

The World of **Watermaster**

NEWSLETTER • 2020

smart solution for hard work

Together, with smart technology

Taking care of water bodies brings benefits

Environmental dredging project in Xi'an, China



2020 is nature's "Super Year"
...and the beginning of the decade of restoration (UN).
Now is the time to strengthen our efforts to secure
our vital water bodies, and other natural capital.

We need to protect, restore and develop our water bodies

Together, with smart technology

We are facing a climate crisis, a biodiversity crisis, and due to the corona pandemic, a global economic crisis, and a health crisis, too. A polluted or otherwise mistreated and unbalanced environment will sooner or later destabilize all our lives. Therefore, the UN has set goals for humanity to reach a sustainable world by 2030. Water interlinks with all of these goals. Clean, safe, and easily accessible water is essential for all life and development. Improving the condition of water bodies will bring many benefits for the environment, economy, and the well-being of us all. It is crucial to understand and appreciate the importance of our vital waters and implement solutions for fixing them. Our future depends on it.

Many water bodies around the world are a source of illness and harm rather than of life and joy. Why should we accept this when **we have the power to fix it?**

We can stop the discharge of wastewater, trash, and other pollution into natural waters to **prevent the loss and deterioration of aquatic ecosystems and biodiversity.** We can clean all dirty water bodies to **restore habitats and ensure the availability of clean water for all.** This way we can also avoid the spreading of diseases and **protect people and animals from getting sick.** We can limit and prevent excessive eutrophication and the spreading of harmful invasive aquatic species, such as the water hyacinth, to **ensure the viability of water**

systems. We have the means to mitigate and prevent destructive floods to **keep people and properties safe.** We can **keep our industrial ponds fully operational and safe for nature,** and we can **recover valuable materials** from them. We can develop our urban waters to **bring us more safety, opportunities, and joy.**

Let's face these challenges with optimism and enthusiasm. We can solve the problems we come across by learning more about them, making better policies, and investing **more in restoration projects and smarter and more effective technology.**

We live in a completely interconnected world. Our well-being depends on the

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well-being of all others. Now more than ever, we must shield our environment from past, present, and future contamination, misuse, and degeneration. We cannot keep ourselves healthy if the environment where we live and the animals we interact with are not healthy. By taking action to **protect, restore, and develop our water bodies, we can improve the lives of all.**

All water bodies are valuable. In fact, mostly indispensable. Let's take better care of them. Together we can.

Yours faithfully,
The Watermaster Team

We believe in doing more with less
Around the world, our smart and mobile Watermaster
multipurpose dredgers help to provide cleaner, safer and
better functioning waters with fewer machines and costs.

All water bodies are valuable

Taking care of water bodies brings benefits

Taking better care of all polluted or otherwise neglected water bodies will bring a multitude of environmental, health, safety, cultural, industrial, and economic benefits. It is smart to start improving the condition of all poorly handled waters as soon as possible. The state-of-the-art amphibious multipurpose Watermaster dredger is made for environmental projects in sensitive shallow water environments. Watermaster can effectively and safely carry out practically all restoration and development work from dry ground to a depth of 6 meters of water. Keep important waters better maintained with Watermaster, the smart solution for hard work.

Remove polluted soil, trash, and invasive vegetation from rivers, lakes, and wetlands by dredging and raking. This will help sustain habitats and biodiversity and secure the availability of clean drinking and irrigation water.

Maintain city canals and other urban water bodies by dredging and raking out debris, excessive vegetation, and silt to secure good water flow and reduce the risk of floods. Remove the build-up of sediments from waterways and marinas by dredging and excavating to make navigation safer.

Strengthen and develop shores by pile driving to enhance functionality and safety of urban waters. Recover valuable materials

from industrial waste and drainage ponds and keep industrial process water ponds in good condition by suction dredging. This will minimize the waste of precious minerals and maximize the operational and environmental safety of the industrial plant.

Watermaster, the original amphibious multipurpose dredger does all this – and more. Every day, in nearly 80 countries worldwide, hundreds of Watermasters are improving the condition of local water bodies. Watermaster can access more worksites and enables more solutions than conventional machinery. It is easily transportable as a complete unit and quick to mobilize without a crane. Watermaster is self-propelled, it anchors steadily with its four spuds, and it operates



Watermaster is an environmental dredger it works extremely efficiently and accurately, being able to remove very precise layers of sediments while causing a minimal amount of turbidity.

efficiently with its large selection of powerful attachments. **With Watermaster, you can do more with less.** Watermaster's strong operational reliability is the result of over 30 years of continuous development, modern serial production facilities, world-class components, and full training and back-up.

Let's not waste our precious natural capital. Watermaster helps you to **take better care of water bodies and to provide more benefits for all.** We offer you a smart solution for this rewarding work. →

PROTECT. RESTORE. DEVELOP

HEALTHIER HABITATS AND ECOSYSTEMS

The world's ecosystems are out of balance. Growing human population, urbanization, and climate change are all contributing to extreme loss of habitats and biodiversity worldwide. We need to protect important water bodies and restore and recover damaged areas to reverse environmental deterioration and return the balance. The mobile and versatile Watermaster can access difficult locations and carry out many different kinds of work to improve the condition of a water body.

