IGNITE!

Museums as Catalysts for Sustainability

Summary Report / March 2012

CAM CALIFORNIA ASSOCIATION OF MUSEUMS

GMI green museums INITIATIVE

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IGNITE!
Museums as Catalysts for Sustainability

EVENT SUMMARY

On Friday, October 14, 2011 IGNITE! Museums as Catalysts for Sustainability was held at seven host institutions across California:

1. Sunnylands Center & Gardens, Rancho Mirage
2. San Diego Zoo Global, San Diego
3. Aquarium of the Pacific, Long Beach
4. University of California, Merced Library, Merced
5. California Academy of Sciences, San Francisco
6. UC Davis Tahoe Environmental Research Center, Incline Village
7. Gateway Science Museum, Chico

Each site convened museum leaders, scientists, environmentalists, community stakeholders, and artists to discuss how to preserve ecosystems and promote healthy communities in their region (see attached list of participants). The day began with a keynote address by environmentalist, entrepreneur, and author Paul Hawken who spoke via simulcast from the Sunnylands Center (an archived version of his presentation is available on the CAM website). Then for the next several hours, each site independently discussed the following questions:

What are the top environmental challenges for our region?
Who is working to address these challenges?
And most importantly, how can museums be involved in the solutions?

After exploring fundamental ecological issues facing each region, each site imagined ways in which museums can be partners in finding solutions to these challenges, and initiate a plan, either formal or informal, to take action. This document summarizes these event outcomes.

Regional Outcomes

At the IGNITE event, each of the seven locations developed outcomes and/or action plans for their region. These outcomes range from a strong commitment to continue the conversations that began at the event to concrete action plans for the development of programming that will promote environmental awareness.

San Diego – A Collaborative Approach
Many participants in San Diego have been working together through the leadership and logistical framework of the Balboa Park Cultural Partnership's Sustainability Program. The IGNITE event gave institutions the opportunity to continue to deepen their relationships and expand their regional message. Outcomes in four overarching areas were outlined: Education, Outreach, Operations, and Finances. Specific actions include highlighting best practices and demonstrations, coordinated messaging, increasing civic partnerships, and collaborating to conserve resources.

IGNITE is spearheaded by the Green Museums Initiative (GMI), a program supported by the California Association of Museums (CAM)

Los Angeles/Santa Barbara – An Urban Approach
Participants in the Los Angeles Basin and Santa Barbara area represent the most urban region in the state with a population of 14.7 million or 39% of the state's population, and their discussions focused both regionally and globally. Climate change and water were determined to be the most critical issues and participants recognize that each issue and its solutions impact the other. Two potential projects were suggested: one regional and one statewide. A regional set of programs regarding climate change would use food as an entry point as people relate to their food supply. A larger concept – LA 2015 to 2050 or CA 2015 to 2050 (if other regions participate) – consists of dynamic programs for people to find solutions together, creating an emotional connection to the environment.

Southland Deserts – The Salton Sea Project
The participants at Sunnylands in the Southland Desert region decided to use the Salton Sea to discuss issues of sustainability. The Salton Sea addresses many concerns in the region including, water rights, wildlife management, land use, economics, sustainable energy, population and culture. It also allows them to discuss differing views on what is sustainable. The goal is to present the project in Fall 2013 and may include exhibits, programs, materials, or support for other organizations by providing event space.

Central Valley – The Pacific Flyway Project
Participants in the Central Valley discussed unifying characteristics of the valley and found inspiration in the Pacific Flyway as a way to tell a regional story of wildlife, water use, natural resources, and people. A collaborative project to develop a traveling exhibition, book, and other programming is planned. To show the interconnectedness of our statewide environment, the Salton Sea is part of the Pacific Flyway, so potential links between the Southlands Desert project, as well as other regional projects, and the Central Valley project will be explored.

San Francisco Bay & Monterey Bay Areas – A Continued Dialogue
Participants in the bay regions posed this question: How can we leverage the role of museums as respected and trusted institutions to inspire visitors and community to better understand and integrate sustainability into people's behaviors. While participants committed to continue the dialogue begun during IGNITE, they also developed a "10-Point Sustainability Compact." If pledged, museums would exercise leadership via their onsite operations, policies, and programs to achieve positive outcomes for California and activate stakeholders and generate new replicable models/approaches for critical areas, with specific metrics/targets.

Northern California and the Sierra Nevada – An Education Approach
Participants in northern California focused their attention on the role that formal and informal education plays in connecting people with nature.

With great concern for the impact of Nature Deficit Disorder, the discussion turned to solutions including Place-Based Education and other tangible steps such as streamlining locally available resources so they are more accessible to families and schools, supporting teachers by taking resources to them, and providing incentives to families to get kids out into nature. Participants will continue to explore new ways of enhancing formal and informal education.

Museums as Engaged Partners

The subtitle of IGNITE was deliberately chosen as a call to action—museums as catalysts for sustainability. GMI believes that museums are integral to solving environmental challenges through their involvement in education, conservation, preservation, advocacy, and community building. This happens through exhibits, programs, research, and partnerships, as well as through modeling sustainable practices. Participants in the IGNITE roundtable discussions reinforced this important role of museums, but their discussions underscored the need for museums to internalize and standardize green practices in both programming content and in operations. The following outlines four key factors, as suggested in the IGNITE discussions that are necessary for museums to be engaged partners in regional and global environmental issues.

