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The Vistula riverside – the unfulfilled potential of Toruń’s blue space

Introduction

The Vistula (Polish: *Wisła*) is the longest river in Poland. It runs for 1047 km from its source in the Tatra Mountains to the Baltic Sea, crossing many Polish cities on its path. One of these cities is Toruń, established in its riverside location in the 13th century. Toruń, with ca. 180,000 residents, is the 16th most populous city in Poland (*Mieszkańcy - dane liczbowe* | www.torun.pl, no date). Despite the city’s status as an important cultural and educational centre, over the last twenty years it has been noted that Toruń’s development in the recent decades has omitted the part of its landscape that had previously been key to its success – the riverside. This article aims to present the Vistula riverside as a space with potential to create a new, accessible green space and open the public’s access to the river, opening them with a type of space lacking in Toruń, namely blue space.¹

I will first describe the nature of the challenge, its significance, impacts and likely causes. Then I will present a review of international examples of how the riverside was developed to promote well-being and improve access to green and blue space, while taking into account the local environmental and cultural context. The final part of the article proposes the development of a riverside trail to improve access to the river, encourage active recreation, and increase the awareness and knowledge of the Vistula’s significance.

This project responds to four strategic goals outlined in the United Nations Sustainable Development Agenda: creating sustainable cities and communities (Goal 11), supporting good health and well-being (Goal 3), protecting life on land (Goal 15), and providing opportunities for decent work and economic growth (Goal 8) (United Nations 2023). The specific ways in which the project addresses the goals and concrete target will be discussed in the Recommendations section.

The challenge

The Vistula River is an important part of Toruń’s landscape. The river flows through the city, dividing it asymmetrically into two parts connected by two bridges for pedestrians and vehicles and one railway bridge. The length of the northern shore within Toruń’s administrative area is 19 km, the southern shore – 13 km. The river is approximately 300-500 m wide, and it has dense vegetation cover along the majority of its riverside.

In the past, the Vistula played an important role in regional transport, industry and trade. In the 19th century this economic aspect was still emphasised and the riverside was subject to intensive changes carried out by the Prussian authorities. These changes included evening out the river depth and width and constructing new ports (Szymkiewicz 2017). However, from the mid-20th century onwards, the Vistula has largely been relegated to its aesthetic role or as a space for boat cruises for tourists (Miejska Pracownia Urbanistyczna 2017). Most of the riverside is difficult to access, generally left undeveloped and overgrown with vegetation. While this has a positive effect of providing wildlife

¹ *Green space* is understood here as open, public space characterised by a high percentage of vegetation and permeable surfaces (Swanwick et al. 2003). *Blue space* is defined as natural and manmade surface water, regardless of form – that includes rivers, lakes, canals, the ocean, and so on (Smith et al. 2021).

habitat and allowing for natural fluvial processes to happen, the Vistula's lack of visibility in the public sphere contributes to its overall neglect and lack of engagement over potential threats to the river.

The riverside areas are a bank of much needed green and blue space that are not easily accessible to the public. They lack infrastructure such as benches or litter bins, and without maintenance, they are often overgrown and littered. Paths in the area, if present, may be sandy or muddy due to fluvial deposits, which makes them difficult to access. The presence of discarded bottles and cans suggests that the riverside, in places, is often used as an alcohol drinking spot. The lack of designated paths, overgrown vegetation and litter can make the space feel unsafe to some visitors, and in fact it presents opportunities for petty crime due to the lack of supervision. The riverside still attracts visitors, especially anglers and wildlife enthusiasts. Still, many more people could benefit from improving the access to the green and blue space along the Vistula River.

The unfulfilled potential of the Vistula riverside in Toruń has previously been noticed and addressed by city-commissioned strategic documents as well as non-governmental organisations (NGOs). For instance, a 2007 analytical report prepared within the *InWater* regional development programme suggested utilising the Vistula for recreation and tourism through focusing on existing points along the riverside, such as Port Drzewny, Port Zimowy and Bulwar Filadelfijski (Miejska Pracownia Urbanistyczna 2007). A later, 2012 landscape management plan commissioned by the city planning office proposed the creation of a river park and a trail for walking, biking and horse riding, preserving the open landscape and existing viewpoints along the shore (Miejska Pracownia Urbanistyczna 2012).

