DEPARTMENT of the INTERIOR

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GULF COAST GEOTHERMAL DEVELOPMENT STUDIED FOR ENVIRONMENTAL IMPACTS

A new report by an Interior Department agency charts the ecological implications of tapping the earth's natural boilers under the Texas-Louisiana Gulf Coast to harness their geothermal energy.

Development of geothermal resources as an alternate energy source is accelerating because of its availability in certain areas of the United States and the fact that it represents a relatively "clean" source of power when compared to fossil fuels.

Geothermal power, like all other forms of energy development, does create environmental impacts, however. The two most significant impacts from this type of development are subsidence, or sinking, of land caused by withdrawal of enormous volumes of water, and pollution of adjacent land, estuaries, and other water bodies by highly saline brines.

Because of the intense energy development of the Gulf Coast and the potential for increased geothermal development in the area, the U.S. Fish and Wildlife Service's Western Energy and Land Use Team in the Interior Department has produced a major report on the subject entitled, "Ecological Implications of Geopressured-Geothermal Energy Development: Texas-Louisiana Gulf Coast Region."

This 656-page report, prepared by the Bureau of Economic Geology of the University of Texas at Austin, consists of two parts: (1) an evaluation of the potential for development of Gulf Coast geothermal resources

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and an identification of environmental intrusions that could occur as a result of this development, and (2) a description of the ecological resources of the Texas-Louisiana region and potential effects from geothermal development on the area, particularly habitat destruction and alteration, waste disposal, land subsidence, and noise.

A significant conclusion in the second part of the report is that geopressured fluids should not be released into the surface environment. (A geopressured fluid is a highly saline brine contained within rocks deep beneath the surface of the earth at extreme temperatures.) Analyses indicate that these brines used in geothermal energy development are not simply concentrated sea water, but differ greatly in composition and contain potentially toxic substances.

Pumping geopressured fluids back into the subsurface of the earth may provide a satisfactory disposal method, although the design of such an injection system must be carefully planned. The new report identifies additional research needs and provides an extensive annotated bibliography.

The report is designed to be a useful reference for those involved in planning geothermal energy development and devising concurrent environmental programs, as well as for State and Federal officials who manage fish and wildlife resources in the Gulf Coast region.

Single copies of this report are available from the Technical Information Officer, Western Energy and Land Use Team, U.S. Fish and Wildlife Service, 2625 Redwing Road, Fort Collins, Colorado 80526. Please specify report number: FWS/OBS-78/60.

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