Home Water Sensors

CATTfish & Flamingo provide a simple and easy way to track the water quality at home or in your local river. Try one now for peace of mind and long term tracking of your family's water.

How does it work?

About the systems »

Introduction to CATTfish

Setting up your CATTfish

Introduction to FlaminGO

Why CATTfish & Flamingo?

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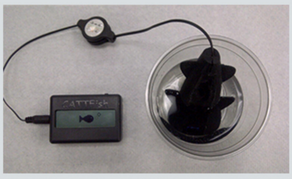

CATTfish Starter Kit $99

FlaminGO Starter Kit $99

CATTfish Replacement Battery $14

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CATTfish & FlaminGO

The new way to track your water quality at home.

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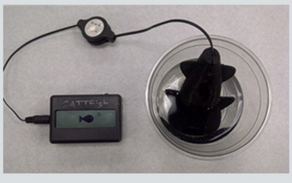

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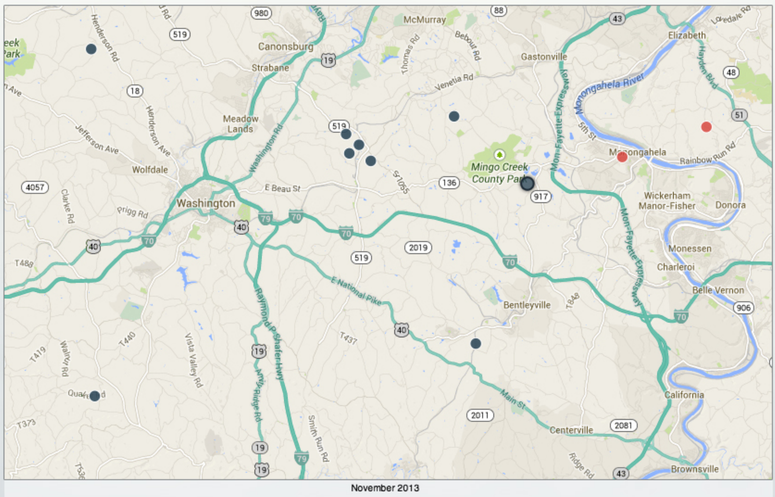
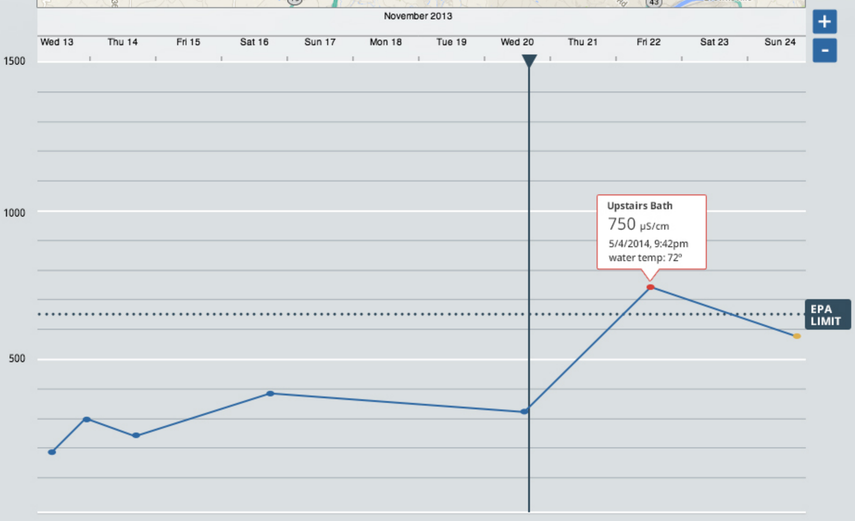
Public Water Quality

Click a dot on the graph to see CATTfish or Flamingo data for each device





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About Us

CATTfish® and FlaminGo® were created at Carnegie Mellon University. In 2014 a new venture, MellonHead Labs, was formed to bring these two innovative environmental sensing products to market. The sensors were soon adopted by citizens and industry to track water quality changes over long periods of time and large geographic areas. Cloud based visualization of large data sets allows easy interpretation of results.

