

# CARVED BY THE FLOW

how water shapes our land



# CARVED BY THE FLOW

how water shapes our land

Collegio Arcivescovile Trento

3rd year Technical Institute - Economic and Technological curricula  
school year 2025-2026

**CARVED BY THE FLOW**  
how water shapes our land

Printed at Istituto Pavoniano Artigianelli



## **Water - resource, identity, economy**

This catalogue is the outcome of a project developed by the students of class 3<sup>a</sup> Istituto Tecnico Economico and Istituto Tecnico Tecnologico at Collegio Arcivescovile Trento, within the framework of the Schools Beyond Regions and Borders programme. The initiative was designed to foster interdisciplinary learning, critical thinking, and collaborative work through the exploration of a theme of both local and global relevance - water.

In the northern Italian region of Trentino Alto-Adige, water is a defining element of the natural landscape and a key driver of economic activity. Mountain glaciers and snowfields, rivers and lakes, irrigation systems and hydroelectric infrastructures all contribute to shaping a territory where environmental resources and human practices are deeply interconnected. Water sustains agricultural production, supports energy generation, enables tourism, and plays a crucial role in everyday life.

The project invited students to investigate water not only as a physical resource, but also as a cultural and symbolic element, as well as a potential factor for cooperation. Drawing inspiration from the webinars attended, students were encouraged to reflect on the broader implications of water use and distribution.

The work is structured as a visual and narrative exploration. Through photographs, students documented the presence and functions of water in their local environment. While the written sections provide contextual information, graphic design contributions translate key ideas into visual messages.

A central objective of the project was to promote interdependence. Students worked in groups with differentiated roles - photographers, graphic designers, researchers and writers, and curators - requiring continuous exchange of materials, ideas, and feedback. The final catalogue should therefore be understood as the result of a shared process.

This catalogue stands as both a record of the learning process and an invitation to the reader to reflect on the role of water in shaping places, economies and communities. It also highlights the importance of education in raising awareness and promoting active citizenship.

**Alice Bianchi**  
**English Teacher**  
**4th May 2026**

# WATER SOURCES



## Introduction

Glaciers and snowfields are fundamental elements of the alpine environment. A glacier is a mass of permanent ice that forms from the accumulation and compaction of snow over many years. When snow falls, it is gradually compressed until it turns into compact ice. Snowfields, on the other hand, are accumulations of snow that remain even during the summer but do not completely turn into ice like glaciers.

The main difference between glaciers and snowfields is therefore their duration and the transformation of snow: glaciers are permanent and moving, while snowfields are more temporary and static. In the Alps, these elements play a very important role because they influence the landscape, the climate, and the availability of water. In particular, in Trentino they represent a natural resource of great value both environmentally and economically.

## The geographical context of Trentino

Trentino is an autonomous province located in northern Italy, characterized by a mostly mountainous territory. About 70% of its surface is covered by mountains, including the Dolomites and the Adamello-Presanella group. The Dolomites, declared a UNESCO World Heritage Site, are famous for their spectacular peaks, while the Adamello-Presanella group hosts some of the largest glaciers in the region.

The climate of Trentino is alpine, with cold winters and heavy snowfall and cool summers. These conditions favor the formation and maintenance of glaciers and snowfields, especially above 2500–3000 meters of altitude. However, in recent decades there has been an increase in average temperatures of about +1.5°C, which has led to a significant reduction in glacier surfaces. Despite this, Trentino still preserves an important glacial heritage, even if it is gradually reducing.



## **The main glaciers of Trentino**

Among the most important glaciers of Trentino are those in the Adamello-Presanella group, which represent about 60% of the glacial surface of the region. The Adamello glacier is the largest, with an area that in the past surpassed 18 km<sup>2</sup>, although today it has been reduced to about 15 km<sup>2</sup>.

Another very well-known glacier is the Marmolada glacier, located on the highest mountain in the Dolomites. In the last 100 years, this glacier has lost about 70% of its volume, becoming one of the symbols of climate change in the Alps.

There are also smaller glaciers, such as those in the Ortles-Cevedale group and the Brenta Dolomites. These glaciers, even if smaller, play an important role in maintaining environmental balance. Overall, the number of glaciers in Trentino has decreased by more than 30% in recent decades.

## **Importance for water provision**

Glaciers and snowfields represent a fundamental reserve of fresh water. During winter they accumulate snow, while in summer they slowly release water through dissolution. This process ensures a constant flow to rivers and streams even during the hottest and driest periods.

In Trentino, it is estimated that up to 20–30% of the summer flow of watercourses comes directly from glacier dissolution. This is particularly important for the Adige River, one of the main rivers in northern Italy.

Without glaciers, during summer there would be more intense periods of drought, with serious consequences for agriculture, energy production, and water supply. Snowfields, although smaller, also help maintain a constant water supply, especially in high mountain areas.

Supplying water, glaciers and snowfields play an essential role in the alpine environment. They help regulate the local climate by reflecting part of solar radiation thanks to their white surface. This helps keep temperatures lower in mountain areas.

They also support unique ecosystems. Glacial streams, for example, host animal and plant species adapted to extreme conditions. The disappearance of glaciers could lead to the loss of about 30% of these specialized species. Land and vegetation also depend on the presence of water coming from glaciers and snowfields. Without them, many alpine areas would become drier and less suitable for biodiversity. For this reason, their conservation is essential to maintain the natural balance of Trentino.



## Economic and commercial importance

Glaciers and snowfields have a significant impact on the economy of Trentino. First of all, they support tourism: every year thousands of visitors practice skiing, mountaineering, and hiking, generating an important part of local income. It is estimated that alpine tourism contributes about 15–20% of the provincial economy.

Another fundamental aspect is the production of hydroelectric energy. Water from glacier melting feeds many power plants, contributing about 60% of local energy production.

Moreover, water is also used for agriculture and industry, not only in Trentino but also in other Italian regions. Through river systems, such as the Adige, this resource reaches downstream areas and indirectly also contributes to the economies of other European countries. In this sense, glaciers represent a strategic resource not only locally but also internationally.



## Climate change and future perspectives

In recent decades, the glaciers of Trentino have been rapidly decreasing due to climate change. Higher temperatures and reduced snowfall are accelerating their melting. As already mentioned, some glaciers have lost up to 70% of their volume.

According to studies, if the global average temperature increases by another 2°C, more than 80% of alpine glaciers could disappear by the end of the century. This would have very serious consequences: reduction of water resources, loss of biodiversity, and negative economic impacts.

To face this problem, concrete actions are needed, such as reducing greenhouse gas emissions and protecting mountain environments. The future of Trentino's glaciers will depend on the choices that will be made in the coming years.



In conclusion, the glaciers and snowfields of Trentino are a fundamental resource in many ways: environmental, water-related, and economic. They provide water, support unique ecosystems, and contribute to the development of the territory even beyond local confines. However, their gradual melting due to climate change represents a serious problem. Protecting them is essential to preserve the natural balance and ensure important resources for future generations.



