Water and Culture



A Resource Management Strategy of the California Water Plan

California Department of Water Resources

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Acronyms and Abbreviations

АНРА	Archaeological and Historic Preservation Act
ARPA	Archaeological Resources Protection Act
CEQA	California Environmental Quality Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PRC	California Public Resources Code
ТЕК	traditional or tribal ecological knowledge
USC	United States Code

Water and Culture

This resource management strategy report presents the emerging thinking of many California Water Plan Advisory Committee members and other stakeholders regarding the importance of linking cultural considerations to water management. In many respects, this resource management strategy report represents more of an annotated outline than a fully developed strategy. Even so, the water plan stakeholders asked that this resource management strategy report be included, if only to improve awareness of the need for the strategy and to continue dialogue on what it should include.

Water and culture are connected in myriad ways, with subtle and complex implications for water management in California. Some cultural relationships to water are so pervasive, they may be easy to overlook. Other cultural considerations are less apparent and may be difficult to recognize. Increasing the awareness of how cultural values, uses, and practices are affected by water management, as well as how they affect water management, will help inform policies and decisions. Even regulations reflect cultural values, particularly by how they are put into practice when water is viewed as a commodity, and all the more by the sum total of laws, regulations, and policies intended to control water. (See Box 1 for a list of some of the California and federal laws and policies addressing cultural resources.) Water resources have shaped the history of California, contributing to the current social, cultural, and economic patterns across the state. The presence of freshwater sources has influenced the location of settlements and communities for hundreds, even thousands, of years. Water resources have also been pivotal to key economic activities, such as fishing, mining, agriculture, manufacturing, tourism, and recreation. These historic aspects of development continue to have ramifications for water managers today.

Water and water-dependent resources also shape individual and collective experiences that contribute to individual and community well-being, sense of identity, and connection with the natural world. These experiences are inextricably linked to values, traditions, and lifestyles, which in turn inform perspectives and expectations regarding water resources and conditions. Cultural considerations by their nature are inherently linked to every resource management strategy. More importantly, the consideration of culture in water management decisions is, in many cases, legally mandated by State and federal laws. Utilizing cultural considerations in the framing, development, and promotion of management decisions is vital to ensuring legal compliance and sustainable practices.

What is Culture?

Most people have a reference point for the word *culture*, but it is not an easily defined term. Culture is contextual. No single definition of culture satisfies all the diverse perspectives within California. Culture can and does include lifeways, mindsets, spirituality, creation stories, livelihoods, personal and community histories, and artistic and other practices that represent the diversity of California's social fabric.

Likewise, how the scientific community describes and defines culture varies to a substantial degree. Even State, tribal and federal entities have varying definitions whose application is intended to assist the implementation and understanding of laws related to preservation and incorporation of culture via resource management decisions.

Box 1 Laws and Policies

California

- California Environmental Quality Act (CEQA) California Public Resources Code (PRC), Section 21000 et seq.
- Native American Historical, Cultural and Sacred Sites California Public Resources Code, Sections 5079.60 et seq.
- Preservation of Significant Archaeological Resource Areas and Associated Artifacts PRC Sections 5079.60 et seq.
- Destruction of Archaeological Sites and Caves California Penal Code, Sections 622.5 623.
- Investigation, Excavation and Preservation of Historic or Prehistoric Ruins California Water Code, Section 23.
- Governor's Executive Order No. W-26-92 Management of significant heritage resources under jurisdiction of State agencies.
- Governor's Executive Order No. B-10-11 Encourages communication and consultation with California Native American Tribes.
- California Natural Resources Agency Tribal Consultation Policy.

Federal

- National Historic Preservation Act (NHPA) United States Code (USC), Title16, Sections 470 et seq.
- National Environmental Policy Act (NEPA) 42 USC Sections 4321 et seq.
- Archaeological Resources Protection Act (ARPA) 16 USC Sections 470aa et seq.
- Archaeological and Historic Preservation Act (AHPA) 16 USC Sections 469 et seq.
- Native American Graves Protection and Repatriation Act 25 USC Sections 3001 et seq.
- American Indian Religious Freedom Act 42 USC Section 1996.
- National Park Service Bulletin 36 Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes.
- (Federal) Executive Order 13175 Consultation and Coordination with Indian Tribal Governments (2000).

Federal Consultation

- http://www.nps.gov/tribes/Documents/Laws.pdf.
- http://www.dot.ca.gov/ser/vol1/sec3/cultural/ch28arch/chap28.htm#definition.
- http://www.dot.ca.gov/ser/vol1/sec3/cultural/ch28arch/chap28.htm.
- http://www.dot.ca.gov/ser/vol1/sec3/cultural/ch28arch/chap28.htm#definition.

Any definition of culture must include far more than what may feasibly be contained in this resource management strategy report. Owing to the complex nature of culture and its interconnectedness with water, water management agencies and decision-makers should look to the local communities, groups, and California Native American Tribes to understand those cultures. This process of inquiry facilitates understanding how management decisions affect local cultures, as well as how water resources and water policy are affected by those same cultures.

In some cases, legal requirements mandate that agencies and decision-makers engage with California Native American Tribes. Engaging with tribes and tribal community leaders regarding water resource

management in a timely manner is the best way to ensure local, State, federal, and international legal obligations are met.

Cultural Resources and Cultural Resources Management

Cultural resources is a term that is diverse in ways similar to "culture" itself, in that it includes both physical and intangible aspects of social practices, routines, and ways of life. Intangible aspects of culture involve language, beliefs, practices, and traditions. These are often associated with cultural resources comprised of physical objects or places, including structures, cultural landscapes (which combine natural and constructed elements), specific locations with special significance, and/or natural materials.

Management choices for some cultural elements are guided by statutory requirements. For example, cultural resources representing historic artifacts, sites, and buildings may be protected under the National Historic Preservation Act (NHPA). The equitable distribution of effects and benefits is evaluated with regard to environmental justice and public trust factors. Other cultural materials, uses, and practices might need to be assessed within the context of a particular policy or project.

For more information on cultural resources and cultural resources management, *see California Water Plan Update 2013*, Volume 4, *Reference Guide*, the article "What is Culture? Approaching Cultural Diversity in California and Varying Definitions of Culture."

Cultural Considerations and Water Management in California

Expression of cultural connections to water and water-dependent resources can involve a wide range of activities and material objects. The following categories of cultural activities are offered to encourage reflection and discussion with the community on the different ways water and culture interface. The categories are for illustrative purposes only and contain areas of overlap.