The most recent document concerned with the future of the Vistula in Toruń was prepared by Pracownia Zrównoważonego Rozwoju (PZR) as part of the *Wisła Wciąga* project realised in the years 2021-2023 (Fundacja Wolna Wisła, no date). The document reports on the state of activities on the Vistula in the kujavian-pomeranian voivodeship and the cooperation of stakeholders in that field, such as local authorities, small business owners, environmental scientists, historians, farmers, and NGOs. PZR's report identified several challenges faced by the Vistula community, among them: the lack of sustainable water management in the Vistula basin; the local community's low awareness and knowledge of the Vistula's history; low accessibility of the riverside in terms of infrastructure (such as walking trails, sanitary facilities, spaces for recreation and so on); and the perception of the river as polluted and inappropriate for the development of river tourism (Pracownia Zrównoważonego Rozwoju 2022).

While the issues surrounding the Vistula's unfulfilled potential are complex, addressing the need for better infrastructure along the river may help encourage people to spend time by the riverside and change the perception of the river. Developing access to the riverside could act in a positive feedback loop manner, as increased activity around the water would lead to people demanding a better care of the river's environment. Improved quality of the water and riverside would in turn improve the public perception of the Vistula and create demand for access to the riverside and opportunities for waterside activities.

Impacts and significance of the challenge

The significance of the underuse of the Vistula riverside mostly matters in terms of missed opportunities rather than direct effects. It has already been mentioned that the Vistula does not have a good reputation among Toruń residents, it lacks infrastructure and is largely unknown with regards to its historical and environmental significance. The absence of knowledge of the Vistula, both theoretical and practical, impacts the residents' attitude towards the river. A low awareness

could contribute to inaction facing environmental threats, and it diminishes the potential for proactive attitudes of residents towards the protection of local ecosystems.

Making use of the Vistula riverside would respond to the local and regional strategic programmes . For instance, the 2030 Tourism Development Programme for the City of Toruń advises creating and promoting new ways to spend leisure time outside of the strict city centre, placing emphasis on developing water sports and recreation in riverside areas (Sikora et al. 2021: 58). At the regional level, the kujavian-pomeranian voivodeship's Acceleration Strategy 2030+ designated "A healthy, active and wealthy community" and "Accessible space and clean environment" as two of the main objectives of regional development (Strategia Przyspieszenia 2030+, 2020: 141-142). Therefore, the Vistula is a strategic space for development at both local and regional levels, and so far the objectives associated with the riverside's use in Toruń have not been adequately addressed.

International practice and solutions

The review sought to identify rivers with similar characteristics to the Vistula (temperate climate, location within an urban structure, large distance from the coast, natural, unregulated river channel), where complex projects of increasing access to the riverside have been carried out. The projects reviewed in this section were chosen considering their attention to: preserving the natural environment, connecting the natural with cultural and historical heritage, accessibility to all, range of activities available, and creating opportunities for engagement of the local community.

River's Edge Trail, Montana

River's Edge Trail along the Missouri River is a paved urban trail which links local parks and attractions on both sides of the historic waterfront of the City of Great Falls, Montana (*River's Edge Trail | City of Great Falls Montana*, no date). The trail is available for walking, running, biking, and in-line skating. Beyond the paved section of the trail, there are additional miles of singletrack trails for mountain biking along the canyon walls to the dams of the Missouri River. The trail is stewarded by the River's Edge Trail Foundation, which coordinates and raises funds for the trail's maintenance and improvements and organises community events. The trail is made more attractive by public art displays, sculptures, and interpretive panels with information on the local context. River's Edge Trail runs a volunteering programme, where activities range from trail building and maintenance to assisting on other projects in the park (River's Edge, 2022). An interactive map of the trail is available online (fig. 1), featuring the locations of public toilets, landmarks, scenic viewpoints, boat launches, kiosks, dog bag dispensers, and parking facilities. The map also displays the surface type of each trail segment (*Interactive River's Edge Trail Map | City of Great Falls Montana*, no date).

