Environmental Support Services

Among the wide array of environmental services that Windward provides—from risk assessments to stormwater monitoring to NRDA compliance—there are certain support services that are common to almost all of these tasks. Field support, database management, and geographic information system (GIS) capabilities are essential to nearly every environmental challenge, large or small, simple or complex. Windward understands that superior support services are crucial to the quality of an environmental effort, so we ensure that we are able to not only meet the support service needs of our client, but to perform these services efficiently, accurately, and cost effectively.

Database Management

Windward has an extensive background in laboratory coordination and the management of large datasets. Our years of experience in planning and implementing complex data collection programs have provided our staff with a comprehensive understanding of the issues associated with managing diverse environmental information. Using EQuIS software as a base, Windward can customize its environmental data management system to meet the specific needs of individual projects and ensure that end users receive project data quickly and efficiently.

In addition, Windward has developed specialized tools to allow for the efficient reduction of environmental data. These tools include flexible reporting options that enable data delivery in a wide variety of formats, letting us provide data to clients in forms that are compatible with their environmental data management systems. Windward is also well versed in the Washington State Department of Ecology's Environmental Information Management (EIM) database, and has developed in-house software for uploading data directly from EQuIS to EIM. Windward's experience and specialized tools streamline the data management process and provide our clients with added value in the form of reduced data management costs.

Field Support

Windward has extensive experience conducting field survey and sampling efforts in both upland and aquatic environments for a variety of media, including water, soil, sediment, and biota. We have collected fish, benthic invertebrate, and small mammal tissue for chemical analysis; collected benthic invertebrates as part of community surveys; and performed macroinvertebrate sampling to determine the presence of fish prey resources. These sampling efforts have occurred under a variety of environmental conditions and ranged from several days' work for a 2-person field crew, to 6 months of continuous sampling for more than 20 people in half a dozen boats. Windward has prepared planning documents, developed sampling protocols, established sample holding procedures, overseen permit applications, created restricted zones, set up and run field laboratories, coordinated with agencies, and overseen hazardous materials handling and disposal.

Windward staff have conducted field surveys and monitoring as part of site characterization, permit compliance, and habitat restoration efforts. Vegetation surveys have involved the identification of plant community types, estimation of vegetation abundance and dominance, close observation for the presence of non-native or invasive species, and general assessment of plant vigor. We have also conducted surveys to document the presence of bird, amphibian, reptile, and mammal species, then compared the findings to regional biological community data.

Geographic Information System

Complex site investigations can generate a staggering amount of data. Windward's use of GIS software offers an innovative, cost-effective way to translate those data into valuable tools for the decision-making process. GIS services include spatial database design and management, spatial analysis, decision-support and predictive modeling, computer-aided design (CAD) integration, and high-end digital cartographic production. Our GIS analysts can interpret, quantify, and contextualize complex datasets for a wide variety of analyses—from identifying potential restoration alternatives to quantifying relationships between environmental factors and human health trends.

In addition, Windward's GIS analysts can integrate information on historical land use and contamination with data on existing habitat conditions, site infrastructure, and toxicity testing results. This capability enables the development of realistic study design strategies, and the identification of areas where additional data collection is warranted. We can also use GIS to provide spatial variables for risk assessment models for use in mapping potential cleanup scenarios. This type of conceptualization allows our clients to visualize the geographic distribution of impacts under different scenarios and assumptions, and potentially detect patterns that might not otherwise be discernible.