Subsistence Activities include traditional hunting, fishing, and collecting plants for food sources, medicinal properties, and raw materials. Water flows and water quality are critical aspects of supporting water-dependent subsistence activities. Public health risks can occur if food sources are obtained from contaminated water bodies. These risks are increased with higher consumption levels of locally obtained food sources that can occur in subsistence households and communities. This can well exceed safe consumption levels. For example, no more than three servings a week of fish caught in a particular lake or stream should be eaten, to avoid any health risk present in that particular lake or stream. Also, communication relating to risks or contamination may be hampered by language barriers.

Recreation Activities embrace a broad spectrum of pursuits that range from full-body contact with water (swimming, surfing) to minimal contact (water providing the scenic backdrop for hiking and wildlife viewing). Recreational pursuits encompass motorized and non-motorized activities. These activities range, for example, from boating and riding jet skis to picnicking and kayaking. Here again, water flows and water quality are key factors contributing to recreational experiences. Public health risks can occur if waters are contaminated. Beach closures, which protect public health, also affect recreation and tourism. Another factor that can influence water- related recreation is the availability of facilities, such as boat ramps, parking, restrooms, and general-purpose stores.

Spiritual Activities draw upon the cleansing, healing, and renewing properties of water. Examples include outdoor baptisms, sweat lodges, lakeside weddings, Native American ceremonies, and the blessing of the fleet in fishing communities. While these examples focus on particular activities, some perspectives see an inherent spirituality in water itself, which is always present. These events and perspectives share a common theme in transcending the mundane through a sacred and profound connection to water. In addition to water levels/flows and water quality, those seeking a spiritual experience may include considerations of aesthetics and solitude. A busy pattern of recreational use on public lands could interfere with sacred pursuits.

Historic Preservation seeks to maintain the legacy of the past by protecting historical features (i.e., artifacts, sites, places, buildings, cultural landscapes). Some historic objects may be directly related to water infrastructure (e.g., diversions, flumes, mills). Other historic features may not be directly related to water resources, but are challenged by water management projects and activities. For example, receding waterlines at lakes or reservoirs could expose protected historic features. Conversely, surface storage facilities could inundate historically or culturally significant features or locations that are important to a community. Another example is water system upgrades that need to modify or replace historic infrastructure or support buildings, or new water projects where ground-disturbing activities could destroy historic resources. Water managers are encouraged to review, with their legal office, the legal requirements that might be associated with these situations. A list of key statutory provisions is provided in another section of this resource management strategy.

Public Art has recorded and served as an integrated expression of water in California. This extends to utilizing water infrastructure as the location of art, presentations of art in music and other mediums as a water-related transference of culture, and art providing the platform to express people's relationship with water and the watershed.

One response to the Rim Fire, a major fire event in 2013, was a community healing process using art as method of expression. Groveland, California, a town of roughly 2500 human inhabitants located less than 25 miles west of Yosemite National Park on State Route 120, was affected in multiple ways by the fire. Economic damages to the tourism economy have closed many local businesses. As the fire burned over several months, local author Elizabeth Dougherty wrote that the citizens turned to the sky "waiting for fall rains to douse the last of its burning fervor. Whether at an art exhibit, a yard sale, a trivia night, a visit to the town dump, the need continues for each person to tell their experience, their story, of how the Rim Fire came into their lives, onto their properties, into the bodies of their cattle, igniting their deeply adored Stanislaus Forest and Tuolumne River Watershed" (Dougherty pers. comm. Oct. 24, 2013).

The relationship of the Rim Fire to the large population centers may not have been readily apparent, yet this same land base is the watershed that provides water to the San Francisco Bay area. A coalition of community advocates organized a mixed-media art show, "Standing with the Watershed," in downtown San Francisco and sought artists to share their visceral experiences of both the Tuolumne River watershed itself and the use of these waters in San Francisco and Silicon Valley. Dougherty wrote, "We want to enliven the souls of those who visit during the two month exhibit with the energy and vitality of this watershed pre-, during-, and post Rim Fire. We want to celebrate the watershed and its inhabitants in all forms. Viva la Tuolumne!" (Dougherty pers. comm. Oct. 24, 2013.)

The Great Wall of Los Angeles, a monumental work by Judith Baca, is a novelization of the city of Los Angeles's past. It is situated on flood infrastructure. The work is symbolic on multiple levels and creates a new relationship with a waterway and the evolution of the city. Still other symbolic and important artwater installations, including the use of bridges, can be found throughout California.

Lifeways represent the larger collective mindsets and practices that represent the diversity of California's social fabric. Shared passions, beliefs, histories, and experiences bring people together to create group and community identities. Several of the lifeways, which have come to typify California to the rest of the world, have a strong connection to water.

- California Native American Tribes often describe their social and cultural identities in terms of being inseparable from the natural world.
- Fishing towns and villages share social and cultural identities that derive from livelihoods that also define ways of life.
- Ranching and agricultural communities were settled near water sources; these working landscapes also provide habitat and vistas that characterize the West.
- The surfing and beach culture of California is directly associated with coastal and ocean resources, projecting an iconic image and serving as a key economic driver.
- The environmental movement in California has strongly advocated for coastal and riverine protections throughout the state.
- Access to water is the foundation of many local economies.

These lifeways are characterized by a close relationship with the land and waters. The well-being of the social fabric, economy, environment, and community are one. This creates responsibilities to long-term stewardship and heightened awareness, knowledge, and expertise regarding local conditions.

Also, any social, cultural, or economic uses of waterways or water-dependent resources can affect the resource base. This can result from trash, overuse, or the introduction of non-native species.

California Native American Tribes' Relationships with Water

In California, the relationship of California Native American Tribes and water is fully rooted. California Native American Tribe village sites and areas for cultural practices are found within a quarter-mile of water, whether it is a spring, creek, river, or lake that still exists or once existed.

It is routine for excavations near a water body to uncover artifacts, such as bedrock mortars, petroglyphs, and tools, affirming the Native American relationship with water (Goode pers. comm. Oct. 18, 2011).

A desire to preserve the California Native American Tribes' relationship to water, among other waterrelated heritages, has led to enactment of multiple State and federal requirements for protecting various cultural resources. Those requirements are often embedded in other statutes triggered by a wide range of water management actions. As a simple example, any water project that requires a federal permit or uses federal funds may be subject to the NHPA. Depending on the activity, Section 106, which requires agencies to engage in a good faith effort to consult with tribes on a government-to-government basis, may be triggered. Each activity and situation is different; however, the awareness that such triggers may exist allow water managers to take these requirements into account early in a process and conduct meaningful outreach and government- to-government consultation, as appropriate. A less obvious trigger might include such laws as the California Coastal Act. Section 30244 states, "Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required."

