



PLANETARY STEWARDSHIP

From the Editor-in-Chief of the *Bulletin of the Ecological Society of America*

In 1988 the Ecological Society of America put together “The Sustainable Biosphere Initiative: an Ecological Agenda” (SBI) authored by then ESA President Jane Lubchenco and 15 other leading ecologists. This document had an important impact on the research programs of ecologists around the world. The report was cited hundreds of times, and more importantly, it also influenced many outside of the scientific community.

In this issue of the *ESA Bulletin* you’ll find an effort that has branched off from SBI and related initiatives. ESA President Mary Power and President-elect Terry Chapin have compiled case studies from diverse contributors, ESA members and others, that address the theme “Toward a Planetary Stewardship: paths towards resilience and sustainability in a changing world.” The efforts discussed range from sustainable community-based fisheries and forests through solar and water management alternatives to direct trade in support of coffee and cacao growers. Some of these themes will be explored further in a special session at the ESA Annual Meeting in August, entitled “Implementing Ecosystem Stewardship at the Local Level.” Further, Power and Chapin propose in the future to use the *ESA Bulletin* as a forum for discussion of how planetary stewardship is to be accomplished. A new section in the *Bulletin* will be used to report on case studies, examples, and principles that have been used, successfully, to encourage and develop sustainability and resilience at the planetary scale. In the next issue of the *Bulletin* you’ll find a more detailed discussion of how this new refereed section will work.

—Ed Johnson

Box I. The Karuk Tribe, Planetary Stewardship, and World Renewal on the Middle Klamath River, California.

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In the Karuk Tribe's worldview, planetary stewardship is maintained through the place-based spiritual and cultural philosophy of World Renewal. A philosophy of Renewal reaffirms the responsibility of humans as stewards as well as a critical ecosystem component. The Tribe believes in renewal of the human-environment relationship that is compatible with ecological processes, promotes a sustainable economy, and increases ecosystem resilience.

Karuk traditional ecological knowledge (TEK) supports an approach where all species, habitats, and their relationships are valued. TEK of ecological processes tells us that species and communities are susceptible and resilient to disturbances (Berkes et al. 2000, Anderson 2005). The Karuk Tribe uses TEK to guide management to enhance resource resilience and ensure sustainability.

The Karuk Tribe utilizes TEK and prescribed fire to reduce undesired consequences of wildfires. The Tribe's knowledge of climate and weather guides its use of fire in order to protect vulnerable habitats and species while increasing ecosystem resilience to climate change. The way the Tribe uses fire fosters the quality and abundance of resources the Tribe and other species depend on, from ridges to rivers (Anderson 2005, Skinner et al. 2006). Tribal knowledge recognizes the broad, landscape-scale relationships between fire, vegetation, soil moisture and transpiration, hydrology-water yield, and aquatic communities (Biswell 1999, Skinner et al. 2006). For generations, the Tribe has recognized the landscape's dependence on seasonal fire-induced change. For example, oak acorn productivity is affected by individual tree response to broader environmental conditions and ecosystem processes. Acorn abundance, an "ecosystem good," is linked to wildland fire's "service," and enhanced through the role of humans as stewards and fire managers (Anderson 2005). Additionally, woodpeckers, as indicators of terrestrial productivity and spiritual wealth, and Spring Chinook salmon, as indicators of aquatic health and watershed connectivity, are managed as cultural barometers of ecological integrity.

The relationship of the Karuk people and place has been disrupted since the 1850s European-American settlement of the mid-Klamath brought industries based on resource extraction, such as mining, timber harvest and associated fire suppression, dams (and other hydrologic alterations), and commercial fishing. Thus, the long-term (renewal) focus of tribal stewardship systems was replaced with a short-term profit emphasis of western resource extraction, as well as single-species management (Bright 1978).