SAFER AND MORE FLUENT NAVIGATION

Waterways need maintenance. The build-up of sediments onto navigation routes risks the safety of people and vessels. The self-propelled and independently anchoring Watermaster can quickly and efficiently remove excessive sedimentation to secure safe passage for boats. Watermaster can work in very narrow and shallow waterways and marinas and remove precise layers of accumulated materials. Watermaster operates without blocking other water traffic.

MORE BUSINESS ACTIVITY AND JOB OPPORTUNITIES

People are naturally attracted to clean and aesthetically pleasing surroundings. Beautiful rivers, lakes, and other bodies of water are like a magnet for locals and tourists alike. Keeping these waters healthy and free of trash and pollution brings more visitors and plenty of possibilities for local businesses. The versatile Watermaster can help to clean, maintain, and develop these locations to bring more sustainability, safety, opportunities, and joy.

MORE EFFICIENT AND SAFER INDUSTRIAL PONDS

Many industries need waste and process water ponds in their processes. Well-maintained ponds make their operation more efficient and safer for the environment. Watermasters help to keep different kinds of industrial ponds in good condition all around the world. It can also recover valuable minerals from tailings ponds. The fully amphibious Watermaster can easily access and operate in these shallow and challenging environments.

ENVIRONMENT

HEALTH

SAFETY

TAKING CARE
 OF WATER BODIES
 BRINGS
BENEFITS

ECONOMY

CULTURE

INDUSTRIES

CLEANER WATER FOR ALL

Polluted water does harm to all: people, animals, plants, and soil. It is also unsuitable for the use of agriculture and other industries. By actively removing the pollution from our water bodies, we can help to provide cleaner water for all. Clean, safe, and easily accessible water is the foundation for the well-being of both people and nature. The multipurpose Watermaster can remove polluted sediments by dredging and trash and vegetation by raking. It can desilt water reservoirs and restore areas that suffer from excessive eutrophication or invasive water hyacinth to improve water storage capacity and prevent water scarcity.

FEWER FLOODS

Climate change is making weather more unpredictable. Some parts of the world are battered by extreme rainfalls, and some are plagued by droughts. Floods cause terrible suffering and economic losses globally every year. All trash, debris, excessive silt, and vegetation in urban canals and rivers reduce the water system's capacity to move water and increase the risk of floods during heavy rainfalls. Watermasters are widely used around the world to remove these obstacles from waterways and thus mitigate and prevent floods and keep people and properties safe.

MORE ENJOYABLE AND SAFER URBAN LIVING

Building docks, canals, piers, floodwalls and carrying out other civil-engineering projects develop the safety, functionality and possibilities for recreation in urban areas. The multipurpose Watermaster can be utilized in myriad water construction projects thanks to its easily changeable attachments (including a pile driver) and the capability to work from the waterside, also in very shallow areas.

HAPPIER AND PROUDER PEOPLE AND NATIONS

Many water bodies are inseparably tied to local cultures. They are the birthplace of ancient myths and woven to the identity of the nation and the daily life of its citizens. It is impossible to fully grasp the immense cultural significance of the Ganges, Nile and Lake Victoria, for example. The pressure of globalization, urbanization, and population growth has left many of these waters polluted and out of balance. Taking action to restore them boosts cultural pride and the morale of entire nations. Watermasters help to revive these cherished waters around the world.



Restoring a lake in Colombia



Maintaining a marina in Switzerland



Cleaning Manila Bay in the Philippines



Recovering materials from an industrial pond in Chile



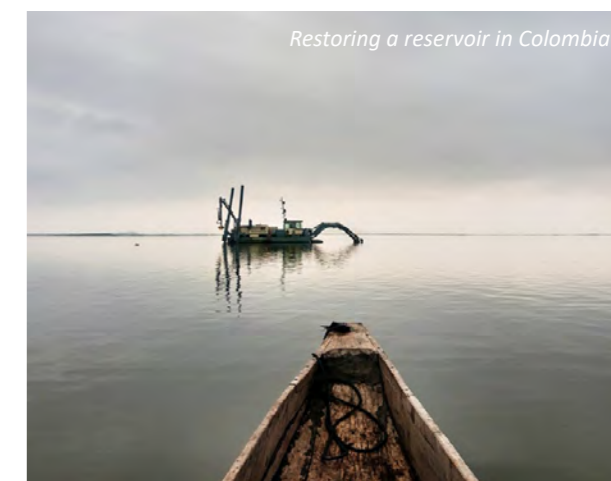
Cleaning a polluted lake in Finland



River cleaning and flood prevention work in Ghana



Developing urban water areas in France



Restoring a reservoir in Colombia



Watermaster excels in challenging conditions Environmental dredging project in Xi'an, China

*Restoration work in an urban environment
Cleaning and restoring Peach Blossom Pool Park's water areas have brought many benefits for the local people and environment.*

Xi'an, the historic capital in the northwest of China, has been a city with abundant water resources and its development has been closely related to the superior water environment. While the city's scale expanded, the population boomed and industrialization advanced, the flowrate of rivers and lakes has significantly reduced and the aquatic environment pollution has intensified. Water resource shortages, aquatic environment deterioration, and aquatic ecology fragility are common problems in big cities. The municipal government of Xi'an wanted better for the local people and environment. In 2018, they began to actively restore the vital water bodies of the city.

