The historical roots of a contemporary groundwater crisis
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For well over a century the immense biodiversity of the lands that constitute Spain's Doñana National Park has attracted the attention of hunters, nature-lovers, and natural scientists from across the Western world. Iberian lynx, fallow and red deer, wild boar, badgers, and vast flocks of migratory and endemic birds thrived in wetlands, dunes, and forests, which have collectively long been considered one of the wildest and most ecologically significant spaces in Western Europe.

Beginning in the 1960s, however, large-scale groundwater exploitation by local strawberry farmers dramatically drew down the local water table, desiccating the sandy soils and decimating wildlife populations. Citing uncertainty about the volume of the aquifer, its rate of recharge from the surface, and the likelihood of harm to the local environment, conservationists advocated a precautionary approach to groundwater use, but national and regional agricultural authorities joined the water users themselves in manipulating and concealing data in order to justify continued exploitation.

While groundwater-based irrigation generated rapid development in what was previously one of Spain's most impoverished provinces, the almost total lack of effective oversight created an economically and environmentally unsustainable situation and effectively destroyed an irreplaceable, internationally protected natural space.

In a new study from The Journal of Modern History, author Sarah Hamilton argues that groundwater’s invisibility renders it particularly susceptible to politically motivated claims of scientific uncertainty. Groundwater management is a "wicked problem," virtually insoluble due to its complexity, the extent of scientific uncertainty in any given aquifer, stakeholders' incompatible objectives and worldviews, and the serious and irreversible consequences of policies or actions. Historical examples such as that of Doñana National Park can play a pivotal role in understanding the origins of and solutions to contemporary conflicts over this crucial but increasingly scarce resource.


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