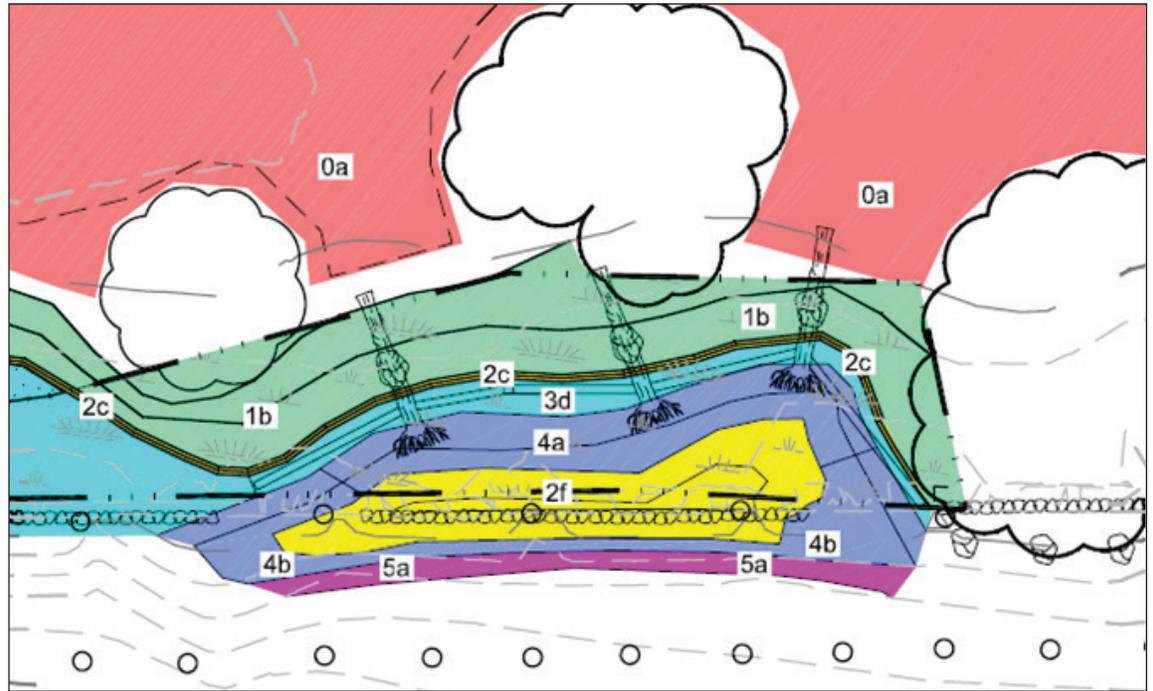


ECOLOGICAL SERVICES: INTEGRATING ECOLOGY AND ENGINEERING

By Scott Ault

Ecology and engineering may seem like an odd couple, but integrating these disciplines effectively is vital for timely, cost-effective completion of our clients' projects in the United States and Canada.

Under existing federal, state/provincial, and local regulations, few development projects can complete the siting and permitting process without ecological studies to characterize and manage the potential effects of the project on natural resources. Major regulations in the United States that drive these processes are the Clean Water Act, the Endangered Species Act, and the National Environmental Policy Act. Natural resource management, or what we at Kleinschmidt call "Ecological Services," is the integration of natural resource sciences and civil engineering to evaluate



Bioengineering design of shoreline wetland and protected pool habitat

the effects of human interaction with the environment and design approaches to avoid or reduce adverse environmental effects. Conducting studies, completing

permitting, and developing mitigation to minimize effects in response to these regulations has grown into a multi-billion

dollar market for environmental consulting and engineering firms in the United States.

Kleinschmidt's Ecological Services group has evolved over the last 25 years from a handful of natural resources scientists and permitting specialists who mostly supported our Federal Energy Regulatory Commission (FERC) relicensing efforts, to a staff of 30

professionals who provide a full suite of services related to natural science, permitting, and ecological engineering. Our growth has been a deliberate response to the needs of the large market for ecological services in the United States and Canada. Expanding our presence in this market has been challenging at times due to poor economic conditions that have limited development of projects and to competition with "mega-firms" that claim to have it all. We have overcome these challenges and advanced steadily in market share by building relationships with potential clients and regulators who are decision makers, teaming with strategic partners who offer specific expertise that enables us to provide comprehensive service to our clients, articulating what

What are Ecological Services?

Typical projects include evaluating the potential effects of water withdrawals and water-use projects, linear developments, dam removals, and large-scale land-use projects on aquatic and terrestrial resources. Within these broad categories, specific projects often include:

- Evaluating and mitigating impacts on rare, threatened, and endangered species
- Designing and implementing habitat improvement and stream restoration
- Developing fish passage including natural bypass channels
- Preparing watershed management plans
- Identifying and implementing best management practices for "green" stormwater management



ECOLOGICAL SERVICES: INTEGRATING ECOLOGY AND ENGINEERING

By Scott Ault

differentiates us from the mega-firms, and — above all else — building a reputation for ensuring rigorous science that speaks for itself.

Growth in our technical expertise is the result of applying existing skill sets to new and different projects, hiring new employees with specific skill sets our clients need, and encouraging employees to pursue advanced education in their technical disciplines. Our staff offers

both broad coverage of the ecological sciences and specialized experts who can provide unique services, such as designing spawning beds for lake sturgeon or developing a wetland planting plan that accounts for the influence of water-level fluctuations on shoreline plants in the project area. Our goal is to grow aggressively over the next 5 years by increasing the size of our staff and further expanding our recognition in the marketplace as a firm that

offers quality services. As in the past, we will continue to seek opportunities that enable us to get involved in new and different projects that pique the varied interests of our diverse staff.

The hallmark of our work is the ability to address interdisciplinary projects that require integrating aquatic and terrestrial sciences, geographic information systems (GIS), permitting, and ecological engineering comprehensively. Over the past 15 years we

have conducted a number of large, interesting projects that have enhanced our ability to coordinate and integrate resources across the technical disciplines encompassed within ecological services. Some of these projects are highlighted in this Benchmark, and we invite you read about some of the exciting projects we are involved in.

**For more information,
contact Scott.Ault@KleinschmidtGroup.com**