# MOVEMENT

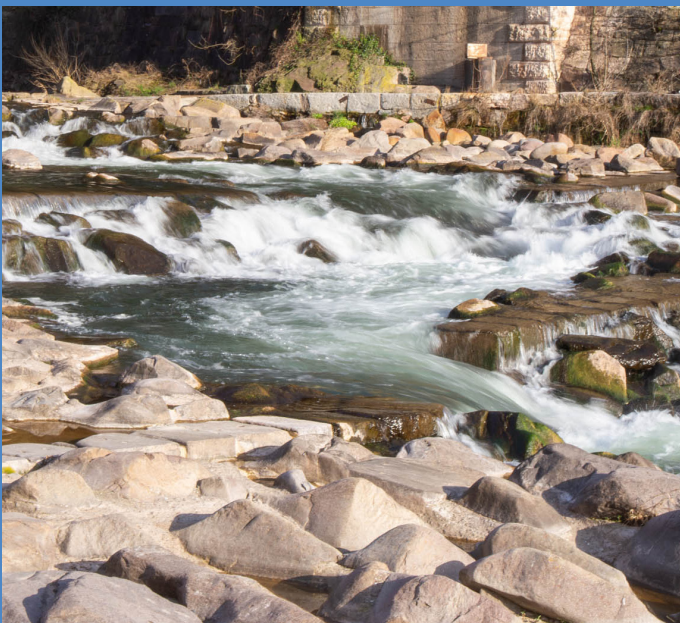
## The Hydrographic Network of Trentino

The hydrographic network of Trentino is rich and varied. This region, located in northern Italy, has many rivers, streams, and waterfalls. Most of them originate in the mountains and are fed by snow and glaciers. During winter, snow accumulates on the mountains, and in spring and summer it melts, creating strong water flows. The most important river in Trentino is the Adige River, which crosses the region from north to south. In addition, there are many smaller rivers and tributaries that form a complex and well-connected water system.



## Landscape and Water Quality

The landscape of Trentino has been shaped over thousands of years by glaciers. As a result, there are deep valleys, fast-flowing rivers, and many waterfalls. These natural features make the region unique and attractive. The quality of water in Trentino is generally very good. It is regularly monitored to ensure it is safe for people, animals, and plants. This is also due to limited pollution and the presence of protected natural areas.



## Why Rivers Are Important

Rivers in Trentino are important for several reasons:

### They shape the land

Over time, rivers have created large valleys such as Val d'Adige, Val di Non, Val di Fiemme, and Valsugana. These valleys are important because they allow people to live, work, and build towns. They also influence the local climate and agriculture.

### They provide water

Water is essential for agriculture, especially for growing apples and grapes, which are key products of the region. It is also used in homes and industries. Furthermore, water supports ecosystems and biodiversity.

### They produce energy

Water is used to produce hydroelectric power in Trentino. This type of energy is clean, renewable, and environmentally friendly. Many power plants are located along rivers and dams.



## Streams and Their Characteristics

In Trentino, many watercourses are streams due to the mountainous terrain. Their water levels change during the year. In spring and summer, there is more water because of melting snow, while in winter levels are lower. Many small streams flow through narrow valleys. These areas must be carefully managed because heavy rain can cause floods or landslides.



### Tourism and sports

Rivers attract tourists and support outdoor activities. For example, the Noce River is famous for rafting. The Sarca River flows into Lake Garda, a popular tourist destination. Other rivers and streams are used for fishing, hiking, and sports, contributing to the local economy.

### Natural routes

In the past, rivers were used as natural transport routes. The Adige River connected northern and southern Europe. Today, it still plays a role in transport and infrastructure development.



## Waterfalls and Natural Features

Trentino has many beautiful waterfalls, often linked to glacial areas. Some famous examples are the Cascate del Nardis, the Cascate del Varone, and the Cascate del Saent. These waterfalls are popular tourist attractions and show the natural beauty of the region. Visitors enjoy taking photos, relaxing, and spending time in nature. They also create special environments where plants like mosses and ferns can grow.

## Monitoring of Water Quality

Water quality is monitored by a local agency called APPA. This organization checks chemical and biological conditions of the water. It also studies small organisms to understand if the water is clean and healthy. This monitoring helps prevent pollution and protect drinking water.

## Historical Aspects

In the 19th century, the Adige River was modified to reduce floods and improve land use. These changes helped people live more safely and use the land more efficiently. However, they also altered the natural course of the river. Today, there is more focus on protecting and restoring natural river environments.



# RIVERS AND STREAMS FOR TOURISM

## Main rivers and tourism

Some of the most famous rivers are:

### Adige River

As the main river in Trentino, the Adige is a vital waterway for the region. It is a favorite spot for sport fishing and outdoor enthusiasts, particularly for those cycling along the scenic Adige bike path, which follows the river through the heart of the valley.

### Noce River

The Noce River in Val di Sole is ranked among the best in Europe for white-water sports. It is a vibrant hub for adventure tourism, featuring specialized centers

for rafting, kayaking, and hydrospeed in a breathtaking alpine setting.

### Alpine streams (such as Avisio and Sarca)

#### Activities:

Alpine streams like the Avisio and Sarca are the wild soul of the region. Perfect for adventurous travelers seeking a deep connection with nature, they offer ideal spots for canyoning, hiking, and fishing in untouched landscapes.

# LAKES

## Main lakes and tourism

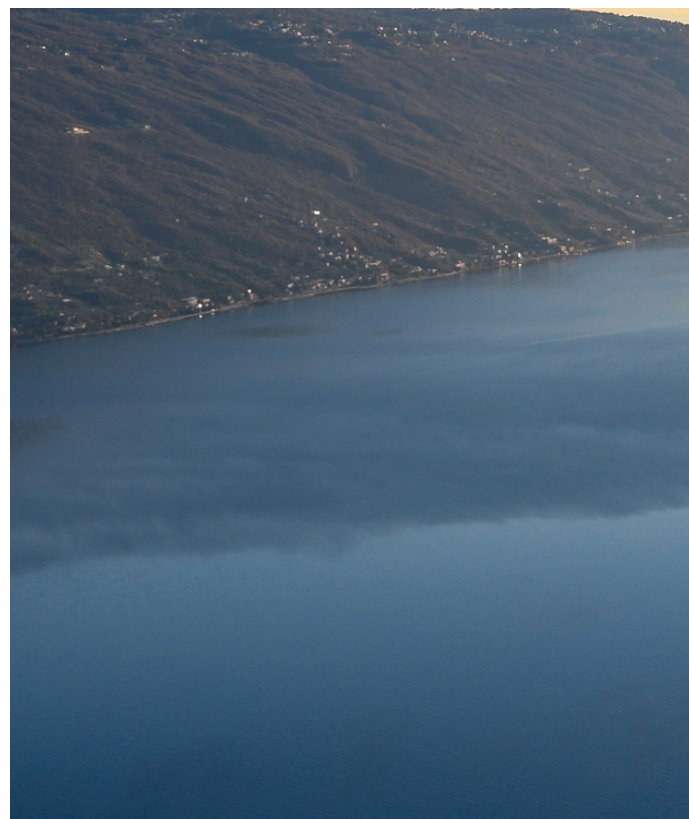
Some of the most famous lakes are:

### Lake Garda (northern area)

As the largest lake in Italy, northern Lake Garda (Trentino) is a premier European hub for water sports. Centered around Riva del Garda and Torbole, this international destination offers a mild climate and world-class conditions for sailing, windsurfing, kitesurfing, SUP, and swimming. It is a unique natural arena that hosts prestigious global sporting events year-round.

### Lake Molveno

Nestled at the foot of the Brenta Dolomites, Lake Molveno is frequently celebrated as one of Italy's most beautiful and cleanest lakes. An ideal destination for families, it features well-equipped beaches and crystal-clear waters perfect for swimming, kayaking, and pedal boating. It offers a unique blend of relaxation and stunning alpine scenery.

