Scan to see case studies!

Algae Control Australia By WaterIQ Technologies

Agriculture **Drinking Water** **Aquaculture** **Waste Water** **HOA** **Golf** **Municipal** **Industrial**

Introducing Pulsar 4400

The Highest Precision Algae Targeting Available

Pulsar4400

4400 frequencies target most green, blue-green and some golden and red algae. The 4400 provides the highest targeting precision for high value water resources.

Pulsar3400

Designed for smaller applications with lower range for smaller bodies of water and enclosed applications -- but with the same high precision targeting of algae and biofilm.

Algae Control Australia is the leading supplier of solutions that prevent and combat algae using advanced ultrasonic technology, restoring water to its natural state quickly and sustainably without the use of harmful chemicals.

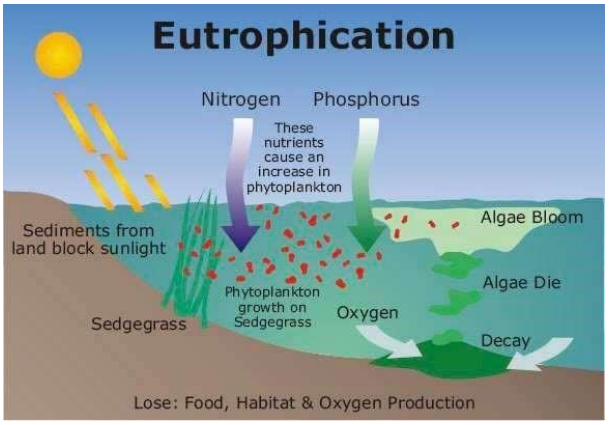
The Pulsar represents the next generation in ultrasonic defence systems designed for prevention, performance, and reliability. Our systems operate 24/7, provide high-reliability telemetry and cloud connectivity enables real-time monitoring of operational performance and water quality.

The Problem

Algae blooms are excessive growths of algae, often resulting from high concentrations of nitrogen and phosphorus coupled with warm temperatures. Other factors include water chemistry and the nature of the specific algae species.

While nitrogen and phosphorus are common nutrients in healthy water ecosystems, high concentrations can be driven by agriculture discharge, wastewater, storm water and home usage, and exacerbated by severe weather patterns that alter and disrupt normal water cycles. These conditions increase the amount of nutrients contained in the water, resulting in out of control algae growth.

Some of the most common and most damaging blooms are of cyanobacteria, otherwise known as blue-green algae. They create toxins harmful to people and pets, and blooms directly impact water quality and usage. These and other algae, including green, golden and red algae can prevent recreational use of water bodies, increase the cost of producing drinking water, disrupt wastewater processing, and impede industrial uses and agricultural irrigation



"Chemical base treatments have proven to not be effective... We looked to the latest science and technology to find new and more effective solutions. "

— HOA, Oklahoma

Why is it urgent?

Situation	Implication
Chemicals are harmful — to your water and your local ecosystem.	Most ingredients remain trade secrets and copper sulphates (CuSo4) are toxic requiring full PPE to apply. Chemical application is not compatible with environmental sustainability and certifications.
CuSo4 stays around — and accumulates and makes the water worse over time.	Chemicals can destroy beneficial bacteria and revive an algal bloom.
Most remediation is expensive — and requires on going work to clean out algae and biofilms, even if you can find the labour.	This is lost productivity for your team and costs you a bundle. Alternatives like chlorination and UV are very expensive to operate and disrupt downstream operations.
Some algae are highly toxic — to people and to pets, and to fish and aquatic life.	Cyanotoxins can harm your pets, family or team. It can also contaminate crops and cause fish kills. Golden algae kills fish and Red Tide decimates communities.
Algae disrupts productivity — it clogs pumps and drip lines in irrigation applications and creates compliance and cost issues on wastewater, drinking water, and aquaculture.	Shuts down critical water distribution and potentially spreads cyanotoxins to crops.

How it Works

- Ultrasonic sound waves at precise frequencies stimulate the resonance of simple cellular structures in the algal cell – disrupting cellular mechanisms and disabling algae.
- The algae sinks to the bottom and slowly dies without releasing toxins. No chemicals required.
- Operates 24/7 over AC or DC solar supplies.
- Cloud monitoring and remote capabilities to automate irrigation support and water quality monitoring.

For biofilms, the soundwaves simulate water turbulence, preventing the bonding and growth of anaerobic bacteria, which is the foundation for biofilms. The anaerobic layer does not bond and form.

