



**DREDGING  
SOLUTIONS**

# **CAPABILITY STATEMENT**

**Agile Solutions for Dredging and Dewatering Projects**



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## WHO WE ARE



**MUNICIPAL**



**INDUSTRIAL**



**MARINE**

With more than 35 years of dredging experience, Dredging Solutions is at the forefront of solving sludge and sediment removal problems throughout Australia. We believe that every project requires an individual approach to ensure its success and our team of highly skilled operators are committed to continuous innovation, taking pride in delivering bespoke solutions to complex dredging challenges.

Through our work across municipal, industrial and marine sites of all shapes and sizes we have led the way in providing cost effective solutions to sludge and sediment challenges. This extensive on-site experience has resulted in us building an excellent reputation for high quality work and solving problems others can't. Furthermore, our consistent adherence to work health and safety practices and environmental standards allows us to ensure our projects run smoothly, guaranteeing the maximum value for clients.

We take pride in offering our extensive fleet of cutting-edge equipment to customers requiring assistance with sludge and sediment difficulties. With various dredging and dewatering options available to select from, combined with the wide variety of ancillary services we offer such as sludge surveying and biosolid beneficial reuse, we are well placed to tackle any project.

The core of Dredging Solutions operations is the provision of services to municipal wastewater treatment facilities. Dredging Solutions has many years of experience in the removal and dewatering of grits and biosolids from digestors, sludge lagoons and settlement ponds.

## Mechanical Dewatering

Dredging Solutions own and operate a number of high-speed containerised centrifuge dewatering units that provide consistent mechanical dewatering capabilities for a range of projects and client specifications.

Key benefits of mechanical dewatering:

- High mobility and responsiveness to client needs
- Low site footprint
- Integrated polymer dosing system ensuring accurate polymer usage
- High level of control over the dewatering outputs
- Fast and efficient dewatering option
- Up to 100m<sup>3</sup>/hr throughput

## Passive Dewatering

Dredging Solutions provides unparalleled experience in the deployment and use of Envitube® geotextile dewatering containers to passively dewater fine silts and sludges. The process of passive dewatering involves the filling of fine meshed containers that retain fine material while allowing clear filtrate to escape. The containers continue to consolidate and dewater to the required moisture level after the filling has finished and all other equipment has been removed from site.

Key benefits of passive dewatering:

- High filling rate – up to 500m<sup>3</sup>/hr
- Less time on site – lower operating costs
- Multiple containers can be filled concurrently
- High level of control over the moisture content of the final product
- Convenient on-site storage of biosolids – odour mitigation





## MOBILE SCREENING STATION

We are proud to offer the services of our D:MAX mobile screening station, one of just two in Australia. The D:MAX is a mobile screening system that restores operational capacity to anaerobic digestors by efficiently removing grits, rags, plastics and any other oversize material from liquid waste streams. While primarily utilised at wastewater treatment sites the D:MAX can be used wherever heavy grits and oversize material may impede dewatering efforts.

## INDUSTRIAL PROJECTS

The dredging and dewatering of sediments from industrial impoundments requires specialist knowledge and equipment. Dredging Solutions have operated across this industrial space for many years and have developed effective methods for processing both the organic and inorganic by-products from a range of different industrial sources.

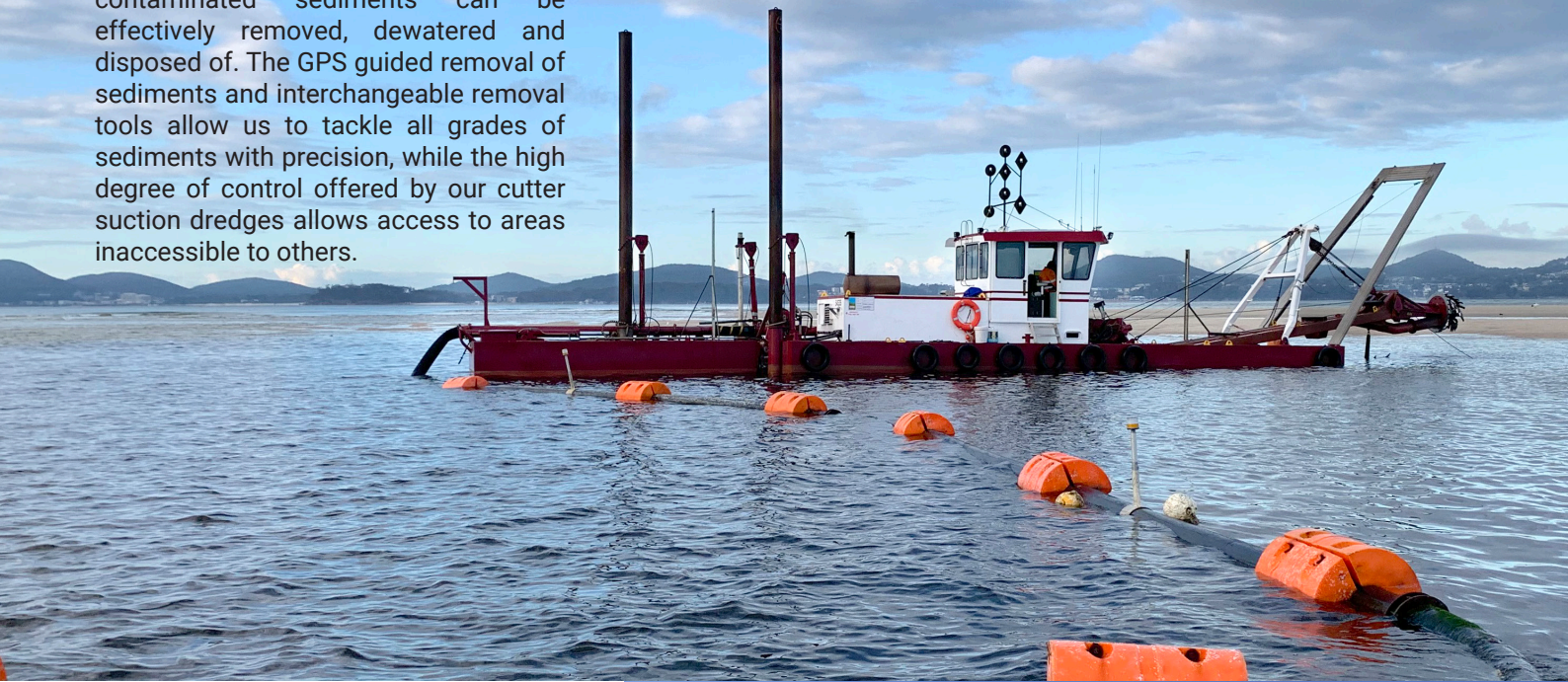
Our range of auger suction dredges are capable of easily breaking up the heavily consolidated material contained in tailings dams and process ponds and our unrivalled experience utilising Envutube® geotextile dewatering containers provides an indispensable service to primary production industries. All of the work we conduct is performed under our Work Health and Safety, Environmental and Quality management systems which are third party accredited to AS/NZS4801, ISO14001 and ISO9001.



