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Workshopping cultural-ecological reciprocity ... **Report on Aboriginal Fire Management Panel in Perth, and Speaking Tour of Aboriginal Southern Australia**

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After deciding to organize a panel on Indigenous fire management at the 3rd Society for Ecological Restoration International's World Restoration Conference and 19th Annual Meeting at Perth, Australia, August 23-27, 2009, I secured funding for my participation from Indigenous-led First Peoples Worldwide, and then set out to team up with Joan Gibbs of the University of South Australia in Adelaide. She had already invited me to participate in her "Traditional values for a new future: Aboriginal traditional ecological knowledge and land management" panel. She agreed to help me find traditional Aboriginal fire practitioners for my proposed panel, "The complementarity of Indigenous knowledge and Western science in the restoration of fire-adapted ecosystems in Spain, northern Australia, and California."

We got commitments from David Claudie, a traditional Kaanju fire person from Central Cape York Peninsula in northern Australia; Leanne Liddle, a Watarru lawyer and scientist from the Far Northwest of southern Australia; Jack Green, a Senior Traditional Owner for Garawa Country in the Gulf of Carpentaria in northern Australia; and Victor Steffensen, Co-founder and Director of the Traditional Knowledge Revival Pathways program in North Queensland. They were joined by Don Hankins, a Plains Miwok California Indian traditional burner and fire ecologist teaching in the Department of Geography at Chico State University, California, and myself as organizer and moderator (Hankins was co-organizer and co-moderator).

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About 500 people attended.

Our message was that Indigenous burning regimes need to be restored to reverse the current trend in Australia of late-season wildfires. These increase each year in frequency, intensity, and spatial extent (with single fires of up to 1 million hectares). They destroy native ecosystems — and important cultural species — as exotic invasive species replace native species in the aftermath of these late-season wildfires. This is because of their high severity, which is beyond the long-evolved genetic adaptive capacity of vegetation familiar from low- to moderate-severity burns.

Dean Yibarbuk, Aboriginal fire ecologist, has worked in collaboration with Western fire ecologists in quantitative research in Arnhem Land, in northern Australia. Their research shows that Aboriginal fire regimes — late wet season to early dry season burns, followed by *small* burns through the dry season as grasses cure — are superior in five biodiversity categories to any other fire regime, including park ranger-controlled burning and natural lightning-ignited wildfires. The Aboriginal fire regime creates and maintains a patchy, fine-grained mosaic of new and old burns — acting as fuel breaks during burns and interspersed with unburned vegetation. This “mosaic” effect prevents the huge conflagrations that result from national fire suppression policies.

Ecological restoration in our era of rapid environmental changes brought on by climate disruption will require the inclusion of traditional Indigenous burning regimes and long-term, local qualitative knowledge. The Aboriginal memory of once-healthy ecosystems can save us from the phenomenon of shifting baselines; Traditional Ecological Knowledge provides local intergenerational qualitative expertise to complement short-term Western quantitative knowledge – providing opportunities for collaborative research and safeguarding our human knowledge bank.

The current controversy within the global Western restoration community is between the relative importance of historical reference ecosystem models, guiding restoration with an historically anchored baseline of what

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constitutes a healthy, well-functioning ecosystem — versus leaving history behind because of anticipated novel species assemblages, climate-displaced species range shifts in latitude or elevation, all of which is expected to generate built-in resilience to future change ... this controversy poses a false dichotomy of choices. Both historical reference ecosystem models and built-in resilience to future change will be needed. For tribal communities rooted in particular places, and unable to move with displaced species, historical ecosystems need to be maintained or restored in order to continue to provide important cultural resources and species that must be given special attention. A greater number of adapted subspecies and populations must be targeted for intensive management and monitoring and/or propagation in order to maintain the refugia of genetically adapted species that would be expected to grow in quantity as climate disruption increases in intensity. This is different than assisted animal migration that is expensive and not appropriate for place-based communities.

Later in the week, I moderated an Indigenous Peoples' Restoration Network meeting attended by 15 or so mostly Indigenous persons (including one Maori from New Zealand). We had an interesting discussion concerning the role of networks like IPRN in supporting Indigenous peoples' issues around the world, but particularly in Australia. David Claudie talked about the work his Kaanju community has accomplished in gaining intellectual property rights on four important medicinal plants — a global problem for Indigenous Peoples, thanks to bioprospecting and the World Intellectual Property Organization that upholds corporate rights while refusing to recognize Indigenous rights and benefit-sharing as required by Article 8(j) of the Convention on Biodiversity.