1. ***Leadership***
California is fortunate to have many examples of museums that are engaged in sustainable operations and active in environmental education, including an increasing number of green museum buildings as designated by the United States Green Building Council's LEED certification program.

Through the Green Museums Initiative, CAM has shown statewide and national leadership by being one of the first and most active professional associations to support a sustainability initiative through its strategic plan, to "green" its conference and internal operations, and to actively promote environmental awareness in all programs and projects. The GMI's Green Museum Accord is the first in the country and calls on museums to pledge their commitment to adopt more sustainable procedures (See Attachment 3 for a list of current signees).

By hosting IGNITE, CAM's GMI literally sparked the building, rekindling, and reinforcing of community connections. The sentiment from event participants was that they did not want the momentum of their conversations to fade after the event. For some regions, a strong network of museums and community partners already exists and was strengthened by the time spent at IGNITE. For other regions, these connections are just beginning. Therefore leadership at a regional level is needed to continue conversations, build relationships, and plan for direct outcomes (i.e. an exhibition or research project). But how is this regional leadership developed and sustained?

2. *Time and* 3. *Resources*
Not surprisingly participants cited concerns about not having the time and resources to commit to new projects and initiatives. Some museums may see engagement in sustainability work as just one more challenge for an already stretched staff, budget, and facility.

Participants suggested that there is a great deal of expertise, existing content, technical details, and physical infrastructure in place that can be shared among museums. For example, museums that have developed green exhibit components can share software, hardware, or technical advice so that each museum does not have to start from scratch. Economies of scale can be put to use to benefit multiple sites.

4. *Confidence*
An underlying tenant in environmental education is to build confidence in people so that they feel informed and encouraged to change their behaviors in a positive way that benefits the environment. Scare tactics, global gloom and doom scenarios, and other negative approaches are not successful in promoting awareness, acceptance, concern, and action about environmental issues. Participants in IGNITE spoke of nature deficit disorder, lack of connection to one's surroundings, and lack of knowledge about what people can do at a personal level. This is true among visitors as well as museum staff. What can be done to promote confidence in museum professionals and their audiences?

Time and resources, leadership and confidence are all factors in the degree to which individual museums and the museum field embrace sustainability. IGNITE is meant to encourage museums to find the time, resources, and community partners to do so. GMI will continue to provide leadership at a statewide level and seek ways to encourage a desire and a confidence to make museums more environmentally sound.

IGNITE!

Museums as Catalysts for Sustainability

Continued Leadership from GMI

CAM and GMI will continue their leadership roles in advancing museums towards a more sustainable museum community. The following outcomes are planned for 2012:

- GMI will provide quarterly updates on the outcomes of IGNITE in each region
- GMI will continue to determine what resources best meet the needs of museums to encourage sustainable practices and programming
- GMI will continue to host and enhance the GMI website and Online Community
- GMI will give out an annual "green leader award" at the CAM conference to a museum or related organization that is advancing sustainable practices and programming (beginning 2013)

IGNITE The Art of Sustainability – Traveling Exhibition
Artists participating in the regional roundtable discussions will create artworks for a statewide traveling exhibition that will open at the UC Davis Design Museum in June 2012 and travel to museums through 2015.

Attachment 1

ACTIONS YOU CAN TAKE

A sampling of ideas from the event

There were literally hundreds of great ideas generated during IGNITE. The following have been selected for a "short list" of ideas that stand out as unique, positive, and applicable to all types and sizes of museums. Thanks to all of the participants who contributed these suggested actions!

- Ask "what information do visitors acquire in 2 seconds, 2 minutes, 2 hours?" and then program for each scenario.
- Promote the concept of "green pride" that is inclusive, accessible, and affordable.
- Keep up-to-date on current resources and share them with internally and externally. A great place to start is "The Short List: The Most Effective Actions U.S. Households Can Take to Curb Climate Change" by Gerald T. Gardner and Paul C. Stern.
- Be a central clearinghouse of information for the community (from useful tips and resources to how to conduct home energy audits, etc.).
- Engage membership and volunteers: organize inter-museum or neighborhood competitions to save water/energy or recycle; utilize collective buying power with businesses (ex: installation of solar power at home).
- Offer discounted admission for people who walk/bike/take public transit to museum.
- Do programming related to food! This topic is interconnected with so much: local and sustainable farms, healthy eating, culture and tradition, etc. It can also be used as a way to educate about larger issues associated with climate change, water use, and transportation.
- Do programming outside the museum, like an exhibit on sustainable clothing manufacturing at shopping malls or a video about a local sustainable business success story.
- Be aware of upcoming anniversaries: 2014 is the 100th anniversary since John Muir's death, 2016 celebrates 100 years of the National Park Service, etc.
- Give Community Green Awards to local organizations, businesses, teachers, and elected officials who are taking bold steps towards sustainability. Example: The biggest losers who conserve the most energy or water.
- Ask "what do you value?" Questioning our values as museums, visitors, and communities can open the door to meaningful conversations. Be a place to discuss our current system of values.
- Encourage town halls, community discussions, awareness-building events about local and regional issues. People need and want to be involved in the decision-making process. Remember to offer these opportunities in multiple languages.
- Collaborate, collaborate, collaborate! Other museums, nature centers, parks, libraries, environmental groups, tribal groups, governmental

agencies, utility providers, social service organizations, health care providers, retirement communities, schools, institutes of higher education, businesses, community supported agriculture groups, research scientists, etc. The possibilities are endless!