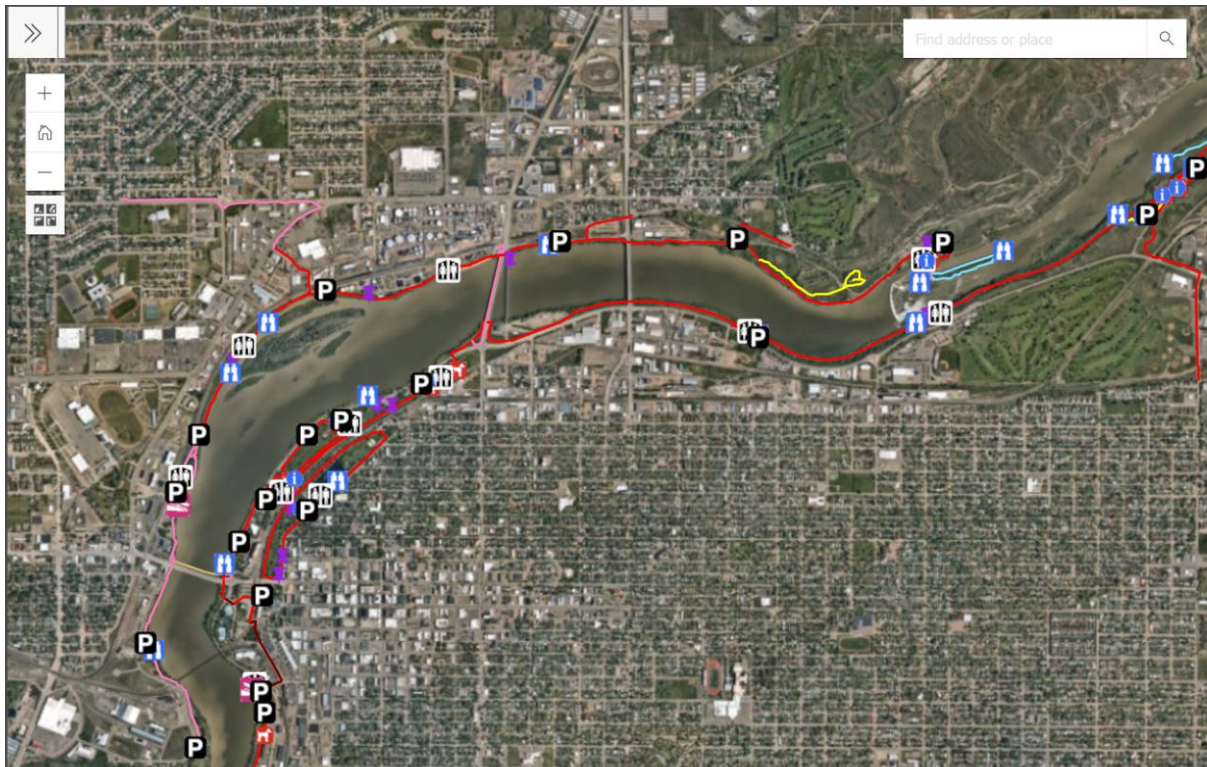


Figure 1. A fragment of the interactive map of the River's Edge Trail, Montana. Source: <https://greatfallsmt.net/recreation/interactive-rivers-edge-trail-map> Accessed 9 October 2023.

Kerrville River Trail, Texas

Kerrville River Trail is a walking and biking trail for public use, running for about 6 miles (9.7 km) along the Guadalupe River in Kerrville, Texas. The river is available for water sports, with boat rentals available during peak seasons at each end of the trail. The trail is to be used during daylight hours only, walking off trail is not permitted, and dogs are to be leashed at all times. These rules aim to protect the trail users and the riverside wildlife. There are several trailheads along the river, marked on the trail map available both online and at selected spots along the route.

