Understanding natural processes is crucial to appropriately and safely letting nature clean up toxic groundwater. As many in the field are finding, we still have a lot to learn about nature's self-healing.

"Although natural attenuation is becoming more accepted, there is still lots of skepticism—and I think there should be," said Libelo. "It's frightening to think that people who don't understand [natural remediation] are trying to use it, and they're making mistakes. It's a good technique, but we need to use it appropriately." Natural attenuation and groundwater remediation will be discussed at sessions **H21A** and **H22C**.—*Elaine Friebele*

FORUM

Comparing the Hydrology Journals

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How do the various water resources journals stack up? This question is frequently asked at scientific meetings, within promotion and tenure committees, and around graduate student lunch counters. Several years ago G. Dagan (*Eos*, June 20, 1989) published a very useful report of findings by the Institute for Scientific Information (ISI), which publishes annual reviews of scientometric indices. I read his report just after receiving my Ph.D., and the numbers greatly influenced my choice of where to publish my dissertation. For those graduate students and water resources professionals who may benefit from the latest figures, I report my compilation of the 1995 impact factors from ISI.

The impact factor is a measure of the frequency with which the "average article" in a journal has been cited in a given year. Thus the impact factor is computed by dividing the number of all current citations of papers published in a particular journal during the previous 2 years by the number of articles that journal published in those 2 years. The impact factor is therefore a measure of quality and influence of a publication in its field. It tends to discount the advantage that large, frequently issued, older journals have over smaller, less frequently issued, newer journals. It is important to remember that citation habits differ among fields and that comparing disparate journals is problematic. With this qualification in mind, it is nevertheless useful to compare *Water Resources Research* with journals in neighboring areas. The table below is based on numbers extracted from the *ISI Journal Citation Report 1995*. It covers some of the most useful and popular journals from hydrology and water resources, soil science, and geomorphology.—*Jeff McDonnell, College of Environmental Science and Forestry, State University of New York, Syracuse*

Journal	Impact Factor
Water Resources Research	1.639
Soil Science Society of America Journal	1.338
Groundwater	1.210
J. Contaminant Hydrology	1.155
Journal of Hydrology	0.848
Soil Science	0.765
Hydrological Processes	0.750
Water Resources Bulletin	0.671
Catena	0.575
Advances in Water Resources	0.564
Hydrological Sciences Journal	0.392

Chapman Conference Delves into the Significance of Rock Glaciers

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Rock glaciers are rubble-covered, flowing mixtures of rock and ice common in many alpine and polar regions. They even may occur on Mars. Although rock glaciers are important agents of geomorphic modification of the landscapes in which they occur, they are less well studied than their "true" ice-glacier cousins, and many questions surround their origin and development. The scientific benefits of answering these questions may be considerable, in part because rock glaciers could provide accessible archives of local climatic conditions throughout much of the last 10,000 years, and possibly extending back much longer in some settings.

A Chapman Conference on the geomorphic and climatic significance of rock glaciers was sponsored by AGU at the Northwest College Field Station in the Absaroka Mountains near Cody, Wyo., August 23–28, 1996. Despite more than 40 years of study, surprisingly little is understood about rock glaciers. Even hypotheses about their genesis are controversial: one view holds that regardless of their similar appearance and distribution, rock glaciers are distinct from true glaciers and strictly result from periglacial processes [*Barsch*, 1996]; the other holds that the formation of rock glaciers involves a continuum of processes from glacial to periglacial [*Potter*, 1972]. The conference was convened to help resolve the issue of the origin of rock glaciers, to highlight the significance of rock glaciers as geomorphic systems, and to identify areas for future research.

The meeting site was chosen for its proximity to Galena Creek, where the most-studied rock glacier in North America is located. The conference brought together 35 participants, including glaciologists, geomorphologists, geochemists, and planetary scientists for presentations and a 2-day field excursion to Galena Creek.

In 1959, C. Wahrhaftig and A. Cox developed the idea that rock glaciers in the Alaska Range are composed of coarse rock debris cemented by interstitial ice primarily derived from refrozen meltwater or springwater. Several outspoken researchers have expanded this view, concluding that all rock glaciers are exclusively permafrost phenomena [e.g., *Haeberli*, 1985]. Relying mainly on geophysical observations—for example, P-wave velocities, geoelectric soundings, radio-echo soundings, and near-surface thermal conditions—these workers argue that rock glaciers are non-glacial, and that a continuum between rock glaciers and glaciers does not exist. In 1996, Barsch stated that "the model of the so-called (glacial or) ice-cored rock glacier has to be abolished" because geophysical measurements demonstrate that "it does not exist at the type locality" (Galena Creek). However, it has not yet been rigorously demonstrated that such geophysical measurements uniquely distinguish between permafrost ice and debris-rich glacier ice, or that the genesis of ice in rock glaciers is solely non-glacial. Indeed, Wahrhaftig himself in later years agreed that some rock glaciers were simply debris-covered glaciers: "I am now inclined to agree that most... tongue-shaped rock glaciers are probably mainly ice with a mantle of rock-fall debris ca. 3 m thick," he wrote in a personal communication in 1993.

The participants agreed that the glacier at Galena Creek and many others are true glaciers with a thin, nearly continuous mantle of rock debris, as contended by *Potter* [1972] and firmly established by *Clark et al.* [1996].