

The World of **Watermaster**

NEWSLETTER • 2019

smart solution for hard work

We need a healthy environment

Making a positive impact

Cleaning Chennai's waterways



Healthy environments make healthy people

The world's freshwater sources are in a bad shape. For example, 50% of the world's rivers show signs of severe degradation. We need to take responsibility. It is in everyone's interest to start fixing the situation



The goal is clear:

We need a healthy environment

The world is out of balance and we are in a hurry to fix it. The United Nations is confronting the situation and has set crucial sustainable development goals (SDGs) for the coming years. One of them (SDG6) is to secure the availability of clean water for all people everywhere on earth by 2030, no one can be left behind. It is our human right to have access to clean and safe water; we simply cannot live without it. The ongoing climate change, growing world population and increasing urbanization will make it hard to reach the target. There is absolutely no time to waste. We need to start planning and implementing the projects to restore and protect our rivers, lakes and other freshwater sources now, today.

We all need a clean, safe and well-functioning environment; it is the basis for our well-being. Unfortunately, however, we are still far from achieving this. During the past decades, we have witnessed unprecedented economic growth all over the world, but the environment has paid a high price for it. There is hope, we are not powerless, but we need to move quicker. We urgently need to change our thinking and **prioritize sustainability in all that we do**. We need to design better laws that work not only for the well-being of all people, but also for the environment - these two are ultimately the same thing. We also need to launch **more restoration projects than ever to ensure the long-term preservation of vital waters and ecosystems**.

The world's resources are limited. Money is limited. It is smart to do as much as possible with the limited resources available. We believe that with mobile multipurpose solutions we can get **cleaner, safer and better functioning waters with fewer machines and lower costs**. This drives our work.

It is inspiring to see, that many share the same concern for the environment and the same vision to help fixing it by **doing more with less**. Our customers in over 70 countries worldwide deploy Watermasters in their local environmental restoration work. They are able to carry out projects that are more efficient and environmentally friendly, since one Watermaster handles the tasks of many conventional machines. This is what

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encourages us to keep on developing our technology to be better and better – and we have been doing so for over 30 years.

We need to make smart choices to build a sustainable world. We must always use our best knowledge of how natural systems function, so that we can work with nature when we solve problems. **By using the best technology and solutions available, we can work faster to reverse environmental damage and to secure the well-being of both people and nature.**

Yours faithfully,

Lauri Kalliola, *Managing Director*

*Cleaner and healthier rivers and lakes, safer canals and industrial ponds, more enjoyable urban areas and better functioning waterways
Our customers are making a positive impact across Europe - and the world*

Watermasters in Europe

Making a positive impact

What unites our customers and us is the will and determination to improve aquatic environments and to do so in the most efficient and environmentally responsible way. Many Government organizations, municipalities, construction and water restoration companies and companies that service different industrial plants are doing more with less by utilizing our technology. Mobile multipurpose Watermaster saves the environment, money and time. Here are a few examples of how Watermasters help our European customers to make a positive impact in their local environments.

SMART, FIELD-PROVEN TECHNOLOGY

Watermaster has **unique stabilizers, a strong excavator arm, sturdy hull and its own propulsion system**. These together enable Watermaster to walk in and out of water without crane assistance, move in shallow water areas, cruise without a tugboat in deeper areas and independently anchor itself in depths of up to 6 meters. **Working with a wide selection of quickly changeable heavy duty work attachments is safe and efficient**. Our design principle is to use well-known top quality components, such as Caterpillar engines and Bosch-Rexroth hydraulics, so that Watermaster is easy to service and it operates smoothly anywhere in the world. Spare parts are simple to find

locally, but we also deliver parts quickly from our factory in Finland.

DOING MORE WITH LESS

These are some of the key Watermaster features and advantages that our customers value. These enable them to **reach more sites** (shallow sites, narrow sites, sites with vegetation and trash, sites with water traffic) and to **offer more solutions** while using fewer machines – to do more with less.

