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Review Essay

Valuing Ecosystem Services

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INTRODUCTION

Beneath the Arizona desert sun on September 26, 1991, amid reporters and flashing cameras, eight men and women entered a huge glass-enclosed structure and sealed shut the outer door. Their 3.15 acre miniature world, called Biosphere II, was designed to re-create the conditions of the earth (modestly named Biosphere I). Built at a cost of over \$200 million, Biosphere II boasted a self-sustaining environment complete with rain forest, ocean, marsh, savanna, and desert habitats. The eight "Bionauts" intended to remain inside for two years. Within sixteen months, however, oxygen levels had plummeted thirty-three percent, nitrous oxide levels had increased 160-fold, ants and vines had overrun the vegetation, and nineteen of the twenty-five vertebrate species and all the pollinators had gone extinct. Eden did not last long.¹

What went wrong? With a multi-million dollar budget, the designers of Biosphere II had sought to re-create the level of basic services that support life itself—services such as purification of air and water, pest control, renewal of soil fertility, climate regulation, polli-

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