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Devices


CATTfish

FlaminGo is a real-time conductivity sensor, data logger, and mesh networked device designed to enable convenient monitoring of well and watershed systems with high temporal frequency and high spatial density. Conductivity of water is an indirect measure of Total Dissolved Solids (TDS), which is a frontline indicator of water quality. FlaminGo can collect and store baseline data for long periods with no external power source, autonomously in rugged conditions.

FlaminGO

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A FlaminGo water sensor collects conductivity and temperature readings from rivers, streams, holding ponds, and other water sources. Data is collected at a high frequency, allowing the detection of events that are invisible to other types of sensors. The FlaminGo Sensor is designed for field deployment and can be powered for up to a 12-months period on a single set of alkaline batteries.
Using Low-Power Wireless communication, a FlaminGo Gateway collects the water quality data when it is in range of the Sensors. A FlaminGo Gateway can take the form of a few different devices, including hand-held laptops, automotive wireless receivers, or the compact paired receiver. Once a dataset has been collected it is uploaded to the central server over 3G/4G mobile connection.
A water quality dataset that has been stored by the central server can immediately be visualized in the cloud. The FlaminGo Viewer provides a table for finding Sensors by name, and a map for to locate by geographic location. The complex graphing at the top of the Viewer displays fluctuations of conductivity, temperature, and TDS over time. The graph can be formatted enabling visualization at the minute, day, or month-scale.

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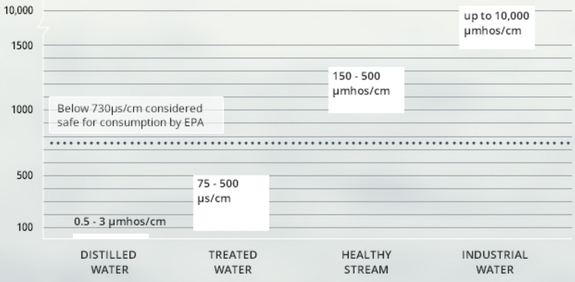
Water Quality Measures



Conductance/Total Dissolved Solids:

What is conductivity and why is it important?
Conductivity is a measure of the ability of water to pass an electrical current. Conductivity in water is affected by the presence of inorganic dissolved solids such as chloride, nitrate, sulfate, and phosphate anions (ions that carry a negative charge) or sodium, magnesium, calcium, iron, and aluminum cations (ions that carry a positive charge). Organic compounds like oil, phenol, alcohol, and sugar do not conduct electrical current very well and therefore have a low conductivity when in water. Conductivity is also affected by temperature: the warmer the water, the higher the conductivity. For this reason, conductivity is reported as conductivity at 25 degrees Celsius (25 C). CATTfish has been calibrated at this same industry standard.

The basic unit of measurement of conductivity is the mho or siemens. Conductivity is measured in micromhos per centimeter (µmhos/cm) or microsiemens per centimeter (µs/cm). Distilled water has a conductivity in the range of 0.5 to 3 µmhos/cm. Water treated centrally ranges from 75 to 500 us/cm – this is the scale used by CATTfish and FlaminGo. The conductivity of rivers in the United States generally ranges from 50 to 1500 µmhos/cm. Studies of inland fresh waters indicate that streams supporting good mixed fisheries have a range between 150 and 500 µhos/cm. Conductivity outside this range could indicate that the water is not suitable for certain species of fish or macroinvertebrates. Industrial waters can range as high as 10,000 µmhos/cm.

Sampling and equipment Considerations
Conductivity is useful as a general measure of water quality. Each water source tends to have a relatively constant range of conductivity that, once established, can be used as a baseline for comparison with regular conductivity measurements. Significant changes in conductivity could then be an indicator that a discharge or some other source of pollution has entered a water source.

Conductivity is measured with a probe and a meter. Voltage is applied between two electrodes in a probe immersed in the sample water. The drop in voltage caused by the resistance of the water is used to calculate the conductivity per centimeter. The meter converts the probe measurement to micromhos per centimeter and displays the result for the user. NOTE: Some conductivity meters can also be used to test for total dissolved solids and salinity. The total dissolved solids concentration in milligrams per liter (mg/L) can also be calculated by multiplying the conductivity result by a factor between 0.55 and 0.9, which is empirically determined (see Standard Methods #2510, APHA 1992).

For more inforamtion visit: water.epa.gov

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Contact Us

Send us an email:

For more information about CATTfish and FlaminGO products, press inqueries, or partnership opportunities send us an email.

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