

Drought and Groundwater Management¹

By

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Abstract

This paper considers the problem of a water management authority faced with the threat of a drought that hits at an uncertain date. Three management policies are investigated: i) a laissez-faire (open-access) policy of automatic adjustment through a zero marginal private net benefit condition, ii) a policy of optimal dynamic management ignoring the threat of the drought and relying on automatic adjustments through a zero marginal social net benefit condition, iii) an economically optimal dynamic policy taking account of the threat of a drought. In particular, we show that the optimal pre-drought steady-state equilibrium stock size of water under policy iii) is smaller than under policy ii) and, hence, a precautionary stock size should not be built up prior to the drought.

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