The significant feature of the Kerrville River Trail is its affiliation with the Upper Guadalupe River Authority (UGRA). UGRA is a government-owned corporation established in 1939 to protect the health of the Guadalupe River by managing water quality and quantity, promoting river stewardship, and supporting local communities (Upper Guadalupe River Authority 2023). UGRA is a type of organisation that the Vistula lacks – there is no organised body responsible for water quality or working with the Vistulan communities. Aside from river monitoring and management, UGRA coordinates a volunteer summer study programme, an internship programme, provides resources for teachers, runs outreach and education, and has made accessible an educational outdoor exhibition of water conservation and stormwater detention practices (Upper Guadalupe River Authority 2023a). These activities provide numerous opportunities for local people to get engaged and broaden their knowledge of the Guadalupe River ecosystem.



Figure 2. A Kerrville River Trail map located at the Lowry Park trailhead. Source: <https://www.kerrvilletx.gov/1341/River-Trail> Accessed 9 October 2023.

Michigan Paddle Stewards

The Michigan Great Lakes Water Trails Working Group is an organisation working to promote public access to the Great Lakes shoreline and form a statewide water trail system. The group runs a volunteer programme called Michigan Paddle Stewards, which aims to work with volunteers towards tackling the problem of invasive species in Michigan's water trails. The programme includes a brief training session for volunteers and has developed a smartphone app where stewards can report invasive species encountered on paddle. The programme both supports a sense of responsibility for the local environment and combats invasive species through organised action and the citizen science project. The Michigan Paddle Stewards programme also encourages paddlers to spread information in their area about how to help prevent the spread of invasive species, e.g. by thorough cleaning of watercrafts after use (Michigan Paddle Stewards - Michigan Water Trails, no date).

Edinburgh & Lothian Greenspace Trust

The Edinburgh & Lothian Greenspace Trust (ELGT) is an independent charity and social enterprise founded to protect and maintain local greenspaces around the Edinburgh and Lothian area in Scotland (*About Us – Edinburgh & Lothians Greenspace Trust*, no date). The ELGT runs projects aimed at improving greenspace and play space in the Edinburgh & Lothian region. Its primary programme are weekly conservation activities running for about 2 hours per session, in various green spaces around the region (*Volunteering – Edinburgh & Lothians Greenspace Trust*, no date). Participation in the activities is on a voluntary basis and tasks change seasonally, but often involve tasks such as path clearing and maintenance, tree and bulb planting, and clearing invasive species. The ELGT also organises community events such as weekly walking groups, jogging and fitness groups, and woodland activities for children (*Our work – Edinburgh & Lothians Greenspace Trust*, no date).

Recommendations – the Toruń Vistula Trail as an accessible green and blue space

The examples of international practice in the previous section show the large potential of green and blue space to provide opportunities for both local people and visitors to spend free time leisurely and actively. They indicate that local residents are willing to work together as a community to maintain and advocate for their neighbourhood natural spaces. It must be noted that the creation of spaces such as Kerrville River Trail or River's Edge Trail did not require large financial investments or making extreme changes to the surroundings. It is argued here that similar solutions can be adopted for the Vistula, placing focus on making minimal changes to the existing environment and investing in the development of community organisations that would take care and advocate for their new, accessible green and blue space.

The proposed solution is the creation of a river trail along the Vistula in Toruń, stretching along the entire riverside within the city's administrative area. The course of the trail is presented in figure 3. The trail's length totals 33 km, divided into two parts – 21 km along the northern riverside and 12 km along the southern side. The project, for the sake of this article, will be addressed as the Toruń Vistula Trail (*Toruński Szlak Wisły*).