- Tap into what is going on locally with the new statewide Education and the Environment Initiative.
- Celebrate past/historical conservation success stories. Utilize the resources of local history museums and archives.
- Provide a "menu" of offerings to teachers, but instead of making them come to us, bring it to the teachers at their school sites and make available online.
- Tap into to ecotourism, geotourism, and trends such as geocaching and citizen science projects that get people outdoors.
- Focus on the beauty and abundance in your region. Think about fostering transformative experiences.
- Utilize new methods of interpretation: storytelling, place-based education, service learning, lifelong learning, etc.
- Remember that all programming and efforts surrounding sustainability should attempt to overcome the digital divide and literacy divide.
- Create highly visible on-site demonstration projects for sustainability (recycling, composting, energy/water conservation, etc.)
- Target financial institutions and other funders by demonstrating return on investment for sustainability projects.
- Pool, consolidate, and outsource energy-intensive operations to more efficient resources and technology (computer server consolidation, cloud computing, etc.)
- Share resources with other museums (technological, programmatic, expertise, left over exhibit materials, etc.)
- Build sustainability topics into board orientation, staff/docent training, teacher professional development, etc.
- Sign the Green Museums Accord!
- Tell the media!

Attachment 2

THE SPARK

Sent to all attendees prior to the IGNITE event

> *Fire is a positive force in nature. It clears away debris from the forest floor allowing for new growth and rejuvenation. The intensity of the fire's heat prompts the cones of the Giant Sequoia to open up, releasing seeds into the freshly exposed and fertile topsoil. Plants take root and grow. But when fire is suppressed, these natural cycles are disrupted. Debris builds up and new plants cannot take root. When fire finally does occur, the results can be devastating. Wildfires of this sort are a negative force.*

The simple ecological principal at work here inspired the IGNITE round-tables; when ignited under the right conditions fire brings positive change. Thus, the purpose of these meetings is to ignite positive change through discussions, relationship building, and regional projects between museums and their communities. The assumptions behind this project are self-evident:

- California is facing critical environmental challenges
- While there are common issues globally and statewide, there are also region-specific problems
- Focusing on these issues at the local and regional levels inspires buy-in and feels manageable to people
- Collaboration is key to solving these problems
- Museums can and want to play a role in solving these problems

Further inspiration for this project comes from the myriad of people throughout history who have attempted to envision, explain, and understand California through science, art, literature, and spirituality. Their collective realization is that there is no one California and thus there can be no one way to approach the solutions to the environmental, economic, and social problems facing our state.

The environmental historian and author Philip Fradkin offers this summary for our state:

> *It is a richly textured landscape of great extremes and extreme changes: the highest mountains, the lowest valley, the oldest life-forms, the youngest population, great wealth, grinding poverty, the tallest trees, dwarf forests, abundant water, widespread aridity, startling fecundity, great beauty, and violent death. The landscape is deceptive. Great pleasure and great pain ripple across the surface. This region of moderate climate and gentle, flower-dappled hills can beguile or, alternatively, burst into deadly flames.*[1]

Through IGNITE we hope to lessen the impact of those deadly flames by fostering natural cycles of ongoing collaboration that muster the power of museums, science, art, and community leadership to solve our most pressing environmental issues. By starting and enhancing existing collaborative efforts at the regional level, we believe a sustainable future for California is possible.

[1] Fradkin, Philip. (1995), *The Seven States of California: A Natural and Human History*. Berkeley: University of California Press.

The Issues

The complexity of California and the ecological issues facing it are political, economic, and social, and are shaped by our geography and our history. In the briefest of terms, California's environmental issues are summarized here. These topics are by no means definitive and of course cross regional, state, and international boundaries. We selected seven regions in the state that are roughly divided by geographical features, but also defined by population centers. While each region faces unique challenges, common issues exist as well, including:

Access to clean water / Water resources – California's immense and controversial system of water delivery includes dozens of dams and reservoirs, hundreds of miles of canals and aqueducts, and thousands of miles of pipes that carry water from places of abundant water (both inside and outside the state) to places that otherwise could not support their populations and development. An ever-increasing population in California will continue to strain this system.

Energy production – Pushed to capacity is an evolving system of energy production in California made up of natural gas, nuclear, hydroelectric, imported and domestic oil and natural gas, as well as increasing renewable sources. As demand increases, new and expanded sources of energy are needed.

A changing climate – Changing patterns of seasons, weather, and temperature; sea level rise; disruptions to migration patterns and other wildlife impacts; and a rise in heat-related illness and diseases will all have adverse effects on California's economy, landscape, and the health and well-being of its residents.

Closure of California State Parks – The eminent closure of 70 of the state's 278 parks may result in a loss of cultural and natural heritage, and will certainly mean the loss of access to public land for recreation. What these closures will mean for preservation, collections management, safety, maintenance, species protection, and public land control and ownership remains to be seen.

