

Traditional Ecological Knowledge (TEK) and the Sustainable Management of Desert Truffles in Qatar

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Project Abstract

Desert Truffles, belonging to the genus *Terfezia* and *Tirmania*, are endemic to Qatar. These fungi are ectomycorrhizal - they grow in a mutualistic and obligate association with the roots of the desert sunflower, *Helianthemum lippi*. The geographic range of these fungi extends from across the Mediterranean to the Middle East. The desert truffles and associated cultural knowledge constitute a Traditional Ecological Knowledge (TEK) system and have been managed for both food and medicine since time immemorial (Mandeel and Al-Laith, 2006).

TEK is the body of knowledge acquired over generations by a group of people living in intimate association with the natural world. Contemporary re-examination of TEK systems have yielded life-saving medicines such as the anti-cancer TaxolTM from American Yew, *Taxus brevifolia*, and also important approaches to the conservation of biodiversity which are used to manage large national reserves and parklands such as the Maasai Mara National Park in Kenya (Cotton, 1996). In this proposed study, we would like to explore the TEK associated with the sustainable management of desert truffles in Qatar.

The cultural value of desert truffles is incalculable, however, desert truffles are also sold on the open market as a gourmet food. No systematic study has been completed on the economic value of desert truffles, however, Feeny (2002) reports that the price of fresh desert truffles has fluctuated from US\$26.50-\$270/kg in Saudi Arabia. In addition to cultural and economic value, desert truffles also possess inherent ecological value. In 1998, Honrubia and Morte founded the *Mycoludesme* project to engage mycorrhizal researchers to study how mycorrhize (including desert truffles) can be used to combat desertification.

In Qatar, the Supreme Council of the Environment and Natural Resources (SCENR) suggest that over-harvesting of the desert truffles is a contributor to desertification (SCENR, 2004 p37). Qatar is also committed to the implementation of the Convention on Biodiversity, which is an international treaty that seeks to promote the sustainable economic development and conservation of natural resources, such as desert truffles. In North America, studies have explored the impact of harvesting methods on mycorrhizal

mushroom sustainability (Luoma et al. 2006, Pilz et al. 2003). No such studies have been undertaken on the desert truffle.

This study will seek to establish baseline data on traditional local methods of harvesting desert truffles for sustainability based on interviewer-administered structured questionnaires. The species of truffle will constitute the independent variables. The interview questions will be constructed to elucidate traditional ecological knowledge concerning the following dependent variables: specific truffle harvesting methods, land management strategies that promote truffle growth, and attitudes concerning truffle sustainability. The results of this study will provide a platform from which to initiate further studies on best management practices and truffle cultivation.

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