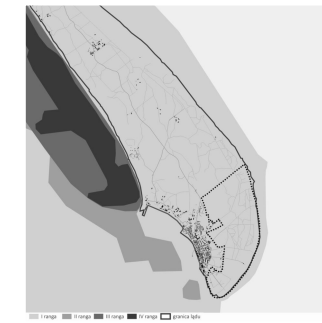
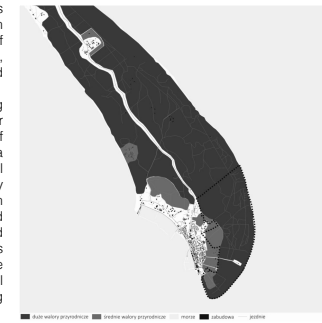
"And what kind of land is this, what kind of people are these Fishermen? Look at Kashubia on the map; up north, where the land reaches the Baltic Sea, it stretches out like a hand extending from an arm, six miles long, laid upon the sea, as if claiming this part in possession for Kashubia, saying: 'This sea, too, belongs to Kashubia. This sandy hand is the Hel Peninsula, these are the Fishermen (...)'"

The purpose of establishing them was to provide mutual support both in the hardships of work and in everyday life beyond it. Members of these communities were bound by principles of equality and solidarity, which had to be observed not only by the fishermen themselves, but also by their families. Within the activities of the *maszopierie*, particular importance was attached to caring for the elderly, the sick, and widows. Part of the collective income was allocated to community-related purposes. Characteristic structures of the Hel Peninsula included *chêcze* (fishermen's houses), built from timber logs, insulated with seaweed, and roofed with straw or reeds. Houses were also constructed using timber-frame structures, often made from fragments of sunken boats, filled with a mixture of clay and chopped straw. Another common feature of the region were *retensbudy* — sheds created by joining together two halves of worn-out boats. At times, they also served as rescue shelters located along the beaches.

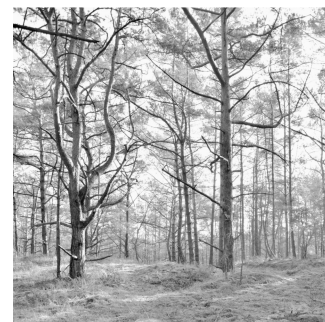
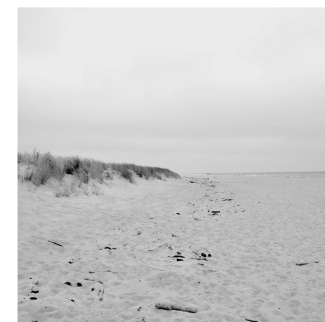


## valorisation – conclusions

Hel is a well-connected tourist center that enjoys considerable popularity during the summer season. In addition, it is an area with a high concentration of post-war historical sites and landmarks. Above all, however, it is distinguished by its natural and environmental values. The Hel Spit serves as a breeding ground, resting area for seals, feeding site, and migration corridor for birds — a refuge for numerous representatives of various species. It also presents a model example of a dune coastline and its naturally layered ecological zones (beach – initial dune stages – white dune – gray dune – forested dune). The flora of this area is rich and highly diverse in ecological terms. Many rare and nationally valuable plant communities can be found here. An important element of the peninsula's landscape is its century-old pine forest. This tree stand performs significant protective and ecological functions, stabilizing the dunes and creating characteristic coastal forest habitats.



## views



## places of cultural and research significance



I – Seal Sanctuary, the Professor Krzysztof Skóra Marine Station, and the Dune Park;  
II – the Institute of Meteorology and Water Management, together with the Geophysical Observatory of the Institute of Geophysics of the Polish Academy of Sciences;  
III – Lighthouse;  
IV – Viewing Platform

The proposed facility would thematically correspond with the existing educational and scientific buildings, while also serving as a programmatic extension of them. The scientific and research activity of the field station of the Institute of Oceanography at the University of Gdańsk (Marine Station) is focused primarily on research and education related to the natural environment and protection of the Baltic Sea. In addition, the institution carries out projects dedicated to the active protection of the marine environment and initiates numerous initiatives.

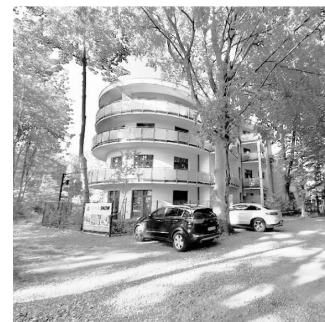
The Marine Station's principal research areas include the biology and ecology of marine mammals and fish of the Baltic Sea, as well as the Baltic coastal zone. Its educational activities focus on monitoring protected species and their habitats. Part of the Station is the nearby Seal Sanctuary, dedicated to the protection and rehabilitation of Baltic seals. The Dune Park and the viewing platform are the result of the first initiatives undertaken to revitalize and protect the Hel dunes in areas experiencing the highest concentration of tourist traffic. The Institute of Meteorology and the Geophysical Observatory are respectively responsible for conducting systematic measurements and observations, carrying out scientific research, analyzing changes in the Earth's magnetic field, and monitoring atmospheric phenomena together with their impact on the environment. The Lighthouse, in turn, is both a historical and tourist landmark.

## threats



The Hel Peninsula is a popular holiday destination and therefore an area of high tourist activity. Although tourism is a source of livelihood for most residents of Hel and the surrounding towns, uncontrolled tourist traffic can have a potentially destructive impact on the natural resources of this area. This is primarily due to the failure to respect the prohibitions and restrictions in force within designated protected zones (the Spit itself lies within three forms of landscape protection). A global issue, of which Hel is no exception, is the pollution of natural areas with municipal waste, especially during the holiday season.

Moreover, local authorities have long been trying to combat increased car traffic throughout the entire Peninsula. In the past, proposals have already been made to limit it, for example by increasing the share of water transport in connections between the Tricity (Gdańsk, Sopot and Gdynia) area and Hel, as well as the rest of the Peninsula.



A major burden on the protection of valuable natural areas is the chaotic and uncontrolled development of infrastructure (particularly the hotel sector), which in many cases proves to be outright destructive. Moreover, newly constructed architecture is often large-scale, intrusive, and visually dominant. It lacks coherence or even references—formal, material, or contextual—to the historical, traditional building patterns characteristic of the region.

Another problematic aspect is the inflow of pollutants from land, especially during the summer season, when municipal infrastructure becomes overloaded. This is further intensified by contaminants originating from surface runoff from roads and urbanized areas. Coastal reinforcement measures also prove problematic in certain respects. They disrupt natural ecological processes occurring in the shoreline zone, leading to a reduction in biodiversity and the disappearance of natural habitats.



The inflow of pollutants from land contributes to the intensification of certain natural threats; among other effects, it leads to the mass development of filamentous brown algae, which negatively affect other plant species. Consequences of this phenomenon may include oxygen depletion in the water, deterioration of water quality, and a decline in the aesthetic value of the landscape.

Another negative aspect is unregulated or illegal fishing. Excessive catches during inappropriate periods may lead to disruption of the ichthyofauna structure and a decrease in biodiversity.

In addition, invasive species not suited to dune habitats often develop on the dunes, resulting in their overgrowth. This negatively affects biodiversity and introduces changes in ecosystem structure. Alien species frequently displace dune vegetation (e.g., the strictly protected sea holly, *Eryngium maritimum*), which requires conservation.

