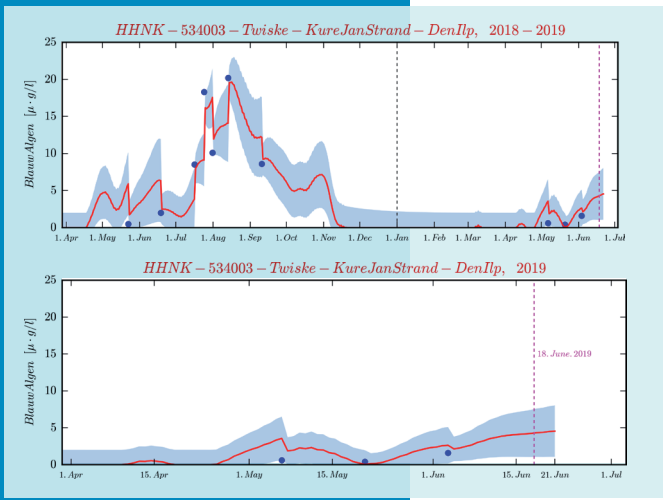
Deltares

Enabling Delta Life

AlgaeRadar predicts harmful algal blooms

Excessive blue-green algae or cyanobacteria in surface water cause, among other things, oxygen depletion and fish mortality. This leads to problems for a wide range of different users of surface waters. As a water authority, you want to take action on time to prevent this. But how can you know when and where problems will arise? You can make predictions with the AlgaeRadar based on your monitoring activities. The AlgaeRadar forecasts the emergence of blue-green algae so that you can undertake action to protect people and nature on time.



AlgaeRadar eliminates unnecessary problems for a wide range of users

AlgaeRadar forecasts make it possible to take preventive measures, such as flushing or peroxide treatment, before the problems arise. That allows you, as a water authority, to use your time and money effectively. The effectiveness of the steps you take can also then be assessed quickly with the model. Algal blooms will no longer surprise you and you will have a clear story towards people about what you have done. In the case of official bathing locations, you can provide other authorities with the algal bloom forecast alongside the water quality data.

AlgaeRadar: prevention is better than cure

But forecasting provides even more benefits.

Water for irrigation

Blue-green algal blooms are more common during warmer periods. At these times, rainfall levels are often low as well and, during droughts, there are often bans on using surface water for irrigation. The early warnings delivered by the AlgaeRadar allow the right information to be available earlier, so that there is time to look for possible alternatives.

Additional information implementation Water Framework Directive

Algae are included in the assessment of biological water quality under the terms of the Water Framework Directive (WFD). Algae have an effect on oxygen levels in the water and therefore on aquatic life. The ability to predict their growth and blooming, and hence take appropriate measures at individual locations, can result in better WFD scores.

Exploratory research for the use of the AlgaeRadar in large waters

The AlgaeRadar has been tested outside the Netherlands in Lake Trasimeno (Perugia, Italy). That involved using the historical data about the lake to produce a forecast which was then validated on the basis of in situ measurements. This is a large lake (128 km2) and the next step is to link this forecast to earth observation data to construct a 2D forecasting model. The water authority will then use this two-dimensional forecast to look for the source of the algal bloom. Besides a tourist attraction, the lake is also an important nature area for passing migratory birds. Deltares learned here how the AlgaeRadar can also be used efficiently for large waters.

How the AlgaeRadar works

The AlgaeRadar is a relatively inexpensive software tool that uses data that are generally already available. It can also be easily tailored to your own water management system. The AlgaeRadar can be made operational within a few days and you can then predict algal blooms. It can also be used to test measures. As soon as you have the new monitoring data, the computing time for a new forecast is just a few seconds.

Would you like to try the AlgaeRadar yourself?

If you have specific questions about problems with algae or if you want to test an AlgaeRadar for your surface water, please contact us.

More information

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