



Campbell
S C I E N T I F I C TM

Flood Warning Solutions

Flexible | Intuitive | Reliable



environmental



Consistent, reliable data you can trust for years



World-Class Flood Warning Systems

Flexible | Intuitive | Reliable

Flooding is one of the most consequential weather hazards worldwide, affecting more than 68 million people each year and causing well over 40 billion USD in economic damage¹. Flood events are becoming more frequent¹, with more people than ever living and building in flood-prone areas². The encouraging news is that the number of people affected by flood disasters globally has decreased significantly over the past 10 years thanks to better early warnings and stronger disaster management³. This reinforces the need for robust, reliable flood warning systems that support timely, coordinated decisions.

Flood warning systems come in many forms to match your operational requirements, from simple, cost-effective Internet of Things (IoT) monitoring to automatic weather stations and critical real-time ALERT/2 flood warning networks. Campbell Scientific brings more than 50 years of experience designing, developing, and deploying dependable systems to support flood programs of all sizes.

Everyday operational benefits of early warnings include:

- More lead time for protective actions and evacuations
- Better road, culvert, and bridge closure decisions
- Smarter pump, gate, and reservoir operations
- Reduced downtime at critical facilities
- Stronger, faster incident communication

Select a system aligned to your risk, response protocols, and maintenance capacity to ensure alerts reach the right teams, on the right channels, at the right time.

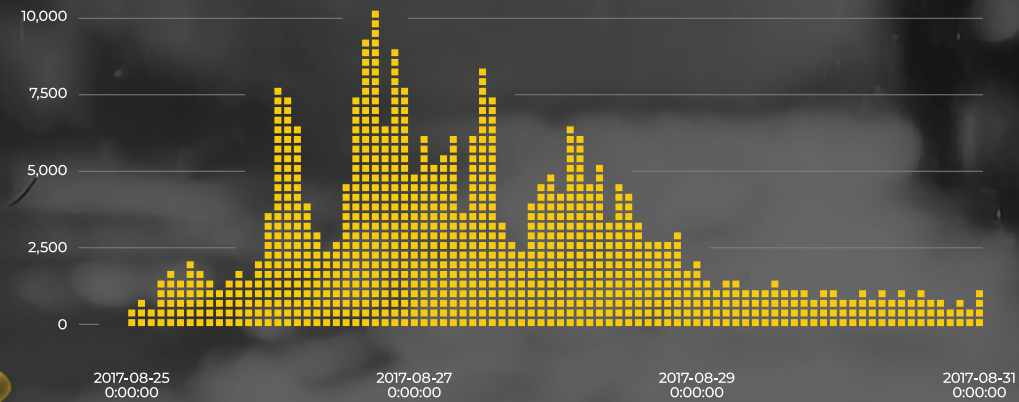
1. "Dat - The International Disaster Database." EM. 2024. <https://www.emdat.be/>.
2. "Research Shows More People Living in Floodplains - NASA Science." NASA, January 31, 2026. <https://science.nasa.gov/earth/earth-observatory/research-shows-more-people-living-in-floodplains-148866/>.
3. "Weather-Related Disasters Increase over Past 50 Years, Causing More Damage but Fewer Deaths." World Meteorological Organization, March 16, 2023. <https://wmo.int/news/media-centre/weather-related-disasters-increase-over-past-50-years-causing-more-damage-fewer-deaths>.



Flood Warning Solutions for Every Need

Each Campbell Scientific flood warning solution is a complete, end-to-end system combining high-quality sensors, reliable telemetry, powerful software, and expert technical support.

Whether you deploy a single IoT site or a regional ALERT/2 network, our solutions are designed to scale seamlessly as your monitoring needs grow. From initial installation through long-term operation, our integrated hardware and software platforms and global service network ensure consistent performance, simplified management, and dependable data you can trust when it matters most.



During Hurricane Harvey, Campbell Scientific weather stations generated as much as 10,000 data transmissions per hour during the storm, with over a 99% success rate.



Quick-Deploy IoT Solution

For rapid deployment or at sites where simplicity and speed are key, our IoT-based solution uses the compact Aspen™10 edge device paired with sensors such as the RainVue™10 rainfall gauge or RangeVue™ series non-contact water-level sensor.

- The Aspen 10 is a complete, plug-and-play edge device with data logger, modem, and solar/battery support designed to go in the field with minimal fuss.
- With RainVue 10 or RangeVue sensor integration, you get high-accuracy precipitation or water-level data in remote or flood-prone zones with minimal infrastructure.
- Real-time cloud connectivity via our CampbellCloud™ platform means you can view data, monitor status, and deploy alerts quickly even before a full network is built.
- Communications over cellular means that the data can be accessed from anywhere with an internet connection.

Why Choose an IoT Solution

- Get monitoring stations in place fast, so you can gather data and issue alerts sooner.
- With a low cost per site, you can deploy more widely for denser coverage.
- These are ideal for initial network rollouts, supplemental stations, tributary catchments, or temporary sites during construction projects.