Throughout the state, we find ecological issues that impact soil, water, air, flora, fauna, as well as our systems of food production, energy supply, water supply, industry, and development. Animal, vegetable, and mineral are all impacted. But, there are efforts at every point along the way where through leadership, grassroots mobilization, innovation, and technology these problems are being addressed. There is great challenge and great hope. And with museums as participants in these efforts, a sustainable future is all the more attainable.

The following are brief descriptions of the environmental issues facing each region.

Southland Deserts

The southland deserts and Inland Empire are the state's most arid region stretching from the Mojave to the Colorado and the border with Mexico. Ecological issues facing this region include:

- ***Water Resources*** – Freshwater in this region comes from groundwater, surface water, and water imported from the Delta, the Santa Ana River watershed, and the Colorado River. The reduced amounts of imported water from the Delta and Colorado River raise concerns about the future accessibility of water.
- ***Water Quality*** – Groundwater and surface water contamination is also an issue. Suspected sources of pollutants are dairy farms, landfill sites, urban runoff, mining operations, and agriculture.
- ***Solar Energy Development*** – With year-round sunshine, California's desert regions are ideal for the development of solar energy facilities. Yet the construction of solar energy facilities requires large amounts of freshwater and thousands of acres of land, leading to the removal of vegetation, the disruption of soil, and habitat destruction.
- ***Urban Development/Sprawl*** – Populations in the inland empire are expected to rise substantially in the next few decades. This is an area of high unemployment where people have to commute long distances to find jobs, contributing to traffic congestion and poor air quality. Strains on infrastructure, water supply, and energy production continue.
- ***Land Conservation*** – The California Desert Protection Act of 2010 protects 1.1 million acres of desert land classifying the land as national monuments and wildlife areas. Additionally, preserves and parks help to protect a region in rapid growth where threatened and endangered species are on the rise.
- ***Invasive Species*** – Also of threat to habitats are the ever-invading presence of invasive plants and animals.

South Central Coast

The South-Central Coastal area ranges from Santa Barbara to Orange County with a semi-arid climate. Ecological issues facing this region include:

- ***Increase in Droughts*** – Climate change is changing precipitation patters. Less rain is expected to fall in the coming years. The Sierra Snowpack, one of Southern California's water supplies, has been shrinking and is melting sooner and faster. In the Sierras, precipitation is falling more as rain than snow and current infrastructure is inundated with early melting water and cannot capture all the water, leading to less water available in the dry summer months. Population growth, especially in arid areas, will increase water consumption and water supplies might not be able to keep up with demand.

Green Museums Initiative Committee with research provided by interns Helen Trejo, Kirsten Griesmaier and Rebekkah Dworski.

- ***Increase in "Fire Weather"*** – Higher temperatures and less water available cause vegetation to dry out and become fuel for wildfires. Each vegetation community requires a different fire regime to stay healthy, but climate change will alter these fire regimes. People now live adjacent to or in forest areas.
- ***Sea Level Rise and Coastal Flooding (Greater Storm Damage)*** – Much of our population lives by the coast, and we have built infrastructure such as water treatment plants along the coastline that are in danger of damage from storms. Higher sea level allows storms to reach farther inland, compounding the impact.
- ***Increase in "Hot Spells" (Heat waves)*** – Over the past century in the Los Angeles area, the number of days over 90 degrees Fahrenheit have increased while the number of days below 45 degrees Fahrenheit have decreased. Heat waves are becoming more frequent and longer-lasting. More hot days and heat waves will lead to an increased risk of heat-related illnesses.
- ***Decrease in potable water from traditional supplies*** – The South-Central coast imports water from the California State Water Project (Delta), Colorado River, Owens Valley, and groundwater. Population is growing rapidly, people are conserving more water, but rain amounts and patterns are changing.
- ***Loss of biodiversity*** – Southern California, specifically the region from South Orange County to the Mexican border, is home to one of the world's biodiversity hotspots. It's located in the foothills and terraces.[2] Many critically endangered species live here along with endemic vegetation, all of which are threatened by climate change and rapid urbanization.
- ***Ocean Acidification*** – With more carbon dioxide in the atmosphere, more carbon dioxide enters the ocean through natural carbon cycles. The carbon dioxide then reacts with the water to form carbonic acid, making it difficult for sea creatures to build their calcium carbonate shells. This is expected to impact fisheries, including local shellfish populations.
- ***Increased Air Pollution/Ozone*** – The South Coast air basin has some of the worst air quality in the nation due to our climate and geography. Sunlight with warming temperatures will lead to an increase in low-elevation ozone concentration. Greater concentrations of particulate matter will aggravate respiratory problems and could lead to cancer.
- ***Increase in Infectious Diseases*** – Water quality will become a bigger issue in the near future. Groundwater contamination has become such a problem that almost half of the wells in the San Fernando Basin had to be shut down. Contaminants can harbor diseases and increased overdrafting will lead to an increase in contaminant concentration. Additionally, climate change could make the weather better suited for insects like mosquitoes, known carriers of infectious diseases. Southern California already has concerns about the West Nile Virus and if the area becomes more appealing to carriers of the disease, chances of infection could increase.