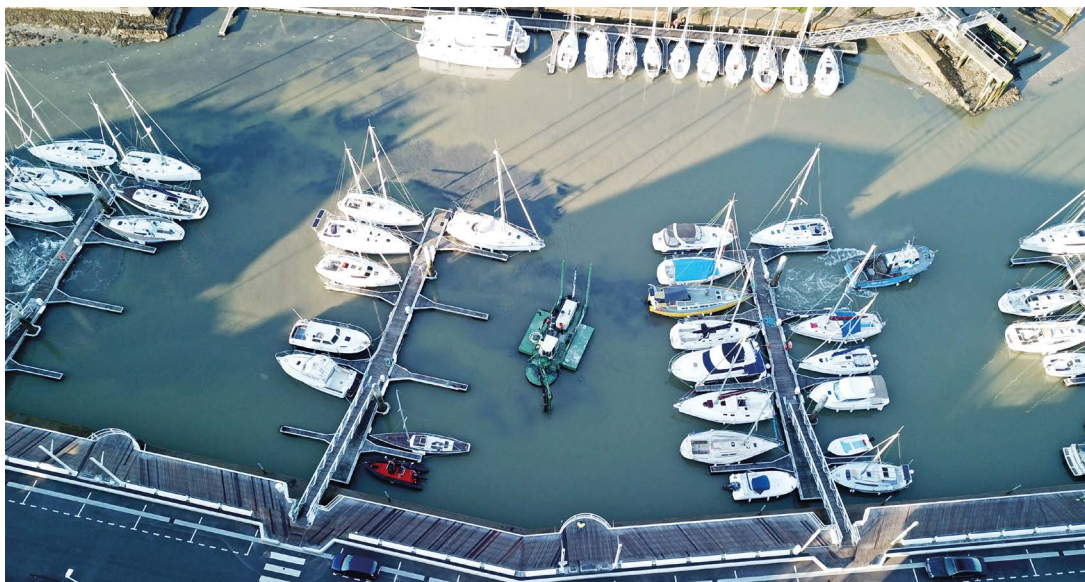
RESTORING RIVERS AND LAKES

Excessive eutrophication and siltation, water pollution, the spreading of invasive aquatic vegetation – these are some of the problems that many rivers and lakes



The ease of changing a site - Watermaster transports as a complete unit, it unloads from the trailer and walks into the water by itself

face. **Vesirakennus Ojanen Oy** is a Finnish company that has been cleaning, restoring and maintaining rivers, lakes and industrial ponds around Scandinavia with Watermasters for nearly 20 years. They often operate in difficult locations filled with polluted materials and lacking discharging space. **Watermaster and dewatering tubes** is an excellent combination for these situations. Watermaster is easy to transport and mobilize to all sites and dredging into the tubes is an excellent way to separate water from the (polluted) sediments quickly and without requiring much space.



Maintaining marinas and small harbours - Agile Watermaster can work in very tight places safely and efficiently. It removes accumulated sediments, trash and vegetation and can also help in building and maintaining the piers and shore banks by pile driving (picture from France)

MAINTAINING WATERWAYS AND MARINAS

Regular dredging is vital for many waterways, canals and marinas in order to ensure **safe passage for vessels and to keep the environment clean**. The French company, **I-Marine Solutions**, specialises in marina works. Watermaster is a perfect fit for them thanks to its versatility, easy transportability between sites and independent mobility in the water. With the agile Watermaster they can dredge the narrow paths in marinas efficiently and without blocking the water traffic. Unlike conventional dredgers, Watermaster does not need separate anchors or wire cables and winches for working. With the Multipurpose Watermaster they can also carry out other work at marinas, such as building and repairing piers (pile driving) and removing trash, debris and algae from the water (raking).