Automatic Weather Stations (AWS)

For applications requiring a broader hydrometeorological picture—including rainfall, wind speed, relative humidity, air temperature, and visibility—our AWS solutions provide the depth and precision you need.

- Our AWS systems are robust, sensor agnostic, and designed for long-term deployment in harsh environments.
- These stations are based around our trusted and powerful data logger cores and can deliver the data you need over a range of communications protocols.

Why Choose an AWS Solution

- This solution gives you the full environmental context around flood events beyond just rainfall or water depth, enabling better situational awareness and predictive insight.
- AWS support meteorological, hydrological, and terrain data stream integrations to refine warnings and event thresholds.





ALERT/2 Protocol Flood Warning Network

For mission-critical flood warning systems where reliability, extensibility, and protocol compliance matter most, our ALERT/2-based offering delivers high performance and flexibility.

- The AL200X (and related ALERT/2 interface modules) supports a wide array of sensor types and configurations, focusing mainly on VHF communications.
- Designed for rugged field use with modular packaging (backplate, enclosure, or canister), there is no exposed circuitry, which allows for easier servicing and compatibility with existing systems for drop-in replacement.
- The system is built for flood warning networks: large station counts, high data-rate transmissions, and compatibility with existing ALERT networks or full upgrades.

Why Choose an AL200X-Based System

- You can use a phased approach to upgrade legacy systems to ALERT2 while preserving investment, so you don't have to replace everything at once.
- Experience low life-cycle cost thanks to the modular, service-friendly design, high sensor support, and future-ready communications architecture.

Choosing the Right Solution for You

- Use an IoT solution when you need rapid deployment, low cost-per-site, and targeted monitoring of key locations.
- Move to a full AWS solution when you need comprehensive hydrometeorological monitoring across a catchment or region and want to support not only flood warning but other relevant parameters as well.
- Use an ALERT/2 solution for comprehensive flood warning systems communicating over VHF—legacy system upgrades; certification-based networks; or when you must guarantee high-availability, protocol-compliant flood warning delivery.



Data Management

CampbellCloud can receive and display all of the desired content. Campbell Scientific will set up each site with the system owner. Inside the cloud service you can view and analyze your incoming and outgoing data.

Data migration services featured in CampbellCloud allow you to pull over your older historical data with certainty. The automatic reporting feature will send out predefined reports without you needing to manually inquire.



Network Management

There are quality assurance and quality control capabilities that make decisions to determine the validity of the data received. Then, alerts and notifications provide decision-makers with critical information.

Metadata and life-cycle management tools determine functionality and network health. Network and SLA monitoring check the health of the network and keep track of needed items. Sign-in features create different levels of access and allow for added security.



Powered by AWS

CampbellCloud integrates with industry standard cloud platforms, including AWS and Azure, through its included API.



CampbellCloud™



environmental

Campbell Scientific, Your Flood Warning Partner

What's it like having Campbell Scientific as your flood warning partner? For the project planning and proposal, clients work with us to develop a scope of work that is in the best interest of both parties. Our experts will work with you to develop a schedule of deliverables to track the progress of the project.

During the project execution phase, we will work with you on site identification, site surveys, network design, project management, and reporting. Your Campbell Scientific partners can continue with you through inspection and testing (both at the factory and on-site), installation and commissioning, training, and documentation provisioning. This is to be laid out in the scope of work.

Our personnel can also assist with support and maintenance. Depending on the arranged scope of work, we can provide data availability and up-time guarantees. Regular software updates will be included, and additional features can be arranged. Preventive network health monitoring helps both parties know when to perform any applicable maintenance.

In case of unexpected service calls and repairs, Campbell Scientific employees can come and make fee-based repairs to the network. All work done to the system and health monitoring will be reported to you. Free client call-in service is provided during our normal business hours.



Campbell Services Overview

We are here to help every step of the way, establishing clear communication from the start. We come on-site to gather information and provide tangible recommendations about each site location.

We will create a plan for the network and supply the design work to the client. Campbell Scientific can take care of licensing the VHF frequencies that can be used by the client, then install the units and provide a site acceptance test (SAT) upon completion.

We will conduct on-site scheduled maintenance, unscheduled service calls, and other paid-for maintenance trips not included under routine maintenance or the service-level agreement. We can provide installation services for additional sites to an existing network and guaranteed data availability and uptime rates.





As a trusted provider of measurement solutions since 1974, Campbell Scientific has delivered the information that helps mitigate severe weather casualties; aids scientists in gathering data to assist in the understanding of climate change and other human-made environmental impacts; and supports countless organizations, institutions, and national agencies in providing more efficient services to their people. Our instrumentation hardware is known to be the best in the business. Our software services provide an unrivaled level of insight. Our project delivery expertise combines both to deliver a unique end-to-end solution capable of changing the world.



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