[2] Spencer, Wayne D., Michael D. White, and Jerre Ann Stallcup. "On the Global and Regional Ecological Significance of Southern Orange County: Conservation Priorities for a Biodiversity Hotspot On the Global and Regional Ecological Significance of Southern Orange County: Conservation Priorities for a Biodiversity Hotspot Executive Summary." *Conservation Biology Institute*. Conservation Biology Institute, Oct 2001. Web. 6 Oct 2011.

Central Coast

The defining features in this region are the San Francisco Bay and Delta, the Monterey Bay, Pacific coastline, and the Coast Range to the east. Ecological issues facing this region include:

- ***Wetlands Loss/Restoration*** – Wetlands loss in this region started during the Gold Rush and today, just 5% of the original wetlands remain. Today there is regional goal of safeguarding 100,000 acres of healthy wetlands.
- ***Delta Issues*** – Water exports, pollution, wetlands and river habitats loss, endangered species, and potential levee breaks are all serious concerns along the Delta and through its watershed.
- ***Water Quality*** – Agricultural runoff, urban and storm water runoff, and other pollutants drain into waterways, bays, and the ocean, greatly impacting this biodiversity hotspot.
- ***Dam Removal*** – Dam removal projects in areas along the coastline are aimed at restoring habitats, especially for such economically viable species as salmon but have impacts on agriculture, recreation and other stakeholders.
- ***Food Safety*** – Food safety issues, such as the 2006 E. Coli outbreak traced to Central Coast spinach farms, are a concern in this region and focus national attention on regulations and farm management.
- ***Public Transportation*** – Congestion, car emissions, lack of a comprehensive network of public transportation systems, and road conditions impact the quality of life, as well as contribute to air pollution, noise pollution, and greenhouse gas emissions.
- ***Sea Level Rise*** – The combination of sea level rise and that the highest concentration of Californians living along the coast and low-lying inland areas will result in flooding of low-lying coastal areas if mitigation efforts are not made.

Central Valley

The Central Valley spans from Redding in the North to Bakersfield in the South and is surrounded by the Sierra Nevada Mountains and the Coastal Ranges. Embedded are rivers with headwaters in the Sierra Nevada that eventually empty into the Pacific Ocean. Ecological issues facing this region include:

- ***Air pollution*** – Due to its geography, air pollutants in the Central Valley and the Bay Area remain entrapped between the Sierra and Coastal ranges. Pollution in this region is largely caused by agricultural particulates, pesticide use, and transportation. Regulatory efforts have begun to curtail pollution.
- ***Water Contamination*** – Agricultural runoff and percolation contributes to pollutants found in groundwater in the region and one study suggests that the amount of unsafe amounts of nitrate in San Joaquin Valley tap water is expected to double by 2020. Other contaminants

detected in the water supply include traces of aluminum, copper, lead, dioxin, pesticides, and methylmercury.

- ***Water Shortage*** – Episodes of drought impact this region's available water sources for agriculture and urban development and contributes. Reduced the availability of freshwater and increased amounts of salinity adversely effect aquatic ecosystems. While once plentiful, groundwater basins have dramatically decreased and in many areas disappeared entirely.
- ***Inland Wetlands Conservation*** – At one time the Central Valley had over 4 million acres of wetlands, but by 1980 less than 300 thousand acres remained. This loss as dramatically impacted waterfowl populations and migratory birds.
- ***Loss of Farmland*** – According to the American Farmland Trust, some 1 million acres of the Central Valley's 6.3 million acres of irrigated farmland will be lost to development in the coming century. This loss contributes to multiple economic and social pressures.

Sierra Nevada & Foothills

The defining geological feature in this region is the Sierra Nevada mountain range and its Western and Eastern foothills. The range supports the headwaters of California's major rivers. Ecological issues facing this region include:

- ***Invasive/Non-Native Species*** – Invasive and non-native species contribute the decline of native species in the Sierra Nevada as they outcompete the native species for space, water, and food resources.
- Biodiversity/Endangered Species – The region is a biodiversity hotspot and is home to over 200 rare species, 135 of which are listed as threatened, endangered or sensitive.
- ***Air Quality/Pollution*** – Air pollution from the San Joaquin Valley and Bay Area, one of the most polluted areas in the United States, adversely impacts the Sierra Nevada. Especially harmful are high levels of nitrogen that alter the composition of plant species and contribute to soil acidification and elevated concentrations of nitrate in soils, streams, and groundwater.
- ***Lake Tahoe Quality/Clarity*** – Lake Tahoe is one of the clearest lakes in the world, but clarity is impacted by erosion, runoff, and particulates in the air; many of these sources are caused by human activities.
- ***Forest Fires*** – A long-standing practice of fire suppression has made the region exceptionally vulnerable to extreme wildfires. Forest management practices have changed in recent decades to better manage the role of fire in the ecosystem.
- ***Forest Fragmentation*** – Logging, roads, and other developments have caused fragmentation of the forest throughout the range. This has adverse impact on wildlife and the overall health of the forest.
- ***Logging Impacts*** – While an important economic engine, logging operations can degrade natural ecosystem functions, impact wildlife,

increase the likelihood of severe fires, degrade soil quality, increase the likelihood of introduced disease and invasive species, contribute to greenhouse gas emissions, and contribute to loss of significant sources of sequestered carbon.

