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The Climate and Deserts Workshop: *