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fire suppression policies have resulted in conifer encroachment, and consequently, declining productivity of culturally important plant and animal resources. Coast Salish Tribes and the USFS have recently initiated a handful of collaborative projects designed to “enhance” these habitats. However, none have involved the use of prescribed burning. Instead they rely primarily on mechanical removal of encroaching trees. Is this a sustainable solution in terms of human and mechanical energy expended? From the perspective of those involved, are there particular reasons for the use of fire that aren't met through mechanical means? What are the perceived environmental and human health risks that have thus far prevented the reintroduction of fire on the land?

LEPOFSKY, Dana - Simon Fraser University, Skye Augustine- Parks Canada, Nathan Cardinal- Parks Canada, Amy Groesbeck- Simon Fraser University, Misha Puckett- Simon Fraser University, Kirsten Rowell- University of Washington, Anne Salomon- Simon Fraser University, Nicole Smith - Parks Canada, and Elroy White-Central Coast Archaeology

Ancient Mariculture in British Columbia: Documenting the Past for the Future

In coastal British Columbia, as elsewhere, the recognition and re-establishment of traditional mariculture practices are linked to issues of food security, health, economic development, governance, and community engagement in heritage. Our collaborative team of First Nations knowledge holders, archaeologists, and ecologists focuses on one form of traditional marine resource management. Locally known as “clam gardens”, these are hand-constructed rock walls and associated cleared and tended tidal sand flats. In several locations, we have 1) documented the location of clam gardens and associated archaeological sites; 2) conducted ecological surveys and experiments that suggest clam abundance, growth and survival are higher in extant clam gardens beaches than in other beaches; 3) collected zooarchaeological samples to assess ecological changes in ancient clam gardens; and 4) recorded local knowledge about the social and ecological aspects of traditional mariculture. Inter-disciplinary and inter-community efforts are an effective way to document traditional resource management systems, as well as situating them within current socio-political and ecological contexts.

LUPO, Karen - Department of Anthropology, SMU, and Dave SCHMITT - Desert Research Institute, UNR  
Prey Depletion and the Zooarchaeological Record: Implications from Bofi and Aka Ethnoarchaeological Research

Changes in the abundances of certain animals in zooarchaeological assemblages are often viewed as indicators of prey depletion from anthropogenic causes or natural environmental change. Central assumptions in these analyses are that depletions of larger-bodied and higher value prey will lead to increased diet breadth and the inclusion of smaller-sized and lower value animals in the diet. In this paper, we use quantitative data derived from ethnoarchaeological studies of forest foragers to test these assumptions. By comparing prey harvesting rates and resulting zooarchaeological assemblages from 2 different villages, we show how anthropogenic effects (over-hunting and roads) influence hunting patterns and prey choice. Our analyses show that changes in hunting patterns resulting from prey depression generally match some of the traditional assumptions that guide zooarchaeological analyses but these data also show important deviations from expectations. Specifically, we find deviations in hunters prey selection resulting from a desire to maintaining social networks.

MABE, Jeffrey A. - University of North Texas, Denton, TX, James H. Kennedy - University of North Texas & Universidad de Magallanes, Punta Arenas, Chile, Jaime Jimenez - University of North Texas & Universidad de Magallanes, Punta Arenas, Chile, and Ricardo Rozzi - University of North Texas & Universidad de Magallanes, Punta Arenas, Chile

Introduced Muskrats (*Ondatra zibethicus*) on Navarino Island, Cape Horn, Chile: Physical Signs, Habitat Associations, and Interactions with Introduced Beaver (*Castor canadensis*)

Research on non-native species in the Cape Horn region of southern Chile has focused on the American mink and The American beaver, but ignored the muskrat. We surveyed freshwater habitats on Navarino Island, Cape Horn to identify physical signs of muskrat presence and to document muskrat habitat use. Muskrat presence/absence was compared with beaver altered habitat to determine if the ecosystem changes produced by beaver benefit muskrat. Latrines, tracks, and houses were the most common indicators of muskrat presence. Muskrat presence was associated with an increased abundance of aquatic vegetation, slow water velocity, and increased bank vegetation cover. Habitat conditions favored by muskrat tended to co-occur with habitat impacted by beaver and muskrat presence was strongly associated with beaver altered habitat. These results suggest a commensal

relationship where the ecosystem engineering activity of the introduced American beaver creates habitat more favorable to introduced muskrat in the Cape Horn region.