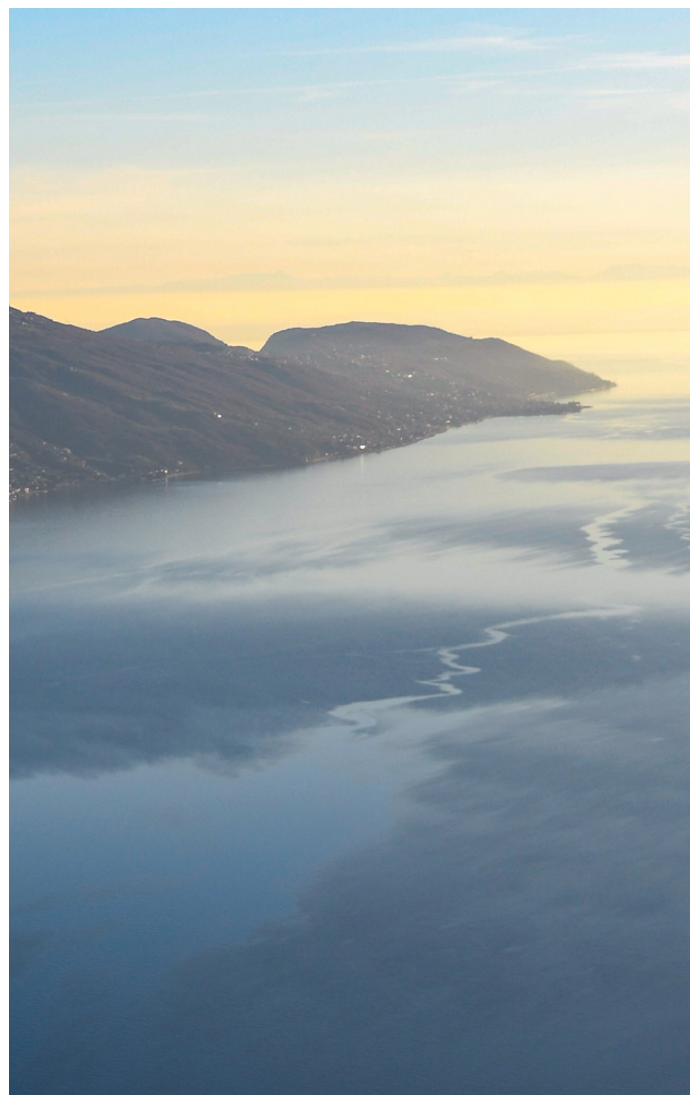


### Lake Caldonazzo and Lake Levico

Known for being warmer than other alpine waters, Lakes Caldonazzo and Levico are popular summer hotspots. Caldonazzo is the go-to for canoeing, sailing, and water skiing, while Levico is perfect for relaxation. Both offer a unique, temperate mountain lake experience.

### Lake Tovel

Located in the Adamello-Brenta Nature Park, Lake Tovel is famous for its legendary red water phenomenon (now a thing of the past). It is a top destination for nature tourism, offering incredible scenery for trekking and photography.



# OUTDOOR WATER EXPERIENCE

Outdoor water experiences (extreme sports) are activities performed in natural aquatic environments such as rivers, lakes, or waterfalls that involve a high level of adrenaline, risk, and specific technical skill.



## What types of activities are available?

Trentino offers many extreme water sports, mainly:



### Rafting

Rafting involves descending a river on a rubber dinghy, accompanied by a group and a guide. During the descent, you negotiate rapids and waves, working together to maintain control of the boat.



### Hydrospeed

Hydrospeed is more intense as you descend the river directly in contact with the water, using a small floating board. Your body is immersed in the current and you control the movement with your fins. For this reason, it is more physical and requires greater endurance.



### Canyoning

Canyoning, on the other hand, takes place within gorges and canyons. You don't use a vehicle, but proceed on foot, following the water's course, overcoming natural obstacles such as rocks and waterfalls. You'll make jumps, slide down natural slides, and abseil down ropes, making it a very varied and adventurous sport.



### River kayaking

Finally, river kayaking is an individual sport in which you use a small boat to descend the river. It requires more technique and control, as you must manage your balance and the rapids yourself.

These activities combine movement, technique, and endurance, offering intense and immersive experiences.

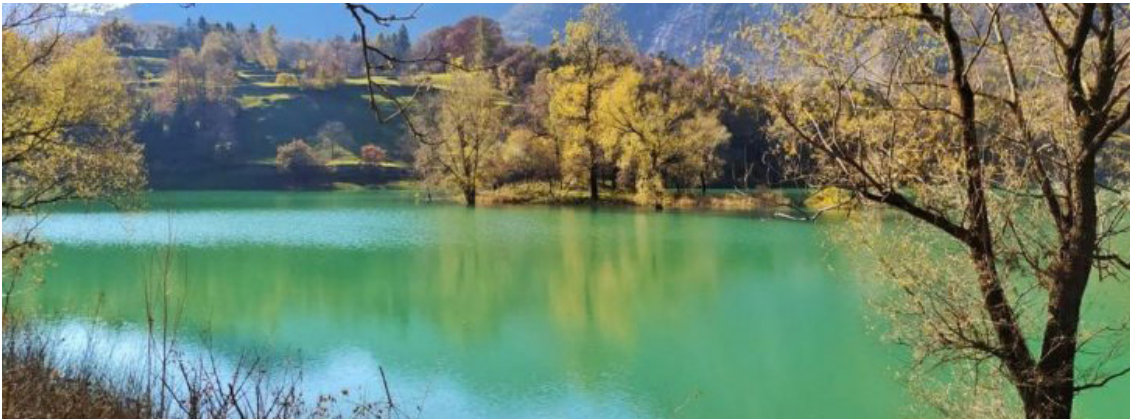
## Where can we go?

Trentino offers numerous specific locations for practicing extreme water sports:



### Ledro Valley and Lake Garda Trentino

This area is home to many canyoning and lake sports. Streams such as the Palvico, Rio Nero, and Vione offer canyoning routes of varying difficulty levels, furthermore, Lake Ledro and nearby Lake Garda offer wakeboarding and kitesurfing thanks to favorable winds.



### Ciudicarie, Primiero, and Val di Breguzzo

For those seeking adventure away from the crowds, these lesser-known canyoning spots offer a unique experience within pristine, wild settings that remain untouched by mass tourism.

### **Val di Sole – Noce River**

This is the most famous place for rafting, the Noce River is considered one of the best rivers in the world for this activity, thanks to its rapids and constant water flow, hydrospeed and kayaking are also practiced here, the valley is surrounded by mountains and forests, making the experience even more immersive.



### **Val di Non – Lake Santa Giustina and Rio Novella**

This area is ideal for kayaking and hiking in narrow gorges. The Rio Novella offers picturesque routes through natural canyons, where you can paddle between high, narrow rock faces.



### **Val di Fiemme – Avisio River**

Another important area for rafting, quieter than the Val di Sole but still suitable for adventurous experiences.



## **What is the difficulty level?**

Activities are available at different levels:

Trentino's water sports cater to all levels: Basic for beginners and families (easy rafting/canyoning), Intermediate for the fit (hydrospeed), and Advanced for experts (technical rapids and canyons). Routes range from simple walks to technical descents with high jumps and abseils.