DEVELOPING URBAN WATER AREAS

Watermaster can use a variety of heavy duty work tools and reach sites that are inaccessible for land-based equipment. It can reinforce river and canal banks and build and maintain piers by installing metal sheets or wooden piles. It can help laying underwater pipeline and cable. With the hammer tool, Watermaster can dismantle outdated concrete structures and break big stones into smaller pieces for easier removal. The Polish company, **River Brothers**, is one of the European Watermaster contractors that are **improving the safety, functionality and cleanliness of urban waters** in Europe.

KEEPING INDUSTRIAL PONDS SAFE AND FUNCTIONAL

Ensuring the **safe and efficient operation** of many mines and other industrial plants requires that their process water ponds and tailings dams (wastewater ponds)

are maintained properly. The amphibious Watermaster is perfectly suited to these shallow ponds that need regular dredging.

Keeping industrial ponds in good condition is one of the main activities of a Finnish contractor, **Lopen maa-ja vesirakenne Oy**. They already operated a fleet of machinery, but their excavator-based solutions had certain limitations when working in a water environment. They wanted to diversify and expand their operations further with the amphibious multipurpose Watermaster. Watermaster combines the capabilities of an excavator and a dredger and safely covers all work in the whole shallow

Cleaning rivers, lakes, canals and other bodies of shallow water - Watermaster removes (polluted) sediments by suction dredging the materials with the cutter pump into dewatering tubes or a settlement pond (pictures from Norway)



Cleaning and maintaining industrial waste- and process water ponds

- Watermaster pumps materials from the ponds to land for further processing (picture from Germany)



water area up to the depth of 6 meters. With Watermaster, they often mobilize only one unit at a work site, where several machines were earlier required.

WATERMASTERS IN EUROPE

The EU has the strictest environment and safety regulations. The fully tested and certified Watermasters are made in Finland and have been successfully operating all over Europe since the 1980's. Of the several hundred Watermaster units in the world, over 100 are servicing Europe. The majority of them are previous generation Watermaster Classics, but there is also a growing number of the latest models active in the area. The Classic V looks roughly the same as the older models, but it has many improvements. Its dredging capacity, for example, has nearly tripled since the first generation, making it the world's most powerful fully amphibious multipurpose dredger (10 inch). The continuous systematic development and modern serial production facilities ensure the steady high quality and reliable performance of the Watermaster machines.



Removing excessive vegetation - with the rake tool Watermaster removes floating and rooted aquatic vegetation (picture from Finland)



Desilting work - Silt and sediments accumulate in the bottom of rivers and canals over time. Desilting these deposits reduces flood risk and improves water flow (picture from Lithuania)

Developing the safety and functionality of Waterways - Watermaster can be equipped with a vibratory piledriver. It can pile drive metal sheets as well as wooden piles (picture from Latvia)



Tough work, a smart solution -
The choked and polluted waterbodies of Chennai are in need of immediate restoration. The Greater Chennai Corporation uses efficient Watermaster equipment for fixing the problem



Greater Chennai Corporation's massive task: Cleaning Chennai's waterways

Greater Chennai Corporation (GCC) works to clean the dirtiest waterbodies running in and through the Metropolitan area of Chennai. Discharge of untreated sewage, industrial effluents and urban trash has left many local waterbodies heavily polluted and prone to flooding. The River Cooum, Adyar River, North Buckingham Canal, Captain Cotton Canal and Link Canal are some of the waterways that are in need of urgent attention. Greater Chennai Corporation's dream is to provide a healthy water environment for the locals, but in these hard conditions it is not an easy job.