Currently, resource management regimes are legally required to use best available science. The Tribe believes research and monitoring should focus on adaptive management and interdependent ecosystem functions to improve applicability of science for the Klamath Basin (Berkes et al. 2000). Additionally, land management should incorporate tribal management approaches in both planning and implementation. Following a tribal-based model, adaptive management would be guided by our World Renewal ceremonies, TEK, cumulative observations of ecological interactions, and our

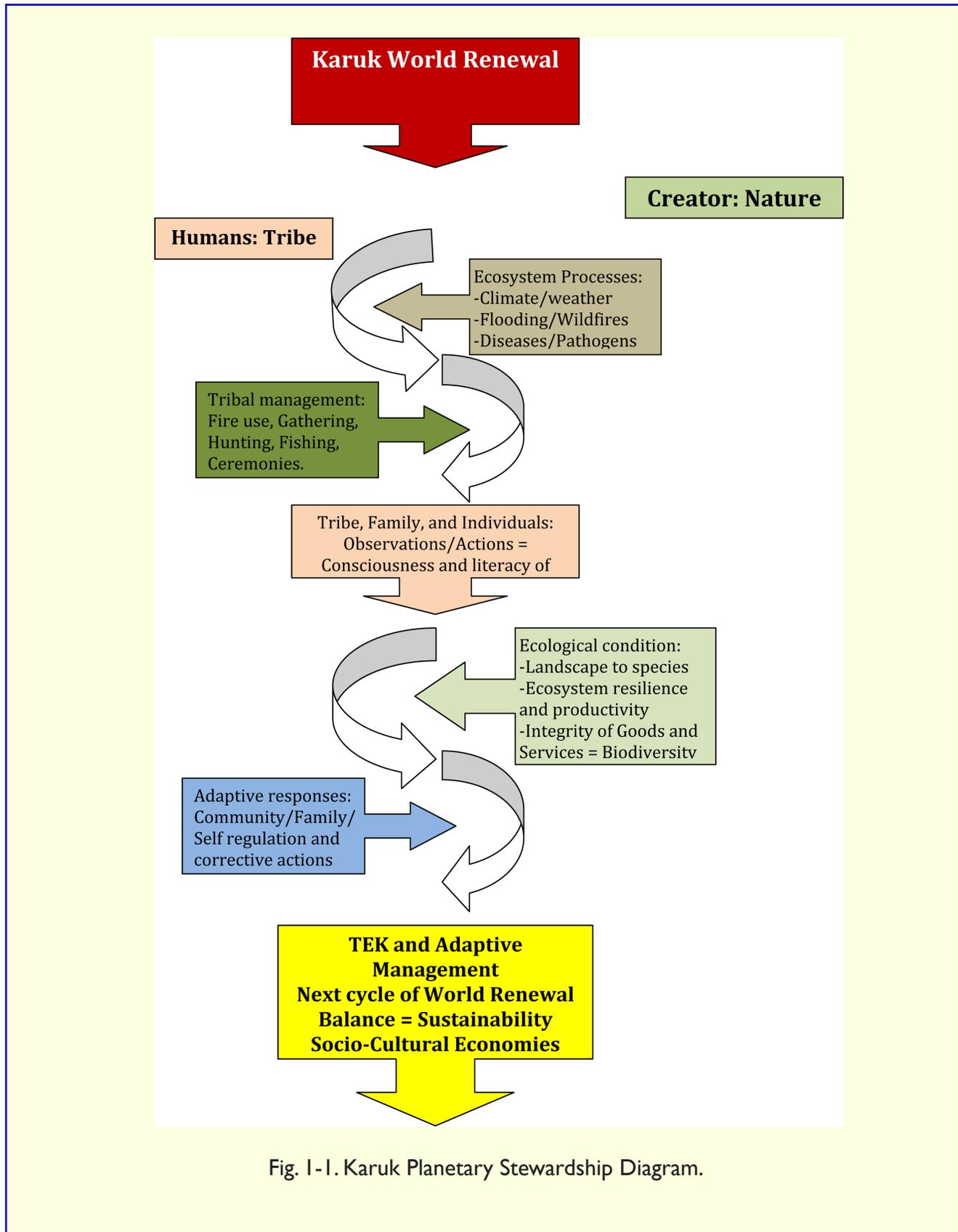


Fig. I-1. Karuk Planetary Stewardship Diagram.

interdependency on resources within global social–ecological systems (Berkes et al. 2000, Anderson 2005).

The Karuk Tribe is currently developing an Eco-cultural Resources Management Plan that incorporates tribal perspectives. This plan seeks to unify principles of ecological restoration with tribal community needs in a holistic fashion. The tribe is monitoring results and documenting the effectiveness of their ecosystem management practices and wants to expand collaborative research efforts. For additional information or a summary of research and monitoring needs, contact the Karuk Tribe's Department of Natural Resources.



Fig. 1-2. Karuk salmon dipping from the Klamath River. Ron Reed netting; Jay Jay Reed clubbing. Photo by David Arwood.

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