## **How safe are they?**

Safety is a priority, ensured by

Safety is paramount activities feature certified guides, initial briefings, and supervised routes. All technical equipment (helmets, wetsuits, ropes) is provided, for activities like rafting, relying on expert guides who know the river and its conditions is mandatory.

## **Environmental impact**

Trentino pays close attention to sustainability

Trentino pays close attention to sustainability, ensuring that all outdoor sports are conducted as regulated activities, to minimize the environmental footprint, tours are organized in guided groups to reduce impact and foster a deep respect for river ecosystems.

Many of these routes are located in protected areas or nature reserves, where responsible behavior is essential to preserve the local flora and fauna.

## **What requirements are needed?**

Requirements vary by sport, but generally:

Participation in Trentino's water activities requires a few essentials: the ability to swim, good physical fitness, and meeting the minimum age (typically 6–14 for basic levels). While no experience is needed for beginners, advanced activities require specific technical skills or prior experience.

## **When are they practiced?**

Seasonal variations are very important:

Activity timing depends on the season, rafting runs from May to October, while canyoning and lake sports peak in spring and summer, overall, the best window for these adventures is between June and September.

## **How much do they cost and how do you book?**

Costs vary depending on the activity:

Costs vary depending on the chosen activity, with rafting typically ranging from approximately €30 to €80, while canyoning usually costs between €50 and €120, for those interested in hydrospeed, prices generally fall between €60 and €100.

These activities can be booked through specialized outdoor centers located in the main valleys, with a high concentration of options especially in Val di Sole and the Garda area.

# MONUMENTS



## Fountain of Neptune

The Fountain of Neptune is Trento's main water feature, built in the 18th century in Baroque style. Located in Piazza Duomo, it depicts the god Neptune surrounded by tritons and sea creatures. It symbolizes dominion over water, an essential resource for the city, and is today one of its most recognizable historical symbols.

## Fountain of Neptune

The Eagle Fountain is a medieval fountain located in Trento's historic center. Linked to a local legend, it depicts a symbolic eagle. In the past, it served a public function for water supply. Today, it represents an important historical and identity element, a testament to the city's daily life and urban culture in the Middle Ages.

## Predazzo Water Trail

The Predazzo Water Trail is a cultural itinerary that crosses the town, connecting numerous fountains and historic water features. It represents an example of traditional management of Alpine water resources. The trail highlights the relationship between community and water, demonstrating the social, economic, and symbolic importance of this resource over time.

## Civezzano Roman Bridge

The Civezzano Roman Bridge is an ancient structure linked to the Roman road system, built to cross a watercourse. It is a testament to the hydraulic engineering of the era, capable of integrating infrastructure and the environment. It represents an important historical relic that highlights the strategic role of waterways in the connections and development of the Alpine region.

## Mezzolombardo Canal

The Mezzolombardo Canal is a historic artificial canal used for irrigating fields, especially vineyards. It is part of a traditional water management system that is fundamental to local agriculture. It represents a significant example of Alpine rural engineering and demonstrates the sustainable relationship between people, the land, and natural resources over the centuries.

## Santa Massenza Hydroelectric Power Plant

The Santa Massenza Hydroelectric Power Plant is one of Trentino's major hydraulic projects, built in the 20th century. It harnesses the power of water to generate electricity. Nestled in the Alpine landscape, it represents an example of sustainable industrial development and demonstrates the importance of hydroelectricity for the region's economy and energy independence.



# HYDROELECTRIC POWER PLANTS

Trentino is one of the Italian regions with the most hydroelectric power plants. This is because there is a lot of water and mountains that help make energy.

Right now, there are 39 hydroelectric plants in Trentino, connected to 20 big water projects. Hydroelectric plants give many people jobs. For example, the Dolomiti Energia group has invested millions to improve plants and has hired hundreds of workers. Some plants are like “living museums.”



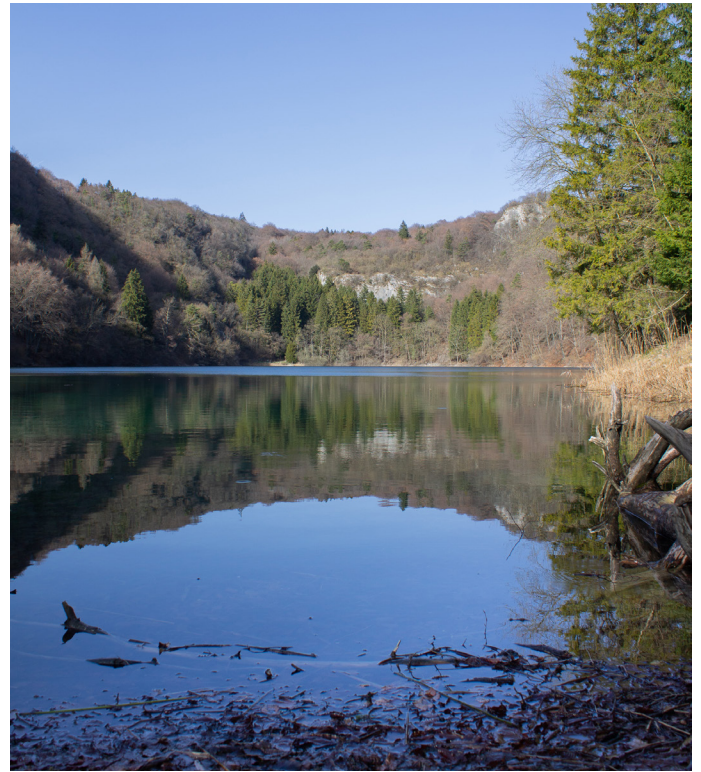
## What is a hydroelectric power plant?

Trentino is Italian region with the most hydroelectric power plants:

Trentino is one of the Italian regions with the most hydroelectric power plants. This is because there is a lot of water and mountains that help make energy.

Right now, there are 39 hydroelectric plants in Trentino, connected to 20 big water projects. Hydroelectric plants give many people jobs. For example, the Dolomiti Energia group has invested millions to improve plants and has hired hundreds of workers. Some plants are like “living museums.”

Hydroelectric power plants convert water energy into renewable, CO2-free electricity by using gravity to funnel water through pipes and spin turbines. There are three main types of plants: run-of-river, which utilizes the natural flow of streams without large dams; reservoir, which relies on water stored in mountain lakes or dams; and pumped storage, which moves water between two reservoirs at different elevations to balance electricity production



## Hydroelectric plants in Trentino?

Trentino is the leader in hydroelectric energy:

Trentino is a leader in hydroelectric energy. Important plants are Santa Massenza, Riva del Garda, and Cogolo in Val di Peio, managed by Dolomiti Energia.

### Santa Massenza Plant

This is the biggest hydroelectric plant in Trentino. It is in Valle dei Laghi and was built between 1945 and 1952. It is a reservoir plant and uses glacier water that flows to Lake Garda. The turbine room is 600 meters underground for safety and technical reasons.

### Riva del Garda Plant

This plant uses the 600-meter drop of water from Lake Ledro. It is a pumped storage and reservoir plant. It produces electricity for about 30,000 families. It is an example of sustainable industrial architecture.

### Cogolo Plant in Val di Peio

The Cogolo plant has been working since 1929. People call it “the most beautiful in Italy” because it looks like an alpine hotel. It uses high mountain water and Lake Careser to produce clean electricity, making 162 GWh of energy.