Because each and every situation is different, water managers are advised to consult with their own legal representatives to determine the best course of action. Nonetheless, timely, frequent, and meaningful outreach toward and engagement with California Native American Tribes and stakeholders (when the situation is appropriate to government-to-government consultation) — can help managers identify potential issues and mitigation strategies. Some managers avoid outreach and engagement, thinking that these activities are overly time consuming or costly; however, time and again upfront planning with the appropriate organizations and individuals prevents far more costly implementation delays and/or litigation.

Beyond legal considerations, the California Native American Tribes' traditional practices for land stewardship consider the need for sustainability (Goode pers. comm. Oct. 18, 2011) and regeneration for future generations. As with many other first peoples, these traditional practices and knowledge have been maintained and passed down through generations and make up the basis of what is termed Traditional (or Tribal) Ecological Knowledge (TEK). TEK offers a perspective on California Native American Tribes' culture, their relationships with water, and various sustainable and adaptable water management tools and techniques.

There is a growing awareness among resource managers of the value of this knowledge for present-day decision-making. One example of TEK is cultural burning or prescribed burning, which is becoming more prevalent in land use practices with the aim of improving water flows. When water management (and land use management) decisions are made without reference to California Native American Tribes' relationships to water and/or TEK, these decisions may result in a lack of access to water, adverse changes to water quality, and unmanaged water diversions, all of which have significant impacts on the lifeways of California Native American Tribes.

For more information on TEK and cultural burning, as well as on ways to incorporate them into water management decisions, see the articles related to this resource management strategy report in *California Water Pan Update 2013*, Volume 4, *Reference Guide*.

Implications for Water Management

Understanding the activities and accomplishments of past groups is important because the decisions made in the present are often influenced by the past. Simply stated, in order to understand the future, there first must be an understanding of the common past and heritage shared by all. This is particularly relevant within California, as the state's history is inextricably bound to the availability and development of water infrastructure. Without understanding the basis and context of existing infrastructure and management, it is difficult to understand the consequences of future actions.

In today's context, cultural practices and perspectives may also be a source of conflict or result in special management needs. When immigrants bring cultural practices to California and continue to observe them, those practices sometimes result in unintended consequences. For example, a food supply even partially based on subsistence fishing may expose a community to high levels of contaminants. In other cases,

when well-intended parties introduce non-native species without an understanding of the potential impacts, native species often suffer.

Historic practices that were of high utility at one time, such as gold mining, have created unintended consequences resulting from demands of competing uses or increased concerns over potential negative impacts. Gold mining left residual effects such as erosion, sedimentation, and mercury contamination. Add increased population growth and urbanization, and water quality impacts are exacerbated. Some historic practices may not have been a problem in more rural or agrarian settings, but are now in conflict with other values. Moreover, conflicts can arise as communities attempt to retain historic character in the face of dramatic change.

A sample of other current water management issues directly tied to past economic and development patterns are:

- Placer mining legacy issues of heavy metals contamination.
- Reclamation of floodplains and wetlands and developing them.
- Hydropower operations and consequences for sediment management, fish passage, and water flows and temperature.
- A hybrid system of water rights that encompasses riparian and appropriate rights and adjudicated groundwater basins.
- Historic placement of industrial facilities and dairies near waterways to help manage waste, which now results in legacy issues.
- Logging activities and flash dams, which modified watersheds.
- Construction of large-scale water infrastructure systems, which have fundamentally changed many areas of the state.
- Railroad construction and the dewatering of high-elevation meadows.

Today there is a new urgency in planning and protecting the shoreline for water-dependent uses. Many view the preservation of land for water-dependent uses, in part, as the preservation of the historical and cultural resources that contribute to the charm of coastal communities. Policy- makers have used restrictive zoning, tax abatement, public acquisition of critical parcels through fee-simple or less-than-fee purchases, and transfer of development rights to surrounding lands to conserve those lands best suited for water-dependent uses. The public benefits are protected or required. The unique characteristics of waterfronts provide a wide array of public benefits involving the economy and jobs, the culture of the community, the physical environment, access to the waterfront, and many other dimensions. These public benefits provide local communities with both the rationale and the goals for developing programs to preserve and maintain water- dependent uses (Walker and Arnn 1998).

Potential Benefits

In addition to ensuring compliance with relevant legal mandates to consider culture, the consideration of culture and cultural activities can help frame management decisions. Cultural activities can assist in developing sustainable management decisions (see *California Water Plan Update 2013*, Volume 4, *Reference Guide*, the articles on cultural burning and TEK). A failure to utilize cultural considerations can have significant cultural and political impacts, which may result in communities delaying projects and or funding for essential projects. Likewise, cultural activities can help frame and promote needed management decisions, particularly in the following ways.

- 1. Using traditional knowledge and practices to better sustain and integrate water management and provide models of sustainability.
- 2. Continuing passage of traditional practices and knowledge to future generations.
- 3. Improving recognition and support of cultural diversity and heritage resources.
- 4. Creating potential partners and alliances for projects, and leveraging different funding sources.
- 5. Preserving a community's and a culture's understanding of California's history.
- 6. Understanding the historical context for community establishment, avoiding repetition of past problems, recognizing the challenges for sustainability, and ensuring remediation.
- 7. Avoiding conflict and litigation.
- 8. Avoiding costs (remediation).
- 9. Understanding cultural implications associated with sea level rise, adaptation, and mitigation responses.
- 10. Protecting the integrity of peace of mind, quality of life, and life passages.
- 11. Serving as models of sustainability.
- 12. Learning more about natural processes (rivers/oceans are teachers).
- 13. Complying with cultural resource management laws, requirements for State agencies to have inventory of historic assets and report them to the Office of Historic Protection, under the auspices of the California Department of Parks and Recreation.
- 14. Understanding perspectives that influence water conservation and water management approaches.

Potential Costs

Sample costs associated with furthering the incorporation of cultural considerations into water management decisions include:

- Education and outreach.
- Restoration.
- Research.
- Mitigation.
- Retreat.
- Historic preservation involving taking inventory, evaluating structures for significance, and making management plans (e.g., cultural landscape management plans). Costs depend on scale.
- Interpretive exhibits, markers, plaques.
- Legal considerations. State and federal laws support the consideration of culture in resource management decisions. (*California Water Plan Update 2013*, Volume 4, *Reference Guide*, provides some information on existing laws.)
- Repatriation.

Major Implementation Issues

- 1. Lack of information and education regarding which laws apply and the ability to determine who is responsible.
- 2. Private land owners have considerations that differ from government agencies when cultural remains or artifacts are found on their property.
- 3. Concerns similar to those associated with habitat for endangered species (i.e., safe harbor) that protection or mitigation efforts may constrain future choices. Once there is a historic designation, it is difficult to remove a building.