The form of a trail was chosen considering the diversity of functions it can serve. For one, the trail will connect now separate places along the shore, improving the cohesion of the city landscape and creating new routes for pedestrians and cyclists. The trail along with its infrastructure encourages people to visit, attracting them to green and blue space that help improve physical, mental and emotional wellbeing (Swansea et al. 2003). Extra green and blue space are also highly desirable in light of more extreme heatwaves and weather events that have intensified in the recent years (Degórska 2014). Designated spaces for specific sports such as kayaking, paddling or cycling encourage these sports and may attract people from beyond the local area.

The trail can also serve an educational function, creating opportunities for both passive and active education. Passive education can take the form of informative boards installed along the trail, that the visitor can read in their own time. Active education might include educational walks, both for schools and individuals, and volunteering opportunities, where volunteers gain practical knowledge through doing hands-on conservation tasks. However, opportunities for active education can only be efficiently used if an organised body is created to manage these responsibilities, as will be discussed in the following section.

From the environmental perspective, the trail can also act as a green corridor which is helpful to wildlife, and it supports the preservation of valuable species (Zellmer and Goto 2022). Speaking of the environmental aspects, the proposed trail would fall within the Dolina Dolnej Wisły Natura 2000 special bird protection area (Generalna Dyrekcja Ochrony Środowiska, no date). While the Natura 2000 framework does not prohibit development, the trail's design must take into consideration environmental scientists' recommendations aimed to preserve habitats along the shore and limit its impact on local wildlife. The part of the trail crossing through the Kępa Bazarowa nature reserve will make use of the existing educational trail through the reserve.



Figure 3. The proposed course of the Toruń Vistula trail. The total distance for the northern riverside trail is 21 km, for the southern side trail – 12 km. Map source: OpenStreetMap.

Inclusivity of the Vistula Trail

In line with the Sustainable Development Goal of creating accessible green spaces in urban areas, the new Vistula trail should be fully accessible to people regardless of their age, disability level or type, or any other additional needs. The primary aspects to consider in regard of accessibility are path width and surface type, trail gradient and ascent rate, and accessible trailheads. According to the *Switch* guide to accessible design, the minimum path width is 180 cm to accommodate wheelchair users (Kowalski 2018, 22). This requirement will be met as a two-way cycling path should be at least 200 cm wide. The path surface must be hardened and even, but in this project the choice must also consider the surroundings – it should look as natural as possible as to not disturb the natural landscape of the riverside. The chosen surface should also prevent the accumulation of water puddles, mud, and sand. A suggested material is a mineral surface that is permeable, blends in with the surrounding nature, and is suitable for wheelchair users (Jakubisová and Rollová 2017).

The gradient of the planned trail is gentle, with some steeper sections, most notably the hills in Winnica area. This section does not exceed the maximum recommended ascent rate (Kowalski 2018, 94), but the section should be marked on the map as more challenging. As in examples from the review section, a detailed map of the trail should be made available online and offline, with information on surface type, the location of resting points, and any possible difficulties such as steeper sections. This will allow visitors to plan their visits and adjust their routes according to their ability.

Any informational boards and signage on the trail should be accessible visually (e.g. font choice) and have an alternative for people with visual impairments (e.g. educational boards in Braille). The trail should have enough resting points to accommodate people without the ability to walk longer distances at once, and it could be divided into fragments that allow to adjust the walk's length appropriately to the walker's ability.

Further actions – beyond the trail

The recommended actions are not limited to developing physical infrastructure but must also include the social environment of the river. Many recommendations in this sphere were included in the PZR report for the *Wisła Wciągga* project. While the report provided a much wider-ranging and more complex guidance, I find it necessary to mention actions I find the most important from the standpoint of developing the Vistula riverside into an accessible space for outdoor recreation that considers both the social and environmental needs of the area. The three recommended actions are:

- Establishing an official system of monitoring water quality in the Vistula;
- Authorities' continuous support for companies offering Vistula-based active recreation, such as kayaking and paddling, and for organisations and individuals working to increase awareness of Vistula's historical, cultural and environmental significance;
- Forming a Toruń Vistula Trail Trust which will coordinate educational and community activities on the trail, including volunteering and organised walks.

