

## **Brackish Ground Water: Defining this New Resource for Coastal San Diego County**

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Geologic forces and scant precipitation along the coastline of southern California and Mexico have produced many small drainage basins with equally small aquifers.

Historically, human development in these basins has been restricted by the limited and infrequent runoff, and by the modest quantity of ground water available for agricultural or municipal use. Brackish ground water now is being investigated, and in some cases being exploited, as a new resource to augment local supplies in small coastal basins.

Improvements in the efficiency of reverse-osmosis filters and the emergence of photovoltaic solar power are facilitating development of ground water from coastal aquifers that previously was considered largely non-potable. A current hydrogeologic study of coastal San Diego County is investigating ground-water resources including brackish ground water [<http://ca.water.usgs.gov/sandiego>]. Local water supplies in this area are adequate to support only about 10 percent of the current population; the other 90 percent is supported by water imported from distant, much larger drainage basins.

Preliminary results have identified that the coastal aquifer is composed of more than 1,500 feet of sediment containing interlayered fresh and brackish ground water.

Concentrations of dissolved solids range from about 1,000 to more than 20,000 milligrams per liter (mg/L), and commonly exceed 2,500 mg/L. Ground water with the lowest of these concentrations was considered unusable for human consumption, but now is being considered as a local resource.