- ***Livestock Grazing*** – Another economic engine, livestock grazing can contribute to the degradation of native plant communities and aquatic ecosystems.

Northern California

While not geographically a distinct region, Northern California (for the purposes of this initiative) includes the farthest northern reaches of the state, from the temperate coastal habitats, to the upper edge of the Great Central Valley, to the dryer plateau and mountainous regions to the east.

- ***Sustainable Farming*** – Agriculture is a critical economic driver in Northern California and many organizations are involved in development and practices of sustainable farming that can be used to model good practices throughout the region.
- ***Forest Conservation*** – Preserving remaining old-growth forests through conservation easements and community forests as well as sustainable timber management is replacing the long-standing battle between the logging industry and environmentalists and local Native tribal groups.
- ***Marijuana Growing*** – The Emerald Triangle, which consists of Humboldt, Trinity, and Mendocino Counties have cultivated marijuana in homes, backyards, and public lands since the 1960s, and it has contributed to local economies. But environmental impacts include habitat destruction, the killing wildlife, use of illegal pesticides, water, diesel, and high-energy demands for indoor growers.
- ***Dam Removal*** – Dam removal projects along the Klamath River are aimed at restoring habitats, especially for such economically viable species as salmon. Dam removal is also a remedy for poor water quality upstream as decades of sediment has built up in reservoirs.
- ***Habitat Fragmentation*** – Development (urban, agricultural, industrial) has fragments wild areas, impacting plant and animals habitats.
- ***Urban Development/Sprawl*** – Increasing population impacts air quality, loss of agricultural land, increased vehicle emissions, and increased pressures on infrastructure. Additional pressure on economic development can make sustainable practices even more important but a lower economic priority with increased services to provide. Sprawl is especially problematic in Northern California where the perception of unlimited space availability increases the fragmentation of natural spaces, the complexity of public transportation and services.

About the Green Museums Initiative (GMI)

The purpose of GMI is to inspire California Museums to develop green business practices, eco-friendly facility management and sustainable programming. GMI is embarking on this new initiative to look outwardly at what is happening locally and regionally to solve environmental challenges and support the civic engagement of museums with the needs and interests of their communities.

For additional information, see www.greenmuseums.info.

About the California Association of Museums (CAM)

CAM, founded in 1979, is a non-profit service organization formed to represent the interests of California museums. CAM's mission is to "Lead California Museums to the Future" and core programs focus on developing relevant and effective organizations for the benefit of our state's citizens. There are over 1,400 museums in the state of California, with CAM institutional members in almost every county. California's museums are as diverse as the communities in which they are found and include historical societies, cultural centers, art museums, botanical gardens, science centers, tribal museums, zoos, aquariums, and children's museums.

For additional information, see www.calmuseums.org.

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Attachment 3

IGNITE PLANNING TEAM

CAM Staff
Celeste DeWald, Executive Director
Sarah Post, Program Coordinator
Helen Trejo, Research Intern
Kirsten Griesmaier, Research Intern
Rebekkah Dworski, Research Intern

GMI Committee
Tim McNeil (Chair), UC Davis Design Museum
Kate Davies, Writer/Curator, GMI Founding Member & Past Chair
Barbara Long, Aquarium of the Pacific
Janice Lyle, Sunnylands Center & Gardens
Adrienne McGraw, Exhibit Envoy
Aaron Pope, California Academy of Sciences

Regional Coordinators
Michealeen Farrington, Sunnylands Center and Gardens
Barbara Long and Kate Davis for the Aquarium of the Pacific
Aaron Pope, California Academy of Sciences
Rachel Teasdale, Gateway Science Museum at California State University, Chico
Rory Ruppert for San Diego Zoo Global
Heather Segale and Leanne Burns, UCD Tahoe Environmental Research Center
Mary Weppler-Selear, University of California, Merced Library

Designer
Dayee Lueng

Attachment 4

IGNITE PARTICIPANTS

Attendees at the IGNITE event, October 14, 2011

Southland Deserts / Inland Empire - Sunnylands Center and Gardens

MJ Abraham, Director, Riverside Art Museum
Michael Hammond, Executive Director, Agua Caliente Cultural Museum
Stacey Johnson, President/CEO, The Living Desert
Robert McKernan, Director, San Bernardino County Museum
Tyler Stallings, Director, UC Riverside Sweeney Art Gallery
John Worden, Executive Director, Mission Inn Museum
John Benoit, Supervisor, Riverside County Board of Supervisors
Jean Benson, Mayor, City of Palm Desert
G. Dana Hobart, Mayor, Pro Tem, City of Rancho Mirage
Steve Pougnet, Mayor, City of Palm Springs
Cameron Barrows, Assistant Research Ecologist, UC Riverside Center for Conservation Biology
Katie Barrows, Director of Environmental Resources, Coachella Valley Association of Governments
Buford Crites, Board Member, Friends of the Desert Mountains
James Foote, Manager, Santa Rosa & San Jacinto Mountains National Monument
Debra Hughson, Science Advisor, Mojave National Preserve
Sophie Parker, Ecoregional Ecologist, Nature Conservancy
Seth Shteir, Senior Program Coordinator, National Parks Conservation Association
Kurt Leuschner, Associate Professor of Natural Resources, College of the Desert
Alfredo Martinez-Morales, Professor, Southern California Research Initiative for Solar Energy
Celeste DeWald, California Association of Museums – CAM/Green Museums Initiative
Michaeleen Farrington, Sunnylands Center and Desert Gardens
Janice Lyle, Sunnylands Center and Desert Gardens
Sant Khalsa, Artist/Professor of Art, CSU San Bernadino