BACKGROUND

Chennai is a vast megalopolis of about 5 million inhabitants. The local waterbodies are under immense pressure since the city's sewage water treatment and other waste management have not been able to keep up with the quickly growing population. **Many of the city's canals had become fully silted and swamp-like, covered with condensed water hyacinth and submerged weeds.** The conditions were optimal for the **spreading of disease-carrying mosquitoes**, which had swarmed the area and had become a real menace and health risk for the local people. Because the canals were choked, they also struggled to carry rainwaters out from the city, causing **severe floods during heavy rainfalls.**

THE OLD WAY

In the absence of better equipment, Greater Chennai Corporation used backhoes for the restoration and dredging work, loading the machines onto floating barges. They soon noticed, however, that it was a dangerous and inefficient working method. **Backhoes are land-based machines, their work stability and safety in water is poor.** After a few accidents they understood, that they needed a better solution.

THE NEW WAY

There are many **Watermaster** units cleaning and maintaining shallow waterbodies across India. **Encouraged by the positive feedback from many local states and the Central Government of India**, who all utilize Watermasters, GCC decided to try this



Chennai is home to about 5 million inhabitants and is situated on the eastern coast of India

Briefly

- Greater Chennai Corporation's job is to clean the waterbodies of Chennai
- Fully amphibious multipurpose Watermaster helps them to take care of the work with fewer machines and costs
- Watermasters are in active use all around India, helping to keep the country's shallow waterbodies clean and safe



Invasive water hyacinth and excessive silt cause many problems



Watermaster raking the silt and vegetation out of the canal

new approach. **Dharsan Dredging & Constructions Pvt. Ltd.** represents Watermaster in India. They also handle the operation of the machines as required. Greater Chennai Corporation followed the example of many other customers in India and hired Dharsan Dredging & Constructions Pvt. Ltd., to implement the work.

Unlike GCC's previous equipment, the **Watermaster proved to be very stable, safe and efficient in shallow water work.** The fully amphibious machine can work and move independently, precisely and effectively in Chennai's narrow and shallow rivers and canals. It can go under bridges and reach difficult parts of the waterbodies, where conventional machinery cannot go. In addition, with the multipurpose Watermaster they have **more solutions** in their hands; depending on the area they can choose between suction dredging, excavating, raking, hammering and pile driving – always selecting the best approach for the site. Watermaster also carries out larviciding (for controlling mosquitoes) with a purpose-built attachment.

THE RESULTS

Greater Chennai Corporation is actively cleaning the River Cooum, Adyar River, North Buckingham Canal and many other waterbodies in the city. Their process is to first excavate and rake the trash, debris, silt, water hyacinth and rooted aquatic vegetation to the shore with Watermaster. Then they load the sediment and vegetation into trucks and transport it for further processing or final placement, depending on the material.

During the past **36 months**, they have removed approximately **2,7 million tons of polluted silt, water hyacinth and trash out of the city's drains, rivers and canals.** In the same time, the number of mosquitoes has declined significantly. Their Watermaster unit has been very dependable and it is not a surprise – Aquamec has been developing the technology for over 30 years, utilizing the feedback from hundreds of clients and thousands of different environments. Watermaster uses the best components and field-proven solutions, which are reliable and easy to service. This

is what makes the Watermaster a professional tool for tough work and conditions. GCC's unit has completed **13,500 operational hours in 36 months.** Watermaster's automatic central pressure greasing system increases productive work time by reducing the time needed for routine daily maintenance. Dharsan Dredging's practise is to arrange a comprehensive preventive maintenance program once a year, including minor paintings and system checks. The local Caterpillar dealer provides the service for Watermaster's **Caterpillar** engine.

THE FUTURE

Greater Chennai Corporation was quickly convinced that Watermaster was the right tool for their work. Watermaster had already paid for itself after only six months of operation. The saved costs from using fewer machines have enabled GCC to invest in **another fully amphibious multipurpose Watermaster Classic V unit this year.** It will further enhance their restoration efforts and **help to make their dream of providing clean waters for the local people of Chennai a reality.**



Clean and safe waters for the people of Chennai - This is the dream of Greater Chennai Corporation. Watermasters are helping them to achieve it. The picture is from Captain Cotton Canal after cleaning work

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Watermaster

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