PILOT PROJECT

They chose Peach Blossom Pool Park as a pilot project. It is a popular urban riverside landscape park located in the lower reaches of Chanhe River, covering an area of 101 hectares, including 40 hectares of water surface. The small lake inside the park was heavily polluted, and residents had made a lot of complaints about it.

The flood discharge from Chanhe River and the overflow of sewage from the upstream sewage treatment plant caused many problems: **the sediments in the lake were silted up, the water body was polluted, and the aquatic environment had been seriously deteriorated.** It was decided that the polluted sludge was to be removed by dredging. **The goal was to speed**

up the flow rate of the river, improve the ecological conditions, and restore the aquatic environment.

CHOOSING THE BEST TECHNOLOGY

It is not easy to carry out dredging works in Peach Blossom Pool Park, which is in the center of a densely populated metropolis. First, it is difficult for large-scale machinery to access the site, and to transport the dredged sludge outside the city. Second, the working conditions and engineering construction were complex. For example, the water surface was covered by aquatic vegetation. The water depth was generally less than 50 cm, and some areas were even free of water, so ordinary dredgers could not work there. Third, the execution standards were high. The dredging works



Xi'an is located in the middle of the Guanzhong Plain in north-central China.

had to be carried out without disturbing the surrounding environment and nearby residents. Fourth, the planned construction period was short. The total dredging volume was about **15,000 cubic meters**. It was expected that the machine should complete the project within 25 days.

One of the project partners, **Shaanxi Chenghai Water Engineering Co.**, had fortunately just purchased the perfect technology for the project from Finland. They chose **the original amphibious multipurpose environment dredger, Watermaster**, because of its **leading performance and operational reliability**. Aquamec Ltd. has developed and manufactured Watermas-



Removing waste and siltation by excavating



Clearing vegetation and debris by raking



Removing sludge by suction dredging

A fleet combined into one multipurpose machine
The versatile Watermaster carried out all the works at the site. First, it began by raking and excavating the trash, excess vegetation and silt out from the river. Then it continued by suction dredging the accumulated sludge into geotextile tubes for dewatering. The water depth at the site was generally less than 50 cm, which was not a problem for the amphibious Watermaster.



Dewatering with geotextile tubes

ter environment dredgers for more than 30 years. The dredger is small, **light-weight, and easy to transport**. It is suitable for shallow water or even water-free operation. The machine **can access almost every site imaginable**. During the operation, there is **no need for auxiliary equipment, and one Watermaster can perform the work of a complete dredging fleet**. With **accurate and environmentally friendly operation and high efficiency**, it is much better than the traditional way of dredging.

CHALLENGING CONDITIONS

Watermaster is based on an amphibious design. It could be put into operation immediately upon arriving at the new site. Watermaster first began to **renovate the revetment, widen the river channel, and remove the construction waste from the bottom of the lake** by excavating. Then, Watermaster used the rake to **clean up**

the debris and vegetation near the water surface. In four and a half days, **40,000 square meters** had been cleaned up. Then Watermaster proceeded to **remove the sludge** by cutter suction dredging.

One of the difficulties of the project was the transportation and disposal of dredged sludge. The following plan was agreed on: cutter suction dredging by Watermaster + transportation by pipeline + dewatering by geotextile tubes. This combination made it possible to meet the strict requirements of environment dredging and ensured high dewatering efficiency. All the dewatered sludge was used for landscape reconstruction. **The whole project was completed 5 days in advance.**

POSITIVE RESULTS AND FEEDBACK

The results were very positive. The overall water **flowrate** in the East Lake of Peach

Blossom Pool Park **increased significantly, the water quality and the visual effect of the water surface improved**, and the **quality of air** in the surrounding residential zones **enhanced**. The residents' feedback was appreciative, which had never happened before in any engineering construction site of the city.

Since the completion of the project, the contractor has got recognition from the project owner and praise from local people. It has become a model leading the field of environment dredging in Xi'an and the whole northwest area.

For the full project story and video, please contact us:
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BEFORE restoration
Pollution, excessive vegetation and siltation, deteriorating aquatic environment, high risk for floods



AFTER restoration
Cleaner and healthier environment and recovering ecosystems, more enjoyable urban area for locals and tourists, lower risk of floods



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