- 4. Inherent rights to access and use the waters of the State bottom of the river versus banks of the river (Article 10 of the California Constitution).
- 5. Coastal access triggers discussion of mean low- and high-tide levels.
- 6. Lack of information regarding whom to contact, which procedures apply, and the hiring process involved for cultural monitors and archaeologists.
- 7. Lack of agency alignment regarding roles and responsibilities; relevant issues may not be referred to other, related programs.
- 8. Cultural distrust based on past experiences makes communication difficult with regard to cultural considerations.
- 9. Economic impacts related to addressing non-native species and dependence on revenue from existing invasive species (e.g., striped bass).
- 10. Information on cultural and historical resources exists in various databases. Some of the information, such as regional information centers, is a fee-for-service basis.
- 11. Important water resources may originate in areas with little ability to influence public discourse.

Climate Change

Climate change is projected to have a significant impact on water and water-dependent resources in California. Increased air temperatures will result in warmer water temperatures, a shift in precipitation with more precipitation falling as rain rather than snow, more frequent and intense droughts, and rising sea levels. While future precipitation is somewhat uncertain, greater flood magnitudes are anticipated to result from more frequent atmospheric river-storm events (Dettinger 2011). In addition, changes in the type and timing of precipitation will result in altered surface runoff and volumes, with more runoff occurring in the winter and less in the spring and summer. These changes will affect the water-dependent resources that currently support many cultural activities.

Changes in temperature and precipitation will affect ecosystems throughout the state and affect the subsistence activities that these ecosystems support, especially those that rely on specific species of plants and animals that are particularly vulnerable to the projected changes. Changes in surface runoff and volume, greater salinity intrusion associated with sea level rise, and warmer water temperatures will also affect recreation and spiritual practices associated with water as water levels, stream flows, and water quality are reduced. Historic preservation activities will also be affected, with important cultural sites being at greater risk as a result of exposure during extended drought periods, inundation, or physical damage during extreme flood events. More frequent and intense wildfires could also affect all of these cultural activities

Adaptation

Probably the biggest impact on water-dependent culture resources will come from large-scale ecosystem changes. On the other hand, while climate change creates challenges for ecosystems, maintaining and creating healthy and resilient ecosystems can also reduce the impacts associated with the anticipated changes in temperature and hydrology. Certain actions, such as high- elevation meadow restoration, can slow down increased winter runoff, allowing it to recharge underlying aquifers and then slowly release that water to help maintain summer in-stream flows. Floodplain restoration also provides similar benefits by protecting water resources while also providing critical habitat for many species. In coastal areas,

wetlands can provide a buffer against rising sea levels while improving water quality and providing habitat for many species.

Mitigation

Provide outreach and financial and technical assistance to the extent feasible to protect culture resources and increase better understanding of a) carbon sequestration potential with watershed and riparian forests, and b) water conservation and water use efficiency for climate change mitigation.

- 1. Mitigate, minimize, and reduce greenhouse gas emissions related to water project impacts on culture resources, to the extent feasible.
- 2. Identify tribal opportunities for water recycling and renewable energy and promote understanding of cultural practices and implications associated with climate change mitigation and responses.
- 3. Provide benefits and incentives for tribal water and energy-use efficiency projects.

Other resource management strategy reports.

- *Urban Water Use Efficiency* describes attitudes about recycled water, water meters, lawns, and desalination.
- Flood Management discusses lifestyles and land use.
- *Water Transfers* discusses how, as timing of water deliveries from natural systems changes, the traditional approaches for water transfers need to be revisited.
- *Matching Water Quality to Use* recognizes that not all water uses require the same quality of water. Conflicts can occur when water designated as non-potable is accessible to the public, who may not be aware that the water quality does not meet public health standards.
- *Pollution Prevention* discusses proper land-use management practices to prevent sediments and pollutants from entering water bodies.
- *Ecosystem Restoration* discusses rehabilitating human-altered landscapes and biological communities for their sustainability and enjoyment of current and future use.
- *Forest Management* discusses prescribed burning, the impacts of forest management, and other activities that affect water quantity and quality.
- *Land Use Planning and Management* discusses the physical environmental, economic, and social impacts of land use planning and water management.
- *Outreach and Engagement* discusses the tools and practices by water management agencies that allow groups and individuals to contribute to good water management outcomes.
- *Water-Dependent Recreation* provides additional discussion on recreational aspects of culture and water.

The cultural context needs to be considered when implementing any resource management strategy. Every approach requires looking at the cultural context, and any given land use activity may require a cultural resource inventory.

Recommendations

1. Water management agencies should have an appointed preservation officer who is responsible for cultural resource stewardship, developing policies and plans for the protection of historical resources, and ensuring that the agency follows these policies as well as applicable State and federal requirements.

- 2. Water management agencies should have cultural resource management programs, which include the following:
 - A. Inventory of all cultural resources within the jurisdiction of the agency.
 - B. Program of systematic condition assessment of cultural resources.
 - C. Develop treatment plans and prioritized programs for routine maintenance of individual resources.
 - D. Establish and maintain a data file for each cultural resource or groups of resources organized by field division(s).
 - E. Identified research goals for archaeological, ethnographic, and historical research proposed within the jurisdiction.
 - F. Management of any archaeological or historical object collections maintained by the agency.
 - G. Establish and maintain relationships with California Native American Tribes and communities who may have an interest in the cultural resources of the agency.
 - H. Staff training and education about cultural resource management.
 - I. Coordination with local archaeological and historical societies and other groups with an interest in cultural resource protection.
- 3. Educate the public about the Surfrider Foundation, the Bolsa Chica \$150 million settlement, *Cadillac Desert* (Marc Reisner), Mary Austin, Tahoe Blue, and Friends of the River.
- 4. Educate children about how watersheds work. Add the hydrologic cycle to the California education standard. Every student should learn the hydrologic cycle from headwater to ocean, as well as the impacts and dependency people have on water.
- 5. Expand inclusion and integration of traditional/indigenous practices and knowledge in resources management and planning processes and decisions.
- 6. Educate the public about resource stewardship activities associated with different groups and organizations.
- 7. Centralize information on cultural and historical resources into a single database.
- 8. Protect sensitive sites from vandalism.
- 9. Investigate use of the General Planning Process to better integrate water and cultural considerations.
- 10. Collaboratively identify statewide, local, and inter-agency efforts to implement early engagement and incorporation of culture to ensure non-duplication of efforts and maximize resources.

