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On the optimal exploitation of interacting resources. (English) Zbl 0798.90018
J. Econ. 59, No. 1, 23-49 (1994).

Summary: The paper demonstrates – partly analytically and partly numerically – that traditional results in resource economics obtained from the study of only one resource do not carry over to ecologically interacting resources. As in the traditional approach, we also employ dynamic optimization. The limiting behavior of the trajectories is first studied analytically by letting the discount rate approach infinity. A numerical study is then undertaken by means of a dynamic programming algorithm in order to explore the fate of the resources for various finite discount rates. The relation of our results to results in optimal growth theory is also discussed.

MSC:

- 91B76** Environmental economics (natural resource models, harvesting, pollution, etc.) Cited in 7 Documents
- 49L20** Dynamic programming in optimal control and differential games
- 91B62** Economic growth models

Keywords:

resource economics; optimal growth

Full Text: [DOI](#)

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