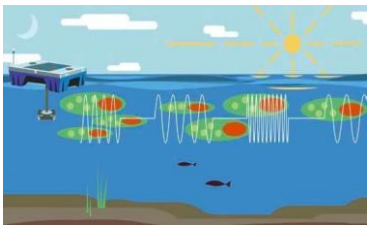
Ultrasound is complementary to methods that oxygenate the water or harness beneficial bacteria to address heavy nutrient loading and accumulation of sunken biomass. Frequently, ultrasound can resolve the issue alone.

Depending on the state of your water, a combination of ultrasound with beneficial bacteria or aeration may make sense to rapidly address your Issues.

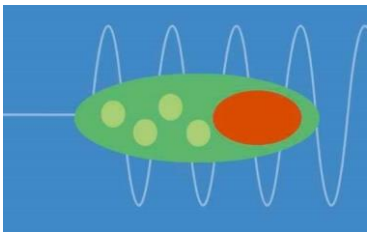
Only ultrasound directly addresses algae remediation. The power of "&" can sometimes fully resolve your issues – all without harmful chemicals.

Critical structural resonance targets specific frequencies that cause a cell or structure to vibrate — this does not require a lot of power (<30 W), but does require fine granulation and precision of frequencies given over 2 million algae subspecies.

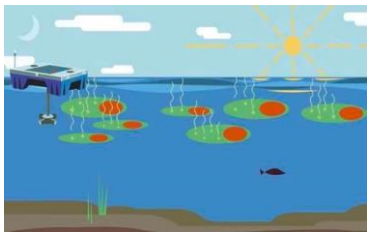
Sound waves are emitted in a 360-degree pattern, 24 Hours/day



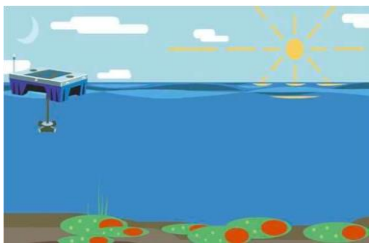
4044 discrete frequencies in two bands focused on green and. blue-green algae.



This disrupts inner cellular mechanisms, including buoyancy vesicles for blue-green algae.



Gases permeate the outer membrane walls, reducing buoyancy but not releasing toxins.



Algae sinks to the bottom where toxins are reduced over time as the cell gradually dies.

No impact on beneficial aerobic bacteria or increase in phosphorus release that can contribute to new blooms.

High Impact Use Cases

Waste Water Processing — clarifiers, settling ponds and lagoons.

- Relieve your expensive operations & management team from having to clean up biofilm.
- Prevent biofilm before it becomes a problem.
- Lower/reduce your compliance costs of downstream treatment.
- Deploys in clarifiers, settling tanks and lagoons.

Drinking Water — reservoirs and plants.

- Prevent algae before it blooms.
- Kill aglae when it blooms.
- Protect your water.

Golf, HOA & Municipal — water features and irrigation resources.

- Prevent and combat blooms — chemical free.
- Protect and enhance the value of your water assets.
- Reduce labour and chemical costs.

Agriculture

- Meet compliance on water quality requirements.
- Sustainable for organic compliance.
- Eliminate need for toxic chemical sprays on your crops.
- Improve runtime and performance of pumps, drippers and systems.
- Automate smart growing practices.

