

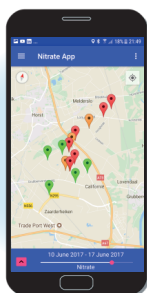
NITRATE APP

Deltares launched the free Nitrate App in 2016. The app reads and interprets nitrate test strips accurately, displaying the measured concentration immediately and giving users the option of sharing the result. Shared results are immediately visualised on a map in the app and online. Since the launch, we have seen an increase in the ways the app is used.



Best nutrient management practices

The Nitrate App was originally designed to allow farmers to measure nitrate concentrations on their own farms. It was hoped that this would encourage farmers to talk to specialists about the best management practices (BMPs) for nutrients on their farms. Several groups of farmers have recently started to use the Nitrate App and to discuss their results with each other and with the authorities.



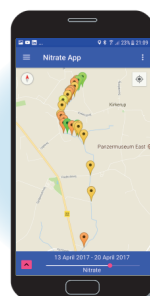
Nitrate concentration routings in catchments

Users can generate a map within a day showing nitrate concentrations at the catchment scale to identify nitrate loss hot spots. Distinct point sources were found in several routings in agricultural catchments, for example at small-scale plants for processing manure. These routings proved that the Nitrate App can help water managers to target conservation practices more accurately on areas with the highest nitrate concentrations and loads.



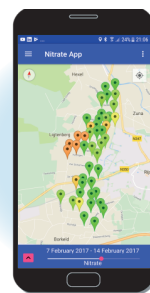
Screening the quality of drinking water

Approximately 250,000 people using 10,000 domestic drinking water wells in the Salinas and San Joaquin valleys in California are at risk of excessive exposure to nitrates (<http://groundwaternitrate.ucdavis.edu/>). The California State Water Resources Control Board, and the Central Coast Water Board, have been working on a pilot project with the Nitrate App to determine how accurate it is by comparison with laboratory results as a screening tool for drinking water quality. Eighty wells in the San Luis Obispo County area have now been sampled and tested for the pilot project.




Illegal spills

Several water authorities in the Netherlands decided to use the Nitrate App to locate illegal spills. In the Langeveldse Loop catchment near Horst, a drain from a glasshouse with $\text{NO}_3\text{-N}$ concentrations of over 200 mg/l was located using the Nitrate App.



Flow route contributions

Is nitrate mainly transported to a stream through subsurface drains or through groundwater? A three-hour screening programme was completed on 19 April 2017 in the Salto river in Slagelse, Denmark. The nitrate concentrations in drainage effluent were significantly higher than in-stream concentrations.

Other current uses are the collection of extra measurements (including pH and NH_4) in the National Monitoring Network for the Evaluation of the Manure Policy in the Netherlands, and several educational initiatives in cooperation with schools and universities. 

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Further reading:

www.deltares.nl/nitrate-app