## How many dams are there in Trentino?

The region's unique geography makes it a powerhouse for hydroelectric energy:

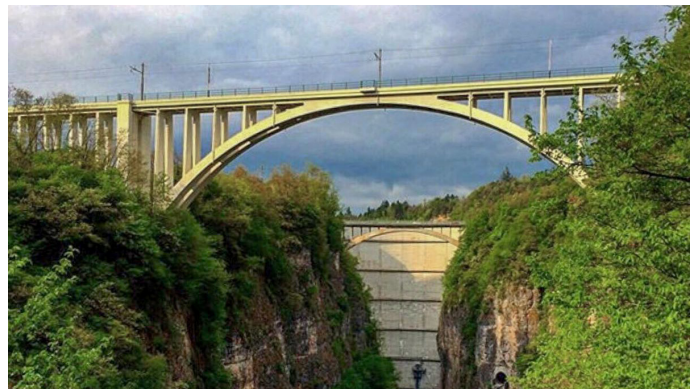
The region's steep valleys and abundant water are ideal for hydroelectricity. Thanks to these mountains and rivers, Trentino-Alto Adige hosts about 36 large dams, making it a key producer of renewable energy.



## What is a dam?

Engineering marvels play a vital role in managing our planet's natural resources, among these:

A dam is a human-made structure that stops or controls a river, creating a lake that can be used for producing electricity, providing water for homes and farms, and preventing floods. These structures can be made of concrete, rocks, or earth and must be very strong; additionally, the areas around dams often feature parks and tourist spots for fishing, hiking, and water sports.



## How many types of dams are there?

There are many types of dams but in trentino there are :

A gravity dam is a very big and strong structure that holds back water using its own weight, while an arch dam features a curved shape that uses pressure to stay strong. In contrast, a buttress dam is typically made of earth and relies on specific supports for its stability.



## What are the main dams in Trentino?

There are 4 main dams in trentino:

### Santa Giustina Dam

In Val di Non, near Cles. One of the biggest dams in Trentino, 148 meters high. It is an archgravity dam. Behind it is Lake Santa Giustina, a big artificial lake. It is used for electricity, water storage, and flood control.

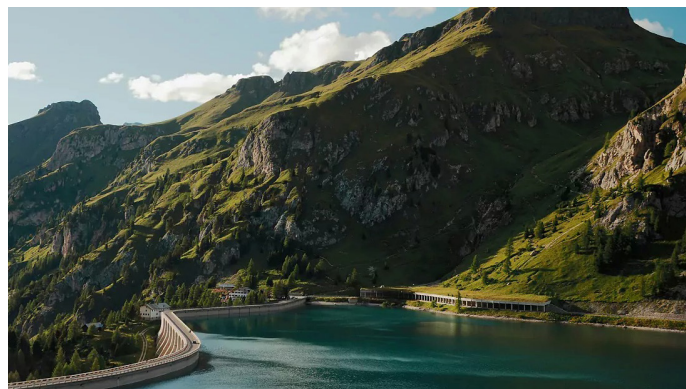


### Fedaia Dam

Nestled in the heart of the Dolomites, at the foot of the majestic Marmolada glacier, stands this impressive gravity dam. Built in the 1950s, the structure holds back the waters of Lake Fedaia, a renowned artificial basin that has become a popular tourist destination for its stunning views and outdoor activities.

### Molveno Lake Dam

In the Dolomiti di Brenta. It controls the lake level to produce electricity. Water goes to hydroelectric plants to give energy to the local network. The dam is made of concrete and is very strong. The lake is also a tourist spot for kayaking, fishing, and walking, with beautiful views of the Dolomites.



### Pian Palù Dam

In Val di Peio. Made to stop water and create a lake. The lake is used for hydroelectric energy. The dam is made of concrete and controls water flow. The area is popular for hiking and outdoor activities.

# WATER IN TRENTINO

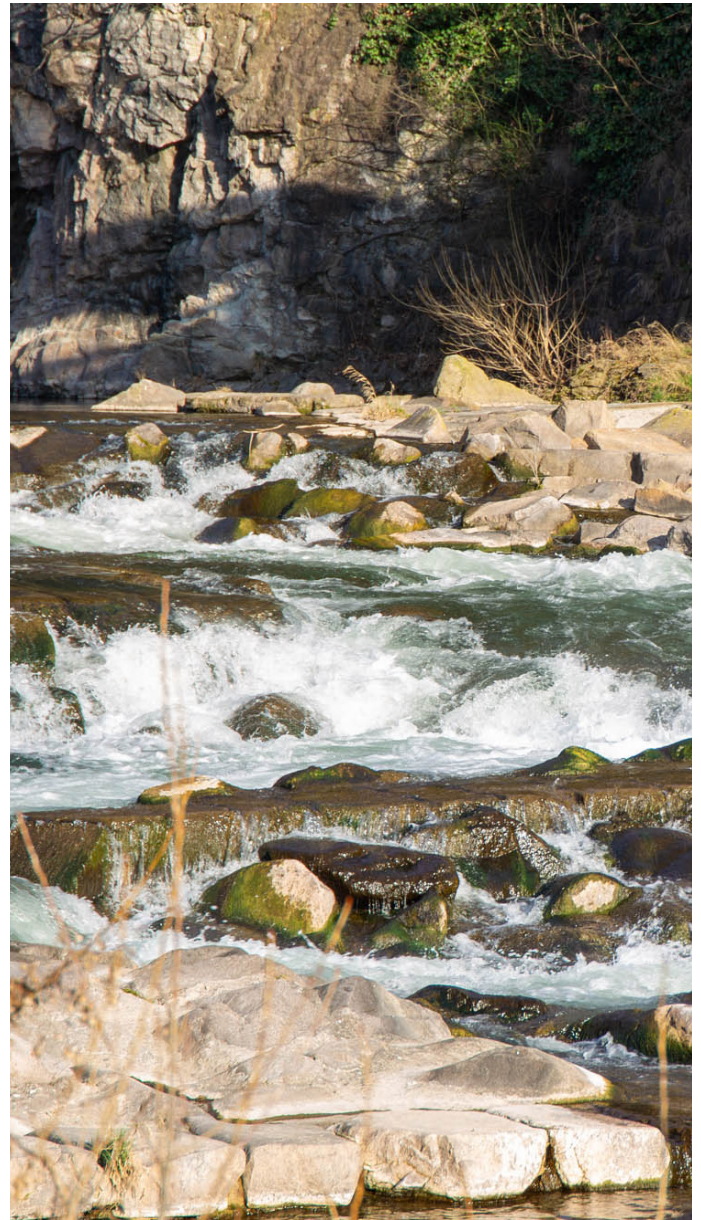


Trentino is one of the Italian regions with a lot of water, thanks to its mountain geography. Mountains, glaciers, valleys, and a lot of rain create a very rich and complex water system. In this area there are more than 300 lakes, many rivers and streams, and also glaciers and underground water that are very important resources. Water in Trentino is not only a natural element: it is also very important for history, economy, and local culture. From old farming activities to modern hydroelectric energy, water has always been central in people's lives.

## What is the role of water in trentino?

The Alpine landscape offers ideal conditions for harnessing natural power:

In Trentino, water is not only a natural resource but also an important source of energy. The region is one of the main producers of hydroelectric energy in Italy. About 91% of the water is used for energy production, but it is not consumed. After being used, the water goes back to the environment. This makes hydroelectric energy a sustainable form of energy, especially in a mountain area where there are many height differences.