Aquaculture

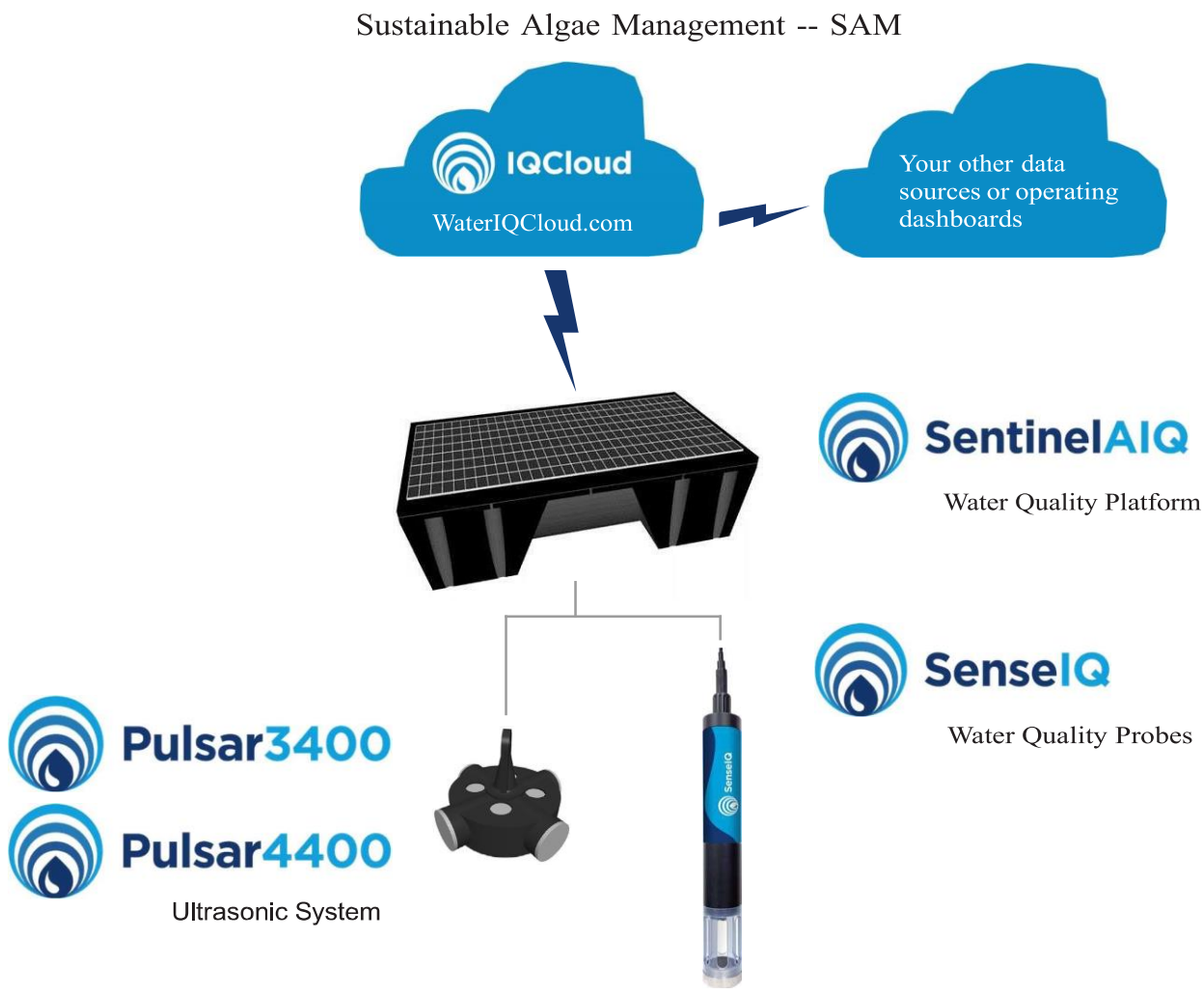
- Kill algae not fish — do not impact the ecosystem.
- Reduces golden, blue-green (cyanobacteria), and green algae — linked to overall nutrient loading (beneficial bacteria is a power augmenter)
- Also directly attacks Karenia brevis or red tide.

Our Solution Family

Algae Control Australia along with WaterIQ Technologies USA provides a comprehensive and powerful solution to manage algae — to prevent, combat and sustain improvements in algae mitigation. It is based on the Pulsar product line, a platform that utilizes advanced ultrasonic technology to disrupt and remediate algae. Our platform allows you to tailor a solution to fit your needs with options that include water monitoring, integrated water monitoring, multiple power and deployment modes, and cloud monitoring services, either integrated with your IT systems or standalone.

- Pulsar 3400 and 4400 — advanced ultrasound systems that prevent and mitigate algae blooms
- SenseIQ — water quality probes with a "just right Mini configuration" covering cyanotoxins, Chlorophyll A and Temp and a full suite including DO, ORP, pH, Conductivity and Turbidity
- Sentinel AIQ — a solar powered remote platform for the Pulsar systems and optional water quality probes. It includes a robust telemetry stack linking to the cloud with mobile integration for site support
- IQCloud — cloud platform with tiered access for the end user, resell partners and WaterIQ Technologies — to monitor and respond to the operational performance of the platform and real time data