References

References Cited

- Dettinger M. 2011. "Climate Change, Atmospheric Rivers, and Floods in California A Multimodel Analysis of Storm Frequency and Magnitude Changes." *Journal of the American Water Resources Association* 47(3):514-523. DOI: 10.1111/j.1752-1688.2011.00546.x.
- Walker K, and M Arnn. 1998. "Preserving Waterfronts for Water Dependent Uses." National Oceanic and Atmospheric Administration, State of the Coast Report. Silver Spring (MD). Viewed online at: http://state_of_coast.noaa.gov/ bulletins/html/wdu_11/wdu.html.

Personal Communications

Dougherty E. Director, Wholly H2O, Oakland (CA). Oct. 24, 2013 — e-mail correspondence with Beutler L, executive facilitator, California Water Plan Update 2013, and Water Resources Group, MWH Americas, Sacramento (CA).

Goode R. Chairman, North Fork Mono Tribe, Oct. 18, 2011 - personal communication.

Additional References

California

Alvarez M. 1994/95. "Mount Shasta: A Question of Power." News from Native California 8, no. 3:4-7.

- Alvitre C. 2011. "Launching a Dream: Reviving Tongva Maritime Traditions." News from Native California 24, 4:18-23. Anderson MK. 2005. Tending the Wild: Native American Knowledge and the Management of California's Natural Resources. Berkeley (CA): University of California Press.
- Anderson MK. 2005. *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*. Berkeley (CA): University of California Press.
- Andreas AJ. 1996 (Summer). "Native Americans and Archaeology, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:5.
- Bacher D. 2010/11. "Ceremony at Danaka: Kashaya Pomo Leaders Mark Closure of Sacred Site," *News* from Native California 24, 2, 4-5, 9-10, 27.
- Belardes DL. 1996. "The Ancestral Homeland and Archaeology, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:6-7.
- California Department of Water Resources. 2009. *Tribal Water Stories*. 2009 Tribal Water Summit. Sacramento (CA). Viewed online at: http://www.waterplan.water.ca.gov/docs/tws/TribalWaterStories_FullBooklet_07-13-10.pdf.
- Castro G. 1996. "Educating Ourselves about Archaeology, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:9-11.
- Chartkoff J. 1996. "Relationships between Archaeologists and Native Americans in the History of the Society for California Archaeology, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:2-3.

Cordero R. 2012. "The Ancestors are Dreaming Us." News from Native California 25, 3:4-5, 24-27.

Cunningham F. 2005. "Take Care of the Land and the Land Will Take Care of You: Traditional Ecology in Native California." News from Native California 18, no. 4:24-34.

Cunningham L. 2010. A State of Change: Forgotten Landscapes of California. Berkeley (CA): Heyday.

- De Barros P. 1996. "The SCA's Native American Programs Committee: Improving Communication and Cooperation between Native Americans and Archaeologists, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:25-27.
- De Buys W, and J Myers. 1999. *Salt Dreams: Land & Water in Low-Down California*. Albuquerque (NM): University of New Mexico Press.
- Duane TP. 1999. *Shaping the Sierra: Nature, Culture, and Conflict in the Changing West*. Berkeley (CA): University of California Press.
- Dubin M. 2007/08. "'Pull for the Ancient Ones': Crossing the Santa Barbara Channel in a Tomol." *News from Native California* 21, 2:20-29.
- ———. 2010. "Wishtoyo Brings Life to Ancient Chumash Village Site." News from Native California 23, 3:4-5, 22-23.
- Foster DG, and J Betts. 2004. History of California Department of Forestry and Fire Protection Archaeology Program 1970-2004. CDF Archaeological Report, No. 30. June. Viewed online at: http://www.fire.ca.gov/resource_mgt/ archaeology/downloads/cdf_history.pdf. Accessed: March 26, 2013.
- Fuller R. 1996. "The Sierra Me-Wuk Cultural and Historic Preservation Committee, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:7-9.
- Goode RW. 1996. "Archaeology and the Native American Perspective, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:11-14.
- Gordon J. 1996/97. "Hooking Eels." News from Native California 10, 2:9-10.
- Hallowell J, and C Hallowell (eds). 2011. *Take Me to the River: Fishing, Swimming, and Dreaming on the San Joaquin.* Berkeley (CA): Heyday.
- Hanly B. 1996/97. "Fish Camp." News from Native California 10, 2:3-7.
- Haro D. 1996. "The Good, the Bad, and the Ugly, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4, 15-19.
- High K. 2011. "Haramokngna Comeback." News from Native California 24, 3:24-27.
- Jurmain C, D Lavender, and LL Meyer. 2011. "Rancho Los Alamitos: Povuu'ngna, a Time of Beginning." *News from Native California* 24, 3:8-10.
- Kalt J. 2007 (Summer). "Public Lands Traditional Gathering Policy Finalized." *News from Native California* 20, 4:7-8.

- Kampion D. 1997. Stoked: A History of Surf Culture. Los Angeles (CA): General Publishing Group.
- Kennard C. 2005/06. "Afloat on the Sacramento." News from Native California 19, 2:8-11.
- Klasky PM. 2009/10. "The Salt Song Trail Map: The Sacred Landscape of the Nuwuvi People." *News* from Native California 23, 2:8-10.
- Frank L, and K Hoagland. 2007. *First Families: A Photographic History of California Indians*. Berkeley (CA): Heyday Books.
- Lara Sr., W. 1996. "Respect for the Dead, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:21-22.
- Lightfoot KG, and O Parrish. 2009. *California Indians and Their Environment: An Introduction*. Berkeley (CA): University of California Press.
- Lightfoot KG. 2006. "Rethinking Archaeological Field Methods." *News from Native California* 19, 3:21-24.
- ------. 2006 (Fall). "Sensing Archaeology Under Our Feet: The Potential for Geophysical Survey in Native California." *News from Native California* 20, 1:29-31, 37.
- Love B. 1996. "Strategies for Indian Participation in Cultural Resource Management, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:29-31.
- Lucich G. 2001. "Along the Feather River." News from Native California 14, 3:6-8.
- Madrigal A. 2008. Sovereignty, Land and Water: Building Tribal Environmental and Cultural Programs on the Cahuilla and Twenty-Nine Palms Reservations. Riverside (CA): California Center for Indian Nations.
- Margolin M. 1994/95. "Living in a Well-Ordered World: Indian People of Northwestern California." *News from Native California* 8, 3:1-16.
- Middleton BR. 2007/08. "Mercury in Our Water, Our Fish and Our People: Raising Awareness," *News from Native California* 21, 2:40, 43.
 - ——. 2009/10. "'Let This All Return to Us:' Working to Reclaim Land through the Pacific Forest and Watershed Lands Stewardship Council." *News from Native California* 23, 2:4-7, 15, 34-35.
 - ——. 2011. Trust in the Land: New Directions in Tribal Conservation. Tucson (AZ): University of Arizona Press. Morrison P. 2001. Río L.A.: Tales from the Los Angeles River. Santa Monica (CA): Angel City Press.
- Moisa R, and M Margolin (eds). 1996. "California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:1-32.