## How is the water quality?

Preserving the purity of the environment is a top priority for the region:

One of the most important aspects of water in Trentino is its quality, which is generally very high. Spring water is often rich in minerals and has a natural balance, so it is considered among the best in Italy. According to environmental data, underground water quality is generally good, and river water is mostly good or very good. Lake water is also in a good condition, even if some lakes need improvement. However, recent data from 2026 show a very positive situation: all bathing waters are classified as excellent. This result comes from a strict and continuous monitoring system that checks chemical, biological, and bacterial parameters.

## How do lakes influence the life of everyday?

Trentino is a land shaped by water, home to hundreds of stunning alpine basins:

The lakes of Trentino are very famous and beautiful. Some of the most important are Lake Garda (northern part), Lake Molveno, Lake Levico, and Lake Caldonazzo. These lakes are characterized by clear and clean water, colors ranging from deep blue to green, and beautiful natural landscapes. Many lakes are good for swimming and attract tourists from all over Europe. The excellent water quality makes them perfect for swimming, sailing, and other water sports.

## How rivers and streams influence the life of everyday?

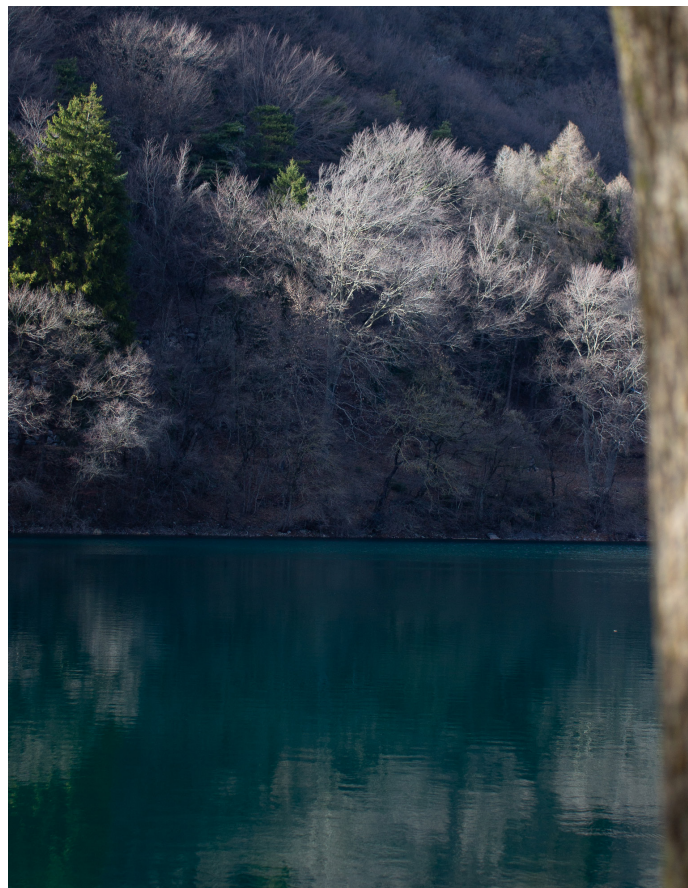
Beyond its lakes, the region's landscape is defined by a vast network of flowing waters:

Trentino also has many rivers and streams. The most important river is the Adige, one of the main rivers in Italy, which crosses the region from north to south. Mountain streams come from melted snow and have cold, fast, and oxygen-rich water. These conditions are perfect for many animals, especially fish like trout.

## How water is used in everyday life?

Efficient resource management promotes sustainable daily habits:

In Trentino, tap water is very popular. People trust its quality and often prefer it to bottled water. The water system is efficient, with fewer losses than the national average. Also, about 91% of pollutants are removed in treatment plants. This helps reduce environmental impact and supports a more sustainable lifestyle.



## How water is a cultural element?

Water has always shaped the social fabric of the mountains:

In Trentino, water is also part of culture. In the past, fountains and public washing places were important meeting points for people. Today, many activities are still connected to water, such as walking near streams, practicing water sports in lakes, and visiting thermal baths and wellness centers. Water helps improve quality of life and well-being.

## Protection

Scientific precision and constant commitment ensure high environmental standards:

The good quality of water in Trentino is not by chance. It comes from a strict control system where the environmental agency checks rivers, lakes, and underground water regularly. They study chemical quality to monitor pollution and ecological quality to check nature conditions. This system helps solve problems quickly and keep high standards.



Water in Trentino is a great example of balance between nature and human activities. Its quantity, quality, and variety make it very important for the environment, economy, and society. From clear lakes to fast streams, from underground water to glaciers, every form of water creates a unique landscape and rich ecosystem. Interesting facts, like biolakes and hydroelectric energy, show how this re-

source is used in a smart and sustainable way. Today, when water is a global challenge, Trentino is a good example to follow.

# DID YOU KNOW?

## Water from springs

In Trentino, over 90% of drinking water comes from natural springs.

## Glaciers and water

The glaciers of the Dolomites feed rivers and lakes during the summer.

## Adige river

The Adige River is the second longest in Italy (410 km).

## Water consumption

Average water consumption is approximately 220–250 liters of water per person per day.

## Alpine lakes

The area has hundreds of alpine lakes, many above 1,500 m above sea level.

## Lake of Resia

Curon Venosta, there's a famous bell tower rising from the waters of Lake Resia.

In 1950, the construction of a dam submerged the ancient village, forcing its residents to move higher up. Today, only the medieval bell tower remains, a symbol of that history.

According to legend, on cold nights you can still hear the bells ringing, even though they no longer exist.

## Famous and unusual springs

Lake Tovel in Val di Non: until 1964 it turned blood red every summer. This was caused by an algae, *Tovellia sanguinea*, which bloomed thanks to the special conditions of the spring that feeds the lake. Today it no longer happens, but the legend remains.

## Water's journey

Alpine waters can take years or decades to filter through rocks before emerging.

## Lake Garda

Lake Garda contains approximately 50 km<sup>3</sup> of water.

## Energy from water

In Trentino, approximately 70–80% of electricity comes from hydroelectric power.

## Clean water

Trentino's waters are often low in nitrates, a sign of low contamination.

## Water treatment

Most municipalities have advanced water purification and reuse systems.



## Geological facts

Dolomites underwater: dolomitic rocks were formed 250 million years ago when there was a shallow and warm tropical sea here. So many springs today flow from what used to be ancient sea floors.

## Springs and history

Marmolada tunnels: during the First World War, the Austro-Hungarians dug tunnels in the glacier. The melting water from the glacier still feeds springs that are used today.

## Mountains like sponges

It seems strange, but in Trentino between about 1200 and 1500 meters there are no lakes. The water goes under the ground because the mountains can keep water like a sponge.

## Biolakes

One interesting thing about water in Trentino is the “biolakes,” which are artificial lakes that work like natural swimming pools.

Different from normal pools, they do not use chlorine because they use plants and stones to clean the water.

Consequently, they have a very low environmental impact. These lakes mix nature and comfort and give a special experience to visitors.

## Molveno

Molveno Lake has won many awards for its clean water and beautiful views. It sits right in front of the Dolomites, making it a perfect spot for nature lovers.