David has since been corresponding with me about forming an IPRN for Aboriginal Australia. Traditional landowners need to speak out about caring for their land in the old ways. Ecological restoration provides the network necessary to acknowledge the attachments and understandings of people living on the land of their ancestry, as in Australia. Such a network would be able to capture and convey Traditional Aboriginal Knowledge of caring for country as the basis for restoring land.

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Agnes Pilgrim, my elder from the Siletz Confederated Tribes in Oregon and Chairwoman of the “International Thirteen Indigenous Grandmothers,” attended the Perth conference through First Peoples Worldwide funding. Agnes and I had been invited by Joan Gibbs to tour southern Australia in the vicinity of Adelaide, funded by the University of South Australia. Our itinerary included the University of Southern Australia, Tauondi Aboriginal College, Parliament House, South Australia Provincial Governor’s House, East Terrace Aboriginal Community Centre, Friends Meeting Centre, Aboriginal Public Forum on “Caring for Water,” a local Aboriginal sacred site, and Camp Coorang (a Ngarrindjeri community center located in a Provincial Park that protects unique estuary and dune ecosystems on the coast of the southern ocean) where Agnes Pilgrim conducted a water ceremony.

As one must deduce from the itinerary, water is a serious problem in Australia. A multi-decade drought continues in the Darling-Murray River Basin in southern Australia, turning farms to dust and drying up the final 40 miles of the Murray River’s journey to the sea. Economic and cultural impacts are considerable. For Aboriginal tribes like the Ngarrindjeri that are reviving traditional cultural arts like basket-making, groundwater loss is impacting water-loving basket plants like reeds and rushes. Drought also impacts many other cultural species and the hydrology of ecosystems, leading to loss of groundwater, springs, and streams, with implications for people as well as plants and animals.

Our experience with Aboriginal communities and individuals in Australia was filled with warmth, hospitality, and gift-giving. We were made to feel welcome everywhere we went. It was a remarkable conference and speaking tour. We were entertained by a master *didjeridu* musician in our hotel lobby. We were visited by a young professor of Aboriginal Studies at Western Australia University in Perth and her mother in our hotel. Joined by another Aboriginal woman author, we were taken to a large Perth park for lunch and a tour. We were treated like visiting royalty everywhere we went.

We learned a lot about Aboriginal history and culture. We found out about the “stolen generations” — the forced removal of Aboriginal children from their homes and their transfer to places far from their communities. “Educated” in religious schools, most never saw their families again. They lost their language,

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culture, clan affiliation, and identity. Unbelievably, this continued until the 1970s. We learned some of their stories, listened to their music, watched their dances, saw their art work, and discussed our role as Indigenous Peoples in an alienating modern world. We talked about eco-cultural restoration and climate change adaptation. We talked about traditional burning and fire management, about water and much more. We all took full advantage of the opportunity to discuss and share our similar perspectives.

Some of the dominant themes among us bear repeating and need a wider audience. Here is my summary of those themes:

Indigenous Peoples in some parts of the world say that without their culture there would be no forest, and without the forest there would be no culture. But the same cultural-ecological reciprocity operates in other Indigenous regions – marine regions, desert regions, mountain regions, savanna regions, Arctic regions, plains regions ... all regions really.

Western ecologists know that if a keystone species is removed from an ecosystem, unanticipated cascading ecological events occur that begin a process of ecosystem unraveling. Unfortunately, few scientists recognize Indigenous Peoples, with their time-tested sustainable cultural landcare practices, as a keystone species. In case after case where they no longer are allowed to continue their traditional countrycare role, land health has deteriorated. A good example is the catastrophic wildfires in Australia and North America, where fuel loads were once systematically reduced through traditional burning practices.

Indigenous Peoples are a *natural* keystone species critical to land health. Restoration of land health must balance historical ecology and Indigenous landcare practices with anticipated future climate change impacts. Climate disruption is only exacerbating already existing rapid ecological degradation. No-analog exotic and native species assemblages have already occurred, relative to pre-contact baselines. Future no-analog preparation, while necessary (e.g. assisted migration), is not sufficient in itself to address further climate change unless integrated with ecosystem-based climate adaptation.

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Building *in situ* ecological resistance, resilience, redundancy, and maintaining or restoring genetic diversity are as much needed now to address past change as they are to address future change. Toward these ends, Traditional Ecological Knowledge, together with Western science, can make “measurable gains on local ground” the world over. But TEK depends on Indigenous cultural survival and protection of homelands that are now under threat from globalization.