Morrison P. 2001. Río L.A.: Tales from the Los Angeles River. Santa Monica (CA): Angel City Press.

- Ortiz B. 2003. "Sudden Oak Death and California Indian Cultures." News from Native California 17, 1:8-10. Paulson L, with L Shoshone. 2011/12. "Saving Washoe Meadows." News from Native California 25, 2:24-25.
- Peña L. 2005. "Journey to the Sea." News from Native California 19, 1:4-7.
- Planas-Beck L. 1996. "When Archaeologists and Indians Cross Paths, California Indians & Archaeology: A Special Report." *News from Native California* 9, 4:23.
- Ramirez R, and D Small. 2009. "Revitalizing Ethnobotanical Knowledge in Southern California." *News from Native California* 23, 1:4-5, 26-27.
- Roberts C. 2011. "The Cycle of Life: An Indigenous Perspective on the Station Fire." *News from Native California* 24, 3:28, 41-42
- Ross J. 2000. "From Tide to Table." News from Native California 13, 3:38-39.
- Shoshone L. 2011/12. "Language Links the Washoe to Their Land and History." *News from Native California* 25, 2:26-27.
- Sonoquie M. 2011. "Koo-ko (Sturgeon)." News from Native California 25, 1:28-30.
- Stercho AM. 2006. The Importance of Place-Based Fisheries to the Karuk Tribe of California: A Socioeconomic Study. Master's Thesis, Arcata (CA): Humboldt State University, 222 pp. Viewed online at: http://humboldtdspace. calstate.edu/bitstream/handle/2148/87/STERCHO_FINAL_PROJECT.pdf?sequence=1. Accessed: October 31, 2012.
- Suntree S. 2010. *Sacred Sites: The Secret History of Southern California*. Lincoln (NE): University of Nebraska Press.
- Trevor, T. 1996/97. "Tomol Trek." News from Native California 10, 2:10-11.

Cultural Values and Natural Resources

- Galla A. (ed). 2012. *World Heritage: Benefits beyond Borders*. Cambridge (MA): Cambridge University Press.
- Kempton W, JS Boster, and JA Hartley. 1996. Environmental Values in American Culture. Cambridge (MA): MIT Press. Mann AT. 2010. Sacred Landscapes: The Threshold between Worlds. New York (NY): Sterling Publishing.
- National Research Council. 2008. *Hydrology, Ecology, and Fishes of the Klamath River Basin*. Washington (DC): National Academies Press.

Stephenson J. 2007. "Many Perceptions, One Landscape." Landscape Review 11(2):9-30.

- Stephenson J. 2008. "The Cultural Values Model: An Integrated Approach to Values in Landscapes." Landscape and Urban Planning 84:127-139.
- U.S. Environmental Protection Agency. 2002. *Community Culture and the Environment: A Guide to Understanding a Sense of Place* (EPA 842-B-01-003), Office of Water, Washington, DC.
- Verschuuren B. 2006. An Overview of Cultural and Spiritual Values in Ecosystem Management and Conservation Strategies. Viewed online at: http://www.bioculturaldiversity.net/Downloads/Papers%20participants/Verschuuren. pdf. Accessed: March 23, 2013.
- 2007. Believing is Seeing: Integrating Cultural and Spiritual Values in Conservation Management. Foundation for Sustainable Development in collaboration with EarthCollective and The World Commission on Protected Areas of IUCN. Viewed online at: http://cmsdata.iucn.org/downloads/believing_is_seeing_reportfinal_07__verschuuren.pdf. Accessed: October 31, 2012.

Cultural Resource Management, Historic Preservation, and Public Lands Management

- Alanen AR, and RZ Melnick (eds). 2000. *Preserving Cultural Landscapes in America*. Baltimore (MD): Johns Hopkins University Press.
- Brown J, N Mitchell, and M Beresford (eds). 2005. *The Protected Landscape Approach: Linking Nature, Culture and Community*. Gland: IUCN-The World Conservation Union.
- Burton L. 2002. *Worship and Wilderness: Culture, Religion, and Law in Public Lands Management.* Madison (WI): University of Wisconsin Press.
- California Department of Transportation. 2000. *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures*. Sacramento (CA): Division of Environmental Analysis, California Department of Transportation. Viewed online at http://www.dot.ca.gov/ser/downloads/cultural/CanalsDitches.pdf. Accessed: October 31, 2012.
- 2008. A Historical Context and Archaeological Research Design for Mining Properties in California. Sacramento (CA): Division of Environmental Analysis, California Department of Transportation. Viewed online at: http://www.dot.ca.gov/ser/downloads/cultural/mining_study.pdf. Accessed: October 31, 2012.
 - 2007. A Historical Context and Archaeological Research Design for Agricultural Properties in California. Sacramento (CA): Division of Environmental Analysis, California Department of Transportation. Viewed online at: http://www.dot.ca.gov/ser/downloads/cultural/agstudy.zip. Accessed: October 31, 2012.
- Conservation Study Institute PLF/Atlantic Center for the Environment. 2003. A Handbook for Managers of Cultural Landscapes with Natural Resource Values. Conservation Stewardship Publication No.