San Diego Region - San Diego Zoo Global

Alex Diachenko, Volunteer, Balboa Park Cultural Partnership
Alina Talbott, Assistant General Manager, Hines-Petco Park
Alyssa Austin, Project Coordinator, PEAK Student Energy Actions
Andrea Eaton, Maintenance Planning Senior Coordinator, San Diego Unified School District
Betty Peabody, Friends of Balboa Park
Brian Joseph, Executive Director, Chula Vista Nature Center

Christine Yeager, Senior Administrative Assistant, San Diego Zoo
Dave McGrew, Facility Director, Reuben H Fleet Science Center
Deirdre Ballou, Conservation Education Specialist, San Diego Zoo
Elaine Rosenberger, President & Chair, San Diego Regional Sustainability Partnership
Emily Young, Senior Director, Environment Analysis and Strategy, The San Diego Foundation
Harry Watkins, Professor of Marketing, Strategy and Sustainability Fermanian School of Business, Point Loma Nazarene University
Jessica Rinaman, Program Assistant, Balboa Park Cultural Partnership
Jim Stone, Executive Director, Walk San Diego
Jenni Prisk, Facilitator, Prisk Communications
Kelly Makley, Rose Creek Watershed Coordinator, San Diego Earth Works
Ken Barnes, Manager of Buildings and Grounds, San Diego Zoo Safari Park
Kim Stringfellow, Artist/Associate Professor, San Diego State University
Laurie Broedling, LB Organizational Consulting
Marlene Williams, Council Liaison, Girl Scouts San Diego
Michael Castillo, Volunteer, Balboa Park Cultural Partnership
Michael Kelley, President, The Committee of One Hundred
Peter Hamilton, Director of Energy Services, California Center for Sustainable Energy
Robert Gilleskie, United States Marine Corps
Rory Ruppert, Director, Environmental Sustainability, Balboa Park Cultural Partnership
Siobhan Foley, Director of Education and Outreach, California Center for Sustainable Energy
Susan Loveall, Vice President, CFO, and COO, San Diego Natural History Museum
Wendy Spaulding, Director of Education and Guest Experience, Chula Vista Nature Center

LA Basin / Santa Barbara - Aquarium of the Pacific

Kim Abeles, Artist
Rich Block, Chief Executive Officer, Santa Barbara Zoo
Tom Bowman, Author, Bowman Global Change
Paul Bunje, Executive Director, UCLA Center for Climate Change Solutions
Eder, Cetina, Creative Director/Museum Consultant, Olson Visual
Kate Davies, Writer/Curator, GMI Founding Member & Past Chair
Torin Dunnavant, Community Engagement Manager, Tree People
April Economides, Founder and Principal, Green Octopus
Frederick Fisher, Principle Architect, Frederick Fisher & Partners
Nancy Goslee Power, Landscape Architect, Goslee Power & Associates
Phyllis Grifman, Associate Director, USC Sea Grant Program
Juliette Hart, Assistant Professor, USC Sea Grant Program

Becki Hartke, Education Manager, Fullerton Arboretum
Jordan Howard, Student Environmentalist, Rise Above Plastics Student Speaker Series
Karl Hutterer, Executive Director, Santa Barbara Museum of Natural History
Dean Kubani, Director, Office of Sustainability and Environment, City of Santa Monica
Barbara Long, Vice President, Govt Relations & Special Projects, Aquarium of the Pacific
Brenden McEneaney, Green Building Program Advisor, USGBC-LA
Heidrun Mumper-Drumm, Faculty & Director of Sustainability, Art Center College of Design
Jonathan Parfrey, Executive Director, Climate Resolve Los Angeles
Dora Quach, Administrative Director, Chinese American Museum
Jerry Schubel, President and CEO, Aquarium of the Pacific
Christopher Scoates, Director, University Art Museum, Long Beach
Nancy Steele, Executive Director, Council for Watershed Health
Justin Kalama, Associate, Goslee Power & Associates
Vanda Vitali, Museum Executive, California International Arts Foundation
Karen Wade, Director, Homestead Museum
Jeff Wilson, Vice President, Sustainability Programs, Quiksilver America
Laura Zahn, Program Manager, Climate Registry

Central Valley - University of California, Merced Library

Paola Di Giuseppantonio Di Franco (IGNITE Moderator), UC Merced World Cultures Graduate Program
Jonathan Bayless, Chief Curator, Yosemite National Park
Diane Cary, Communications Director, UC Davis Arboretum
Nora Cary, Research Development Analyst, UC Merced
Robin DeLugan, Professor, School of Social Sciences, Humanities & Arts, UC Merced
Emily Griswold, Assistant Director of Horticulture, UC Davis Arboretum
Sarah Lim, Museum Director, Merced County Courthouse Museum
Adrienne McGraw, Executive Director, Exhibit Envoy
Tracy Perkins, PhD Candidate, UC Santa Cruz
Carole Richard, Director of Development SSHA, UC Merced
Ann Savageau, Artist/Associate Professor of Design, UC Davis
Candace Sigmond, Education Coordinator, Grassland Environmental Education Center
David Stuart, Executive Director/CEO, San Joaquin County Historical Society
Carmen Tang - UC Merced Library, Exhibits Student
Mary Weppler-Selear, Library Services Manager, UC Merced Library