## “Warm” mountain Lakes

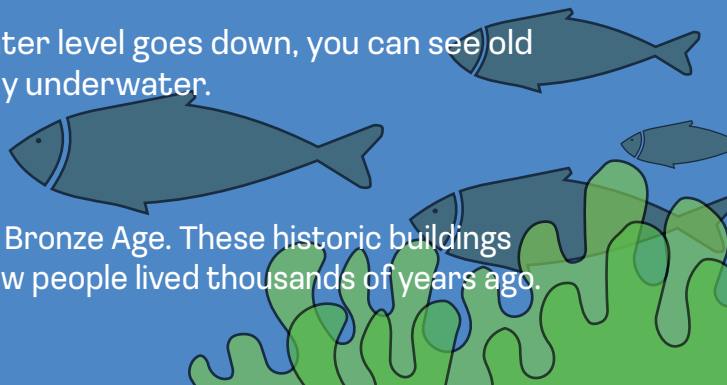
Levico Lake and Caldonazzo Lake are very special. Unlike most mountain lakes, they are among the warmest in Southern Europe. This is very unusual for an alpine area.

## The Lake with hidden bridges

Santa Giustina Lake hides a secret. When the water level goes down, you can see old bridges and roads from the 1950s that are usually underwater.

## Prehistoric villages

Ledro Lake is home to ancient stilt houses from the Bronze Age. These historic buildings are now a UNESCO World Heritage site and show how people lived thousands of years ago.



# SITOGRAPHY

**Agenzia Provinciale per la Protezione dell'Ambiente (APPA Trento), Home Page**, <https://www.appa.provincia.tn.it>, 03/04/2026

**Appa, Acqua**, <https://rapportoambiente.provincia.tn.it/argomenti/acqua/>, 17/04/2026

**Appa, Monitoraggio corsi acqua**, <https://www.appa.provincia.tn.it/Documenti-e-dati/Documenti-tecnici-di-supporto/La-qualita-delle-acque-del-Trentino-e-la-rete-di-monitoraggio#>, 03/04/2026

**Appa, piano tutela acque**, <https://www.appa.provincia.tn.it/Documenti-e-dati/Documenti-tecnici-di-supporto/Piano-di-Tutela-delle-acque-2022-2027>, 20/04/2026

**Autorità di Bacino Distrettuale delle Alpi Orientali, Home Page**, <https://www.alpiorientali.it>, 26/03/2026

**Corpo Nazionale soccorso Alpino e Speleologico, Home Page**, <https://www.cnsas.it>, 07/04/2026

**Cultura Trentino, acqua risorsa della montagna**, <https://www.cultura.trentino.it/Rassegne-concluse/L-acqua-risorsa-della-montagna>, 20/04/2026

**Dipartimento protezione civile, Rischio grandi dighe/ dipartimento protezione civile**, <https://rischi.protezionecivile.gov.it/it/pagina-base/rischio-grandi-dighe/>, 02/04/2026

**Dolomiti Energia, energia rinnovabile**, <https://www.gruppodolomitienergia.it/attivita/produzione-rinnovabile.html>, 17/04/2026

**Dolomiti Energia, Produzione**, <https://www.dolomitienergia.it>, 03/04/2026

**Dolomitibrenta, Lago di Molveno, Dolomiti e Brenta**, [https://www.dolomitibrenta.it/Lago\\_di\\_Molveno.htm](https://www.dolomitibrenta.it/Lago_di_Molveno.htm), 03/04/2026

**FAO, Home Page**, <https://www.fao.org>, 07/04/2026

**Federazione Italiana Canoa Kayak, Home Page**, <https://www.federcanoa.it>, 04/04/2026

**Federazione Italiana Rafting, Home Page**, <https://www.federrafting.it>, 04/04/2026

**Fontana del Nettuno, Wikipedia**, [https://it.wikipedia.org/wiki/Fontana\\_del\\_Nettuno\\_\(Trento\)](https://it.wikipedia.org/wiki/Fontana_del_Nettuno_(Trento)), 04/04/2026  
Giornale Trentino, acqua per ogni trentino, <https://www.giornaletrentino.it/cronaca/trento/acqua-per-ogni-trentino-210-litri-al-giorno-1.29872>, 20/04/2026

**Google, curiosità laghi in trentino**, <https://www.google.com/search?q=luoghi+insoliti+e+curiosita++laghi+in+trentino...>, 03/04/2026

**Google, perché i fiumi sono importanti**, <https://www.google.com/search?q=perche+i+fiumi+sono+importanti+in+trentino...>, 19/03/2026

**Hydrotour, Home Page**, <https://www.hydrotourdolomiti.it>, 07/04/2026

**Il quotidiano, la grande sete in trentino**, <https://www.iltquotidiano.it/articoli/la-grande-sete-del-trentino-ogni-giorno-servono-726-litri-di-acqua-potabile-per-abitante/>, 17/04/2026

**ISPRA, Home Page**, <https://www.isprambiente.gov.it>, 03/04/2026

**ISTAT, Home Page**, <https://www.istat.it>, 07/04/2026

**Lago di Garda, Wikipedia**, [https://it.wikipedia.org/wiki/Lago\\_di\\_Garda](https://it.wikipedia.org/wiki/Lago_di_Garda), 04/04/2026

**Museo delle Scienze di Trento (MUSE), Home Page**, <https://www.muse.it>, 07/04/2026

**ONU, Home Page**, <https://www.un.org>, 02/04/2026

**Paesaggio Trentino, acqua un bene prezioso**, [https://paesaggiotrentino.it/acqua-un-bene-prezioso-per-il-trentino\\_2492\\_idn/](https://paesaggiotrentino.it/acqua-un-bene-prezioso-per-il-trentino_2492_idn/), 18/04/2026

**ProgettoDighe, Impianti Val di Pejo- progetto dighe**, <https://progettodighe.it/forum/viewtopic.php?t=2956>, 03/04/2026

**Provincia autonoma di Trento, Home Page**, <https://www.provincia.tn.it>, 03/04/2026

**Provincia Trentino, utilizzo acqua**, [http://www.statistica.provincia.tn.it/binary/pat\\_statistica\\_new/stato\\_ambiente/UtilizzoAcquaInTrentino2025.1742558750.pdf](http://www.statistica.provincia.tn.it/binary/pat_statistica_new/stato_ambiente/UtilizzoAcquaInTrentino2025.1742558750.pdf), 18/04/2026

**Snambiente, acqua del trentino**, <https://www.snambiente.it/notizie/temi/acqua/acque-del-trentino-a-portata-di-clic-il-nuovo-portale-informativo-di-appa/>, 20/04/2026

**Trentino. com, cultura e territorio**, <https://www.trentino.com/it/cultura-e-territorio/natura-e-paesaggio/laghi/>, 18/04/2026

**Trentino, le forme dell'acqua**, <https://www.trentinotreeagreement.it/pensieri-verdi/forme-dell-acqua-in-trentino/>, 18/04/2026

**Trentino Wild, Home Page**, <https://www.trentinowild.it>, 07/04/2026

**Utilitalia, Home Page**, <https://www.utilitalia.it>, 26/03/2026

**Visit Fiemme, Home Page**, <https://www.visitfiemme.it>, 04/04/2026

**Visit Trentino, biolaghi**, <https://www.visittrentino.info/it/articoli/famiglia/biolaghi-del-trentino>, 20/04/2026

**Visit Trentino, cascate in Trentino**, <https://www.visittrentino.info/it/guida/natura/cascate>, 02/04/2026

**Visit Trentino, Centrale idroelettrica di Cogolo**, [https://www.visittrentino.info/it/guida/da-vedere/musei/centrale-idroelettrica-di-cogolo\\_md\\_84738166](https://www.visittrentino.info/it/guida/da-vedere/musei/centrale-idroelettrica-di-cogolo_md_84738166), 26/03/2026

