

Climate Change and Human Impacts on the Roof of the World, southern Tibet

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For my talk, I want to take you on a tour of climate change in southern Tibetan over the last ~10,000 years, and of the record of peopling of the region and how this impacted the landscape. Studies of ancient lake deposits filling closed basins show that the region was much wetter in the early Holocene but began to dry after 8-9 ka. By 1.5-2 ka ago lakes were lower than today but appear to have risen recently, perhaps due to permafrost melting. Humans probably radiated across the plateau in the early to mid-Holocene, in a setting that was naturally wetter than today. The story of their adaptation to the harsh high elevations of Tibet near the physiologic limit of large mammals is now well documented. It was facilitated by changes in their own physiology, and during the late Holocene, by domestication of wild yaks and other animals. However, overgrazing by these domesticates, combined with wood-cutting, partly to construct monasteries, has led to mass erosion of the delicate landscape of Tibet. Air temperatures are rising sharply in Tibet and in so doing melted permafrost and glaciers, a threat to long-term storage of water across Tibet and the pastoralist way of life of rural Tibetans.