MARGÓCZI, Katalin - Department of Ecology, University of Szeged, Hungary and Krisztina Gellény - Department of Ecology, University of Szeged, Hungary

Living knowledge of traditional resource management in a Hungarian landscape

Large scale industrial agriculture rapidly wipes out traditional management practice and related knowledge. The mosaic landscape structure of the southern Kiskunság (Hungary) is not suitable for large monocultures, so the small scale, traditional agriculture survived until the seventies, and partially until present. Twenty-one in-depth semistructured interviews were conducted in 2011 and 2012 with local residents and land users about past and present resource management, land use, ecological knowledge, and ecosystem services. Interviewees spoke about a semi-subsistence economy until the seventies, the adaptive grassland management practice, the fine structured land use adapted to the mosaic soil properties. They argued, that this life is over, and only the use of machines and chemicals can make agriculture profitable, although they were sorry about this fact.

MARSTON, John M. - Boston University

Agricultural Adaptation to Climate Change in Central Turkey, 1500 BCE – 500 CE

How do people adapt agricultural systems to changing climates? Drier periods and periods of increased rainfall variability affect the availability of fodder for animals and the yields of agricultural staples, threatening human subsistence.

Archaeological data offer a unique perspective on how people responded to environmental change and whether those responses were successful over the long term. Prior archaeological research in central Turkey shows that agricultural systems changed in response to social factors, but the role of climate in these decisions has not been well studied.

This paper integrates 2000 years of paleoclimatic and archaeological data from central Turkey to ask how climate change affected rainfall and plant growth within this region and to ask how subsistence practices adapted to climate change. I also include an assessment of the environmental impacts of these practices and suggest that these data may prove useful in crafting future agricultural policies.

McDONALD, J. Andrew, The University of Texas - Pan American

Deciphering the Symbols and Symbolic Meaning of the Maya World Tree

Cosmic tree symbolism among pre-Columbian societies of Mesoamerica traces from the pre-Classic period, but the significance of the motif and its many and varied symbolic permutations are poorly understood. Efforts to identify the plant in a botanical context on ceramic vessels, stucco reliefs, and stone stelae of the lowland Maya usually favor a kapok tree (*Ceiba pentandra*) or maize plant (*Zea mays*). Nevertheless, a morphological and ecological evaluation of the motif favors a white-flowered water lily from the lowland swamps of southern Mexico and Central America: *Nymphaea ampla*. Recurrent associations between various gods and dynastic rulers with a personified aspect of the water lily world tree draws additional attention to the crucial symbolic and ritualistic roles this aquatic plant once played in the practice of religion and expression of kingship among lowland Maya communities.

MOLNÁR, Krisztina, Zsolt Molnár, and Judit BÓDIS

Erosion of traditional ecological knowledge in Hungary, Central-Europe

The goal of our research was to study the erosion of traditional ecological knowledge related to wild plant species. The survey was made among Hungarians in two semi-traditional villages (Sztána and Zsobok) in Transylvania, Romania. We studied the knowledge of three age groups, preferably in lineages (grandparents, parents and children) by semi-structured interviews. The set of species was randomly chosen from the total list of known wild plant species, adding randomly some dominant species that were not yet recorded as known by locals. Species were shown on pictures (after testing efficiency of recognition). Grandparents had a deeper, than expected knowledge. Our preliminary results suggest, that there are big differences between generations. The knowledge depended on people's age, type of work, hobby and connection to the settlement. We found, that the changing socio-economic environment resulted in a considerable loss of traditional knowledge.