Sierra Nevada / Western & Eastern Foothills - UC Davis Tahoe Environmental Research Center

Alice Cantelow, Environmental Educator, American River Conservancy
Andrea Wilkins, Education and Outreach Assistant, UCD TERC/Parasol AmeriCorps
Betts Markle, Library Director, Sierra Nevada College
Bill Oudegeest, Donner Summit Historical Society
Bob Garrison, Director, Roseville Utility Exploration Center
Carl Young, Acting Interim Director, League to Save Lake Tahoe
Claudia Andersen, CEO, Parasol Tahoe Community Foundation
Heather Segale, Education and Outreach Director, UC Davis Tahoe Environmental Research Center
Jim Markle, Photographer
Judith Lowry, Artist, Nevada City
Katie Merrill, Education and Outreach Assistant, UCD TERC/SNAP AmeriCorps
Leanne Burns, Education and Outreach Assistant, UCD TERC/SNAP AmeriCorps
Linda Desai, Education Director, Placer Nature Center
Marguerite Sprague, Executive Director, North Lake Tahoe Historical Society-Gatekeeper's Museum
Molly Hucklebridge, Environmental Education Specialist, American River Conservancy
Nicole Shaw, Program Coordinator, UC Davis Tahoe Environmental Research Center
Shelley Fallon, Interpretive/Graphic Designer–Business Owner, Fallon Multimedia
Tim McNeil, Director, UC Davis Design Museum

Bay-Delta / Monterey Peninsula - California Academy of Sciences

David Bloom, Facilitator, VertNet Coordinator, Museum of Vertebrate Zoology, UC Berkeley
Megan Gray, Senior Manager of Visitor Engagement, Chabot Space & Science Center
Lisa Eriksen, Founder, Lisa Eriksen Consulting
Joe Brennan, Director of of Facilities, San Francisco Museum of Modern Art
Joel Rosenberg, Senior Digital Producer, Lawrence Hall of Science
Katherine Michonski, Program Manager, Business Council on Climate Change
Gil Friend, CEO, Natural Logic Inc.
Bruce Riordan, Climate Consultant, Joint Policy Committee
John Frawley, President and CEO, Aquarium of the Bay
Cyane Dandridge, Executive Director, Strategic Energy Innovations
Jeff Mendelsohn, Founder & Chair, NewLeaf Paper
Dev Crews, CSO, Luminesa
Brenda Altman, Docent, California Academy of Sciences

Shawn Rosenmoss, Senior Environmental Specialist, San Francisco Department of the Environment
Robert Dawson, Artist/Instructor of Art History, Stanford University
Anna Bar, Naturalist Center Educator, California Academy of Sciences
Mark Valentine, ReFrame It Consulting
Jonathan Katz, CEO, CINNABAR

Northern California / Redwood Empire - Gateway Science Museum at California State University, Chico

Amber Davis, Natural Sciences Educator, Turtle Bay Exploration Park, Redding
Ann Schwab, Mayor, City of Chico
Cheri Chastain, Sustainability Coordinator, Sierra Nevada Brewing Co. Chico
Colleen Cecil, Executive Director, Butte County Farm Bureau, Chico
Peter Coombe, Environmental Scientist, Dept Water Resources, Red Bluff
James Pushnik, Director of the Institute for Sustainable Development, CSU Chico
Jeff Mott, Director, Ecological Reserves, CSU Chico
Jennifer Jewell, Executive Producer, In a North State Garden Radio Show, KCHO Public Radio
John Merz, President, Sacramento River Preservation Trust
Julia Cronin, Curator of Collections & Exhibits, Turtle Bay Exploration Park, Redding
Julie Van Sickle, Interim Manager NHM/Co-Director, Redwood Science Project, HSU Natural History Museum, Arcata
Lexie Smith Kliebe, Project Manager, Exhibit Envoy
Linda MacDonald, Artist
Mary Anne Pella Donnelly, Jr. High School Teacher, Chico Jr. High School
Mary Harper, Education & Program Manager, Turtle Bay Exploration Park, Redding
Rachel Teasdale, Acting Director, Gateway Science Museum, CSU, Chico
Note taker- Gwen Quail, Gateway Science Museum volunteer/retired teacher, museum educator

Attachment 5

GREEN MUSEUM ACCORD SIGNEES

Current list as of March 2012

Peninsula Art Museum
UC Davis Design Museum
Seymour Marine Discovery Center
Museum of Craft + Design
Aquarium of the Pacific
California Academy of Science
S.C.R.A.P. Gallery
Roseville Utility Exploration Center
Japanese American Museum of San Jose
Santa Barbara Zoo
The Tech Museum of Innovation
Monterey Bay Aquarium
Western Science Center
Autry National Center
Great Harbor Maritime Museum
San Diego Zoo
Maritime Emporium
Gateway Science Museum