Volunteering in local green spaces has documented well-being benefits and helps to build and strengthen community ties, at the same time as contributing to the upkeep of the local environment in its practical sense (Ohmer et al. 2009). Therefore, it is recommended that a community volunteering scheme is established as part of the trail project, to help maintain the trail as well as build a network of individuals concerned with the well-being of Toruń's green and blue spaces.

The detailed plans for the location of essential infrastructure and trailheads, as well as activity points along the trail, can be developed in further design stages.

The table below summarises the key features of the trail in the fields of environmental benefits, inclusivity, and opportunities for recreation and the development of business and tourism (table 1).

<p>Environment</p> <ul style="list-style-type: none"> • The trail acting as a corridor for wildlife • Increased awareness of the Vistula's environmental significance, accomplished by educational boards and information campaigns • Unregulated riverside allows for natural fluvial processes to occur • Increased focus on good water quality in the Vistula 	<p>Inclusivity</p> <ul style="list-style-type: none"> • Path width and surface type suitable for wheelchair users, people with visual impairments, and individuals with other specific needs • Activity stations for children and adults with learning difficulties and disabilities • Trailheads accessible by public transport and vehicles for individuals with specific mobility needs
<p>Business & Education</p> <ul style="list-style-type: none"> • Educational boards installed at different points along the trail, containing information about different aspects of the Vistula's significance (cultural, historical, environmental, economic) • Space for businesses at trailheads, e.g. cafes • Free educational resources for teachers to lead outdoor lessons on the trail • Access to the trail for environmental educators working in non-formal education 	<p>Recreation</p> <ul style="list-style-type: none"> • Boat and kayak launch and landing spots, accessible by vehicles for equipment collection and delivery • Small architecture – benches, roofed resting points, picnic tables, litter bins • Path width and surface type suitable for different kinds of recreation, including walking, jogging and cycling • Suggested loops of different lengths to cater to different target audiences • Educational trails and marked points of interest along the river

Table 1. The key elements of the proposed Toruń Vistula Trail for each of the four target fields.

Conclusion

If Toruń truly is to turn back to the river, it has to make it easily accessible for everyone in the city, no matter their location and ability. Hence the need for a riverside trail that will be integrated with the public transport network and present opportunities for outdoor recreation as well as educational and community activities. At relatively low cost and effort, the city could gain a new green space with the added benefit of a water trail that will diversify the opportunities available to both local residents and tourists. The analysis has also shown that the proposition of a river trail in Toruń had previously been put forward and so it is a workable project that should be considered in the near future.

As an important urban centre in northern Poland, Toruń should strive to learn from the good practices that succeeded elsewhere and stimulate the development of waterside life in the wider region. The trail proposed in this article should only be a starting point in the journey to develop a stronger relationship between the river and the local community and connect the city's residents over their shared blue space.

If implemented, the trail needs careful design to ensure its viability, particularly in its environmental aspect. It needs to stay committed to pursuing the Sustainable Development Goals outlined in the beginning section of this article – supporting healthy lifestyles and sustainable urban communities, protecting life on land, and creating decent work opportunities and economic growth. Finally, the trail would work in agreement with the development strategies for Toruń itself and for the kujavian-pomeranian voivodeship. Therefore, the project would respond to needs existing at all levels from global to local, considering even individuals' needs for therapeutic spaces and need for community.

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Figure 1. A fragment of the interactive map of the River's Edge Trail, Montana. Source: <https://greatfallsmt.net/recreation/interactive-rivers-edge-trail-map> (Accessed 9 October 2023)

Figure 2. A Kerrville River Trail map located at the Lowry Park trailhead. Source: <https://www.kerrvilletx.gov/1341/River-Trail> (Accessed 9 October 2023)

Figure 3. The proposed course of the Toruń Vistula trail. The total distance for the northern riverside trail is 21 km, for the southern side trail – 12 km. Map source: OpenStreetMap (Accessed 27 September 2023).