5. Viewed online at http:// www.nps.gov/csi/csihandbook/handbook.pdf. Accessed: October 31, 2012.

- Hardesty DL, and BJ Little. 2000. *Assessing Site Significance: A Guide for Archaeologists and Historians*. Walnut Creek (CA): AltaMira Press.
- Harmon D. 2004. "Intangible Values of Protected Areas: What Are They? Why Do They Matter?" The George Wright Forum 21, 2:9-22. Viewed online at: http://www.cr.nps.gov/history/hisnps/npshistory/212harmon.pdf. Accessed: October 31, 2012.
- Head L. 2000. *Cultural Landscapes and Environmental Change*. New York (NY): Oxford University Press.
- Hufford M (ed). 1994. *Conserving Culture: A New Discourse on Heritage*. Urbana and Chicago (IL): University of Illinois Press.
- Hutt S, CM, Blanco WE Stern, and SN Harris. 2004. *Cultural Property Law: A Practitioner's Guide to the Management, Protection, and Preservation of Heritage Resources*. Chicago (IL): ABA Publishing.
- Infield M, and A Mugish. 2010. Integrating Cultural, Spiritual and Ethical Dimensions into Conservation in a Rapidly Changing World. MacArthur Foundation White Paper Series. Viewed online at: http://production.macfound.org/ media/files/CSD_Culture_White_Paper.pdf. Accessed: October 31, 2012.
- Ishitani-Hata N. 1992. *The Historic Preservation Movement in California, 1940-1976.* Sacramento (CA): California Department of Parks and Recreation.
- Josep-Maria M, and T Papayannis (eds). 2007. *Protected Areas and Spirituality: Proceedings of the First Workshop of The Delos Initiative, Montserrat 2006*. Gland, Switzerland: IUCN and Montserrat, Spain: Publicacions de l'Abadia de Montserrat.
- King TF. 1998. *Cultural Resource Laws & Practice: An Introductory Guide*. Walnut Creek (CA): AltaMira Press.
- ——. 2001. *Federal Planning and Historic Places: The Section 106 Process*. Walnut Creek (CA): AltaMira Press.
- ———. 2002. *Thinking about Cultural Resource Management: Essays from the Edge*. Walnut Creek (CA): AltaMira Press.
- ———. 2003. *Places That Count: Traditional Cultural Properties in Cultural Resource Management*. Walnut Creek (CA): AltaMira Press.
- Parker PL. 1990. *Keepers of the Treasures: Protecting Historic Properties and Cultural Traditions on Indian Lands*. Washington (DC): U.S. Department of the Interior, National Park Service.

- Parker PL, and TF King. 1998. National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties, Appendix I. Washington (DC): U.S. Department of the Interior, National Park Service. Viewed online at: http://www.nps.gov/nr/publications/bulletins/pdfs/nrb38.pdf. Accessed: April 18, 2013.
- Richman JR, and MP Forsyth. 2004. *Legal Perspectives on Cultural Resources*. Walnut Creek (CA): AltaMira Press.

Native Americans and Cultural Resource Management

- Gulliford A. 2000. *Sacred Objects and Sacred Places: Preserving Tribal Traditions*. Boulder (CO): University Press of Colorado.
- Stapp DC, and MS Burney. 2002. *Tribal Cultural Resource Management: The Full Circle to Stewardship*. Walnut Creek (CA): AltaMira Press.
- Swidler N, KE Dongoske, R Anyon, and AS Downer (eds). 1997. *Native Americans and Archaeologists:* Stepping Stones to Common Ground. Walnut Creek (CA): AltaMira Press.
- Watkins J. 2000. *Indigenous Archaeology: American Indian Values and Scientific Practice*. Walnut Creek (CA): AltaMira Press.

Traditional Ecological Knowledge/Indigenous Knowledge

- Berkes F. 1999. Sacred Ecology: Traditional Ecological Knowledge and Resource Management. Philadelphia (PA): Taylor & Francis.
- Karuk Tribe. 2010. Integrating Traditional Ecological Knowledge within Natural Resource Management. Viewed online at: http://tribalclimate.uoregon.edu/files/2010/11/Karuk_profile_5_14-12 web1.pdf.
- MacKendrick K. 2009. "Climate Change Adaptation for Cultural and Natural Resource Resilience: A Look at Planning for Climate Change in Two Native Nations in the Pacific Northwest." (Master thesis.) Viewed online at: http://www.tribesandclimatechange.org/docs/tribes_304.pdf.
- Menzies CR (ed). 2006. *Traditional Ecological Knowledge and Natural Resource Management*. Lincoln (NE): University of Nebraska Press.
- Pretty J., B Adams, F Berkes, SF de Athayde, N Dudley, E Hunn, L Maffi, K Milton, D Rapport, P Robbins, C Samson, E Sterling, S Stolton, K. Takeuchi, A Tsing, E Vintinnerk, and S Pilgrim. 2008. "How Do Biodiversity and Culture Intersect?" Plenary paper presented at Conference "Sustaining Cultural and Biological Diversity In a Rapidly Changing World: Lessons for Global Policy". Organized by American Museum of Natural History's Center for Biodiversity and Conservation, IUCN-The World Conservation Union/Theme on Culture and Conservation, and Terralingua, April 2-5, 2008. Viewed online at: http://www.greenexercise.org/pdf/How%20do%20 biodiversity%20and%20culture%20intersect.pdf. Accessed: March 23, 2013.

Pretty J, B Adams, F Berkes, SF de Athayde, N Dudley, E Hunn, L Maffi, K Milton, D Rapport, P Robbins, E Sterling, S Stolton, A Tsing, E Vintinnerk, and S Pilgrim. 2009. "The Intersections Biological Diversity and Cultural Diversity: Towards Integration." Conservation and Society 7(2):100-112, 2009. Viewed online at: http://woods.stanford.edu/sites/default/files/documents/20121112-YES-The-Intersections-of-Biological-Diversity-and-Cultural-Diversity-Pretty-etal.pdf. Accessed: October 31, 2012.

- Ross A, R Sherman, JG Snodgrass, and HD Delcore. 2011. *Indigenous Peoples and the Collaborative Stewardship of Nature*. Walnut Creek (CA): Left Coast Press.
- Stevens S. 1997. *Conservation through Cultural Survival: Indigenous Peoples and Protected Areas*. Covelo (CA): Island Press.
- Vale TR (ed). 2002. Fire, Native Peoples, and the Natural Landscape. Covelo (CA): Island Press.

Federal Agencies

- National Marine Fisheries Service. 2007. Local Fisheries Knowledge Project. Viewed online at: http://www.st.nmfs.noaa. gov/lfkproject/02_c.definitions.htm. Accessed: April 18, 2013.
- U. S. Department of Agriculture, Natural Resources Conservation Services. 2010. Indigenous Stewardship Methods and NCRS Conservation Practices: Guidebook. Washington (DC). Viewed online at: http://www.fws.gov/ nativeamerican/graphics/NRCS_Indigenous_Stewardship_Methods.pdf. Accessed: April 18, 2013.
- U.S. Environmental Protection Agency. 2009. *Impacts of Climate Change on Tribes in the United States*. Viewed online at: http://www.epa.gov/oar/tribal/pdfs/Impacts%20of%20Climate%20Change%20on%20Tribes%20i n%20the%20 United%20States.pdf. Accessed: April, 18, 2013.
- U.S. Fish and Wildlife Service. 2005. "Traditional Environmental Knowledge in Federal Natural Resource Management Agencies." Sepez J., and H. Lazrus. Practicing Anthropology, 27, no 1. Viewed online at: http://www.fws.gov/nativeamerican/graphics/TEK_J_Sepez.pdf. Accessed: April 19, 2013.
 - —. 2011. Traditional Ecological Knowledge for Application by Service Scientists. Viewed online at: http://www.fws. gov/nativeamerican/graphics/TEK_Fact_Sheet.pdf. Accessed: April 18, 2013.
- U.S. Fish and Wildlife Service, Native American Liaison. 2013. "Traditional Ecological Knowledge." [Web page.] Viewed online at: http://www.fws.gov/nativeamerican/TEK.html. Accessed: April 18, 2013.
- U.S. Geological Survey. 2012. "Traditional Ecological Knowledge (TEK): An Introduction and Discussion of TEK's Potential to Inform Adaptive Management." MS Powerpoint presentation, April 16. Viewed online at: http://www.gcmrc.gov/about/twg/4_16_12/Fairley_TEK_PPT.pdf.