**Visit Trentino, i segreti dell'acqua**, [https://www.visittrentino.info/it/trentino/i-segreti-dell-acqua-in-trentino\\_id\\_81259116](https://www.visittrentino.info/it/trentino/i-segreti-dell-acqua-in-trentino_id_81259116), 20/04/2026

**Visit Trentino e Carda Trentino, Home Page**, <https://www.visittrentino.info> e <https://www.gardatrentino.it>, 04/04/2026

**Visit Val di Sole e Ursus Adventures, Home Page**, <https://www.visitvaldisole.it> e <https://www.ursusadventures.it>, 07/04/2026

**Visitvaldinon, La diga di Santa Giustina: 70 e oltre di storia**, <https://www.visitvaldinon.it/it/la-diga-di-santa-giustina-70-anni-e-oltre-di-storia>, 02/04/2026

**Wikipedia, Centrale idroelettrica**, [https://it.wikipedia.org/wiki/Centrale\\_idroelettrica](https://it.wikipedia.org/wiki/Centrale_idroelettrica), 12/03/2026

**Wikipedia, Centrale idroelettrica del Ponale**, [https://it.wikipedia.org/wiki/Centrale\\_idroelettrica\\_del\\_Ponale](https://it.wikipedia.org/wiki/Centrale_idroelettrica_del_Ponale), 26/03/2026

**Wikipedia, Centrale idroelettrica di Santa Massenza**, [https://it.wikipedia.org/wiki/Centrale\\_idroelettrica\\_di\\_Santa\\_Massenza](https://it.wikipedia.org/wiki/Centrale_idroelettrica_di_Santa_Massenza), 19/03/2026

**Wikipedia, la rete geografica in trentino**, [https://it.wikipedia.org/wiki/Geografia\\_del\\_Trentino](https://it.wikipedia.org/wiki/Geografia_del_Trentino), 26/03/2026

**Wikipedia, Lago di Fedaia**, [https://it.wikipedia.org/wiki/Lago\\_di\\_Fedaia](https://it.wikipedia.org/wiki/Lago_di_Fedaia), 03/04/2026

**Wikipedia, laghi in trentino**, [https://it.wikipedia.org/wiki/Laghi\\_del\\_Trentino](https://it.wikipedia.org/wiki/Laghi_del_Trentino), 03/04/2026

**WWF, Home Page**, <https://www.wwf.it>, 02/04/2026

## PHOTO

**page 17, Noce River**: [https://commons.wikimedia.org/wiki/File:Fiume\\_Noce.JPG#filelinks](https://commons.wikimedia.org/wiki/File:Fiume_Noce.JPG#filelinks)

**page 16, Giudicarie, Primiero, and Val di Breguzzo**: <https://www.iltrentinodeibambini.it/foilage-dove-ammirare-lautunno-in-trentino/>

**page 23, Molveno Lake Dam**: <https://trentinexp.it/intinerari/lago%20di%20molveno%20e%20nembia>

**page 23, Fedaia Dam**: [https://commons.wikimedia.org/wiki/File:Diga\\_di\\_Fedaia\\_01.jpg](https://commons.wikimedia.org/wiki/File:Diga_di_Fedaia_01.jpg)

**page 23, Pian Palù Dam**: <https://www.dolomiti.it/it/fiumi-laghi-cascate/lago-di-pian-pelu>

**page 15, Rafting**: <https://unsplash.com/it/foto/un-gruppo-di-persone-che-cavalcano-sul-retro-di-una-zattera-wSFub7VcwOc> - photo by Adventure Albania

**page 15, Hydrospeed:** <https://unsplash.com/it/foto/un-uomo-che-cavalca-una-zattera-gialla-lungo-un-fiume-2ZonQlj1R30> - photo by Crazy Water Rafting

**page 15, Canyoning:** [https://unsplash.com/it/foto/un-uomo-con-un-casco-sta-rappando-una-cascata-K7xhZvei\\_EI](https://unsplash.com/it/foto/un-uomo-con-un-casco-sta-rappando-una-cascata-K7xhZvei_EI) - photo Han-Hsing Tu

**page 15, River kayaking:** <https://unsplash.com/it/foto/donna-sul-kayak-sullo-specchio-dacqua-che-tiene-la-pagaia-zK049OFP4uI> - photo by Filip Mroz

**page 8, Climate change:** <https://unsplash.com/it/foto/il-sole-splende-sul-terreno-innevato-uHNWhmXzVb4> - photo by Zar Resendiz

# CARVED BY THE FLOW

how water shapes our land

**Carved by the Flow**  
how water shapes our land

Teacher: Alice Bianchi

**Project curators:** Anna Failo, Darius Ilie Moldoveanu,  
Lorenzo Tononi and Mingxuan Wu

**Graphic design and layout:** Melissa Dorigatti, Denise  
Granata, Davide Groff, Vasco Nardelli  
and Giuseppe Corricelli

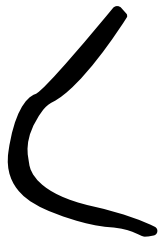
**Photographs:** Thomas Frachsen, Giacomo Giroto,  
Katrin Nardelli and Massimiliano Sirsi

**Text:** Alice Agostini, Simone Endrighi, Creta Mantovani  
Vilma Mantovani, Mattia Piffer, Eduard Popescu,  
Sofia Ragazzi, Andrea Roman, Alessandro Tebri,

Made in 2026

Collegio Arcivescovile di Trento

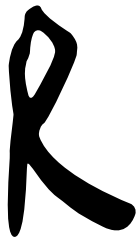
Cover design inspired from online sources,  
reinterpreted by the student  
for educational purposes



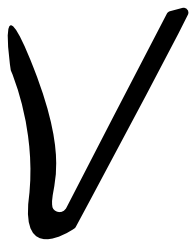
Noce Stream



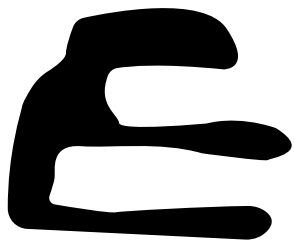
Noce Stream



Avisio Stream



Chiese River



Carda Lake



Avisio Stream



Avisio Stream

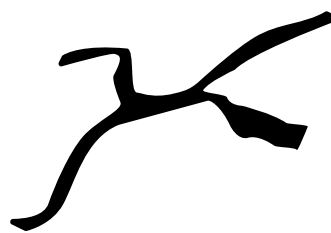


Santa Giustina Lake



Sarca River of Val Gerova

Sarca River of Campiglio

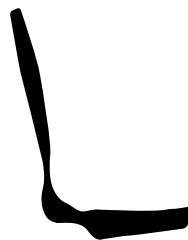


Avisio stream

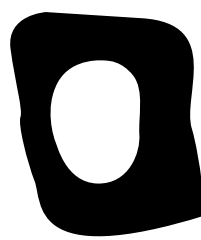


Avisio stream

Adige River



Avisio stream



Noce stream



Noce stream