## Silt Management

We regularly undertake silt management projects to ensure the continued operation of marinas, canals and other impoundments. Combined with the use of Envitube® geotextile dewatering containers, the build-up of fine and contaminated sediments can be effectively removed, dewatered and disposed of. The GPS guided removal of sediments and interchangeable removal tools allow us to tackle all grades of sediments with precision, while the high degree of control offered by our cutter suction dredges allows access to areas inaccessible to others.

## MARINE PROJECTS



## Beach Nourishment and Waterway Rehabilitation

The dynamic coastal zone is constantly changing as sediments are naturally eroded and deposited. Through the use of our cutter suction dredges and professional sediment transport system, we can undertake dredging projects that repair and enhance degraded beaches and waterways. Our services include:

- The removal of accreted sediments from within embayments, waterways and channels.
- The grading of sediments for sand stockpiles for redistribution and beach nourishment using settlement ponds and mechanical sand washing equipment.
- The precision placement and profiling of sediments through direct discharge, sand bypass systems and use of earthmoving plant.



# OUR EQUIPMENT



## Dredges

**Our fleet of dredges includes both manned and remotely operated dredges of different sizes allowing Dredging Solutions to respond to a range of projects and applications.**

## Auger Suction Dredges

Our fleet of 6/4 auger suction dredges comprises manned units such as our Crisafulli Rotomite 6000 and Dino6 dredges along with remote controlled Crisafulli Flumps. These dredges are versatile machines capable of harvesting and pumping a range of in-situ material from heavily consolidated inorganic sediments to lighter organic sludges and slurries at flow rates up to 250m<sup>3</sup>/hr. Running on variable speed traverse wire and cutter head winches enables solids to be dredged at precise consistencies allowing for accurate dosing of polymers essential when pumping dredged material to mechanical or passive dewatering equipment.

## Cutter Suction Dredges

Dredging Solutions two 350hp 8/6 cutter suction dredges, the “Coonawarra” and the “Ruby K” are road transportable units featuring the latest computer operated hydrographic dredge monitoring systems housed in air conditioned operator cabins. They are designed to dredge material ranging from fine silts to sand and gravel. The dredges have a draft of 0.6m with a minimum dredging depth of 1.2m and can dredge to a maximum depth of 8m. They operate off 2 hydraulic walking spuds and travelling spud carriage along with 3 anchor positioning hydraulic winches. Maximum dredge volume is ~500m<sup>3</sup>/hr.





## Transportation

Dredging Solutions owns and operates a fleet of prime movers that underpin all of our dredging operations. We independently transport all of our equipment to sites allowing us to be more responsive to clients needs while keeping costs manageable. Additionally, we manage all our biosolids transport with fully compliant chassis tipper trailers equipped with grain locks, water tight seals and roll over dust tarps.

## Air Drying

Dredging Solutions operates a Brown Bear compost aerator for fast and efficient turning and drying of biosolids. The Brown Bear compost aerator mechanically turns sludges, exposing them to the air and speeding the evaporation of moisture. This allows Dredging Solutions to dewater sludges up to 60% wt/wt for ease of reuse or disposal.

## Lagoon Mixers

Our Lagoon Mixers are custom-built pieces of equipment which enable thorough mixing and extraction of sludges within small to medium sized lagoons and ponds. They are fitted with personnel platforms and safety rails along with depth-adjustable mixers and Tsurumi submersible pumps (standard or macerator). The maximum sludge extraction rate is 125m<sup>3</sup>/hr. Lagoon Mixers are easily deployed and provide low operating costs.



# ADDITIONAL SERVICES

## Sludge Surveys

Dredging Solutions in-house team of environmental scientists specialise in undertaking surveys of sludge ponds and lagoons to determine the key indicators of treatment capacity as well as management options. By using our tried and tested survey procedures our team collect data on:

- the pond's capacity;
- the volume and density of the in-situ sludge;
- the sludge distribution across the pond.

Our dedicated in-house laboratory enables us to conduct analyses of sludge samples and accurately advise clients of the conditions at their site.

## Land Application

Through numerous projects Dredging Solutions have gained extensive experience in the application of treated biosolids to land. Our detailed understanding of contamination and stabilisations grading requirements and our partnership with primary producers ensures the reuse of these products is truly beneficial.



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