# Stakeholder Perspectives

Geospatial analysis can provide answers to many stakeholder questions about site remediation. When a contaminated site is characterized, sampling is conducted to measure contaminant concentrations and to evaluate the progress of a remediation project. How do project managers and stakeholders know if enough samples are being taken? Are samples being taken often enough? Are the sample positions too far apart? Or are they too close together, resulting in time and money being spent on unnecessary sampling? Geospatial methods can establish whether the samples are providing a valid picture of the extent of contamination and can also determine whether site remediation is effective.

Stakeholders are directly affected by environmental contamination and thus have a keen interest in the methods used to evaluate and remediate the site. These methods include the geospatial methods used to evaluate sites and to plan and optimize monitoring and remediation. When geospatial methods are used to develop CSMs or to manage monitoring and remediation, the regulator or project manager must communicate clearly to the stakeholders the advantages and disadvantages of the geospatial analysis. It is essential to have open and honest public discussion of the technical and operational issues.

Stakeholders include affected tribes, community members, representatives of environmental and community advocacy groups, and local governments (ITRC 2012a; ITRC 2012b). Stakeholders are generally open to the use of innovative technologies and approaches, particularly if these technologies help to improve CSMs, accelerate the remediation process, reduce costs, test the effectiveness of a remediation process, and lead to faster solutions to the problem. Affected stakeholders are not limited only to adjacent property owners and their tenants, employees, and guests. Those who reside downgradient of a site, for example, may be affected even if they are not in the immediate vicinity of the site.

## Tribal Stakeholder Concerns

Tribal stakeholders have unique concerns. Tribes may have treaties or other pacts with the federal government that grant them fishing, hunting, or access rights in areas that are not necessarily near their present-day reservations. These agreements are an especially important consideration when identifying affected tribes. Note that individual states and the Native American community recognize certain tribes that the federal government does not recognize. Additionally, at some sites tribes have regulatory oversight and thus play a major regulatory role that is different from that of other stakeholders.

Tribes are sovereign nations and should be approached with the proper protocol. For example, tribal leaders should be addressed with their appropriate title (such as Chairman, Chairwoman, Chief, Councilman, or Councilwoman) and be treated with the respect accorded equivalent heads of state or members of the federal legislature. Each tribe, however, has its own customs and protocols, and it is important to learn the specific protocols before contacting the tribe. A list of federally recognized tribes is available from the National Conference of State Legislatures (NCSL) (NCSL 2016a). For state-recognized tribes, refer to the individual states, because current lists of state-recognized tribes are incomplete. NCSL also maintains a partial list of tribes that states recognize (NCSL 2016b).

Tribes who practice traditional lifestyles may be disproportionately affected by environmental contamination. For instance, those who practice subsistence fishing may be more affected than the general population by contaminants in water. People who practice the sweat lodge ritual may be more likely to be affected by inhalation of contaminants in water.

## General Stakeholder Concerns

Stakeholders may have questions about geospatial methods, particularly regarding the validity of sampling, site characterization, and remediation methodology. The large volume of data that might be generated for geospatial analysis must be clearly conveyed in a useful format so that it has value to the public. Stakeholders must be able to use this information to understand what chemical constituents are being sampled and analyzed with geospatial methods. This information can then empower stakeholders to make an independent determination about the success or failure of a remediation process or monitoring plan.

In some situations, geospatial analysis may offer substantial cost saving in monitoring and data analysis. Stakeholders typically have supported cost-saving technology—if the evidence supports its effectiveness. Stakeholders generally appreciate the availability of extensive, but not excessive, monitoring data that a geospatial analysis can provide.

Project managers and regulators must make a convincing case to the stakeholders that the geospatial analysis is not being used to mask or understate problems or to exaggerate the likely effectiveness of a remediation approach. These managers should listen to stakeholder issues, needs, and concerns and explain the geospatial analysis clearly and accurately. Project managers and regulators should communicate early and often, throughout the duration of the remediation project.

**Communicating with Stakeholders at the Stringfellow Superfund Site**

*At the Stringfellow Superfund Site located in Mira Loma, CA, stakeholders include local residents and also downgradient communities, including Orange County. Receptors include drinking water sources and agricultural irrigation. For this orphan site, the State of California has assumed responsibility and therefore is considered the responsible party.*

*The quarterly Stringfellow Advisory Committee (SAC) meetings provide a formal, regularly scheduled venue for communication about site plans and progress by the responsible party to community stakeholders. Details of stakeholder questions and concerns are available in the SAC meeting minutes. These minutes are posted on the State of California Department of Toxic Substances Control's (DTSC)(Control 2007) EnviroStor website. The questions and concerns expressed by the Stringfellow stakeholders and their representatives have included questions about the applications of the statistical methods, rather than questioning the geospatial approaches.*

Stakeholders have valuable information about site characteristics and history that can enhance the evaluation process and improve the quality of remediation and monitoring decisions. Decisions involving monitoring and remediation, including implementing geospatial methods, must account for current site use and the community's planned site. If mutual trust and respect have been established early on through open, honest communication, then consensus can be reached on effective solutions. Problems can be addressed faster when decisions have earned the support of the stakeholders.