- University of Oregon and U.S. Department of Agriculture Forest Service. 2012. *A Synthesis of Literature on Traditional Ecological Knowledge and Climate Change*. Primary author: K. Vinyeta. Viewed online at: http://www.tribesandclimatechange.org/docs/tribes 511.pdf.
- . 2012. Guide for Tribal Leaders on U.S. Climate Change Programs. Donoghue E, and K. Lynn. Viewed online at: http://tribalclimate.uoregon.edu/files/2010/11/tribal_leaders_CC_guide_1-4-2012.pdf.
- -----. 2014. "Tribal Climate Change Project." [Web page.] Viewed online at: http://tribalclimate.uoregon.edu/.

Selected Articles, Case Studies, and Guidelines

- Assembly of Alaska Native Educators. 2000. *Guidelines for Respecting Cultural Knowledge*. Fairbanks (AK): Alaska Native Knowledge Network. Viewed online at: http://www.ankn.uaf.edu/publications/Knowledge.pdf.
 - ------. 2003. *Guidelines for Cross-Cultural Orientation Programs* Fairbanks (AK): Alaska Native Knowledge Network. Viewed online at: http://www.ankn.uaf.edu/publications/xcop.pdf.
- Calamia MA. 1999. "A Methodology for Incorporating Traditional Ecological Knowledge with Geographic Information Systems for Marine Resource Management in the Pacific." SPC Traditional Marine Resource Management and Knowledge Information Bulletin #10. Viewed online at: http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/ TRAD/10/TRAD10 02 Calamia.pdf.
- Donoghue EM, SA Thompson, and JC Bliss. 2010. "Tribal-Federal Collaboration in Resource Management." Journal of Ecological Anthropology 14:1. Viewed online at: http://shell.cas.usf.edu/jea/PDFs/DonoghueJEAVol14.pdf.
- Folke C. 2004. "Traditional Knowledge in Socio-Ecological Systems," Ecology and Society 9(3):7. Viewed online at: http://www.ecologyandsociety.org/vol9/iss3/art7/main.html.
- Lertzman DA. 2010. Best of Two Worlds: Traditional Ecological Knowledge and Western Science in Ecosystem-Based Management. BC Journal of Ecosystems and Management 10(3):104-126. Viewed online at: http://jem.forrex.org/ index.php/jem/article/viewFile/40/12.
- Mazzocchi F. 2006. "Western Science and Traditional Knowledge: Despite their variations, different forms of knowledge can learn from each other." Heidelberg (DE): European Molecular Biology Organization. EMBO reports 7:5. Viewed online at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1479546/pdf/7400693.pdf.

McClean KG. 2010. Advance Guard: Climate Change Impacts, Adaptation, Mitigation and Indigenous Peoples — A Compendium of Case Studies. Darwin (AU): United Nations University — Traditional Knowledge Initiative. Viewed online at: http://www.ias.unu.edu/resource_centre/UNU_Advance_Guard_Compendium_2010_final_web. pdf. Pretty J, B Adams, F Berkes, S Ferreira de Athayde, N Dudley, E Hunn, L Maffi, K Milton, D Rapport, P Robbins, E Sterling, S Stolton, A Tsing, E Vintinner, and S Pilgrim. 2009. "The Intersections Biological Diversity and Cultural Diversity: Towards Integration." Conservation and Society 7(2):100-112. Viewed online at: http://woods.stanford.edu/sites/default/files/documents/20121112-YES-The-Intersections-of-Biological-Diversity-and-Cultural-Diversity-Pretty-etal.pdf.

- Pretty J, B Adams, F Berkes, S Ferreira de Athayde, N Dudley, E Hunn, L Maffi, K Milton, D Rapport, P Robbins, C Samson, E Sterling, S Stolton, K Takeuchi, A Tsing, E Vintinner, and S Pilgrim. . "How Do Biodiversity and Culture Intersect?" Viewed online at: http://www.greenexercise.org/pdf/How%20do%20biodiversity%20and%20 culture%20intersect.pdf.
- Shebitz D. 2005. "Weaving Traditional Ecological Knowledge into the Restoration of Basketry Plants." Journal of Ecological Anthropology 9. Viewed online at: http://www.kean.edu/~dshebitz/publications/Weaving%20TEK%20 into%20Restoration%20of%20Basketry%20Plants.pdf.
- Simonelli R. 2008. "Climate Change and Indigenous Knowledge." Winds of Change (Summer). Viewed online at: http://www.cbp.ucar.edu/documents/Winds_of_Change_ClimateChange.pdf.

Water and Values

- Bodley JH. 1997. *Cultural Anthropology: Tribes, States, and the Global System*. Second edition. Mountain View (CA): Mayfield Publishing Company.
- Fagan B. 2011. Elixir: A History of Water and Humankind. New York (NY): Bloomsbury Press.
- McCool SF, RN Clark, and GH Stankey (eds). 2008. *Water and People: Challenges at the Interface of Symbolic and Utilitarian Values*. Gen. Tech. Rep. PNW-GTR-729. Portland (OR): U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.
- Scheldwald-van der Kley L, and L Reijerkerk. 2009. Water: A Way of Life, Sustainable Water Management in a Cultural Context. Boca Raton (FL): CRC Press.
- Strang V. 2001. Evaluating Water: Cultural Beliefs and Values about Water Quality, Use and Conservation. Hadleigh (UK): Water UK Publications.
- . 2004. The Meaning of Water. Oxford (UK): Berg Publishers.
- United Nations Educational, Scientific and Cultural Organization, World Water Assessment Program. 2003. *Water for People, Water for Life: The United Nations World Water Development Report.* New York (NY): Berghahn Books. Viewed online at: http://www.unesco.org/new/en/naturalsciences/environment/water/wwap/wwdr/wwdr1-2003/ downloads/. Accessed: December 12, 2012.