Algae Control Australia



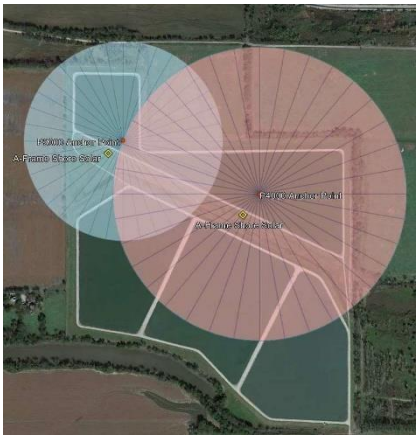
Prevent - Combat - Sustain

Options and Configurations

Attribute	Pulsar 3400	Pulsar 4400
Number of Frequencies	4400	4400
Number of Piezo Transducers/head	4 heads @ 90 degrees	4 heads @ 90 degrees
Algae targets (All units address biofilm)	Biofilm and lower range applications	Most cyanobacteria and blue green algae + selective golden and red
Green Algae Target Range	80 Meters Radial (10 acres)	150M Radial (17 acres)
Blue Green Algae Target Range	200M Radial (60 acres)	400M Radial (120 acres)
Biofilm Target Range	45M	60M Radial (2.8 acres)
Power Options	120V/240V, 24V DC, Solar	120v/240v, 24vDC, Solar, Sentinel AIQ/+
Head Options	Single Unit or Dual Units to the same power supply	Single Unit or Dual Units to the same power supply
Anti Fouling – non mechanical	Y	Y
Clarifier Option for integrated Cable	Y	Y
Custom Cable lengths	Y	Y
Standard Monitoring/Telemetry including on/off, restart, reboot, sync and measurement of operational performance and water quality metrics at set intervals	Y	Y
Water Quality Monitoring – MiniSenseIQ – Chlorophyll A, Temp – no calibration with wiper	N	Y
Water Quality Monitoring – SenseIQ8 – Basic + OPR, Ph, Do, Turbidity	N	Y
Power Consumption	30 W total	30 W total
Connectors	IP69	IP69
IQCloud Integration and Access	Y	Y

Coverage – How many do I need?

	Speed	Range
Cyanobacteria / Blue-Green Algae	Primary impact visible in 3-4 days – gas vesicles are impacted and algae settle to the bottom and die lacking photosynthesis	400 meter radially or 120 acres
Green Algae and Diatoms	Causes green algae and diatoms to die in 3-4 weeks via inner cell disruptions	150 meters radially or 17.5 acres
Biofilms	Causes anaerobic bacteria to sense false water turbulence disrupting their growth and colonization - PREVENTS GROWTH	60 meters radially or 2.8 acres



The Rest of the Story…

A-Frame Land Based Solar
Ideal power for smaller applications where local power is accessible

Land based AC/DC Powered
Shore based power supply for applications where AC power is available

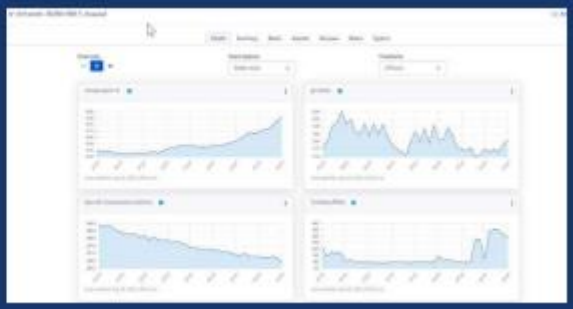
Sentinal and Sentinal AIQ+
Used in large applications and where AC power is not available and cables are prohibitive

Pulsar Float System
The standard solution for land based systems – cable linked from the shore to the float

SenseIQ
Available in a small format MiniSense and eight sensor SenseIQ8 models. We are happy to discuss other options

Systems and IQCloud

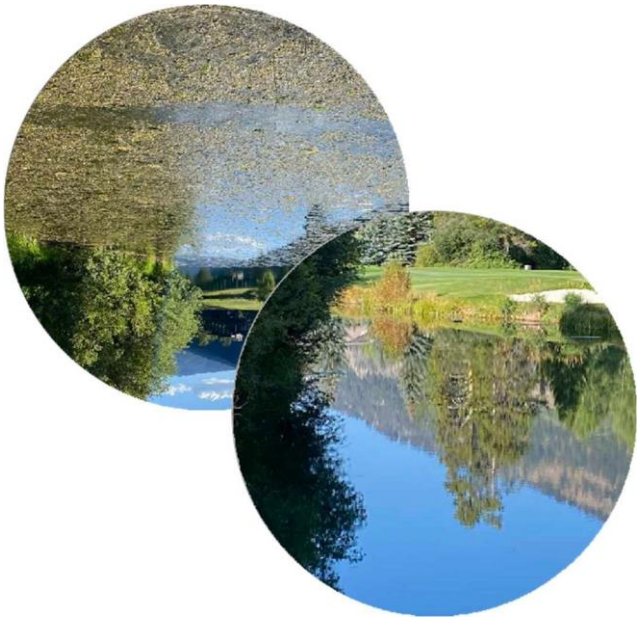
Do you need to know the health of your water to meet regulatory requirements or your environmental goals? We provide a cloud-based monitoring platform with multiple commercial options to help you manage your water assets – time is of the essence when blooms form.



Our unique offering – AKAAS – Algae Killing as a Service

Don't have the capital budget in place? We provide Algae Killing as a Service that shifts the capital spend to a lower monthly expense item, with included technology upgrades and technical support.

Efficacy and Case



Teton Pines -- Blue-Green Algae

Wilson Pond -- Spirogyra

ALGAE CONTROL AUSTRALIA

Silence the scum!

Contact us on:
Email: hello@algaecontrol.com.au
Ph: (02) 5017 9829 (goes to mobile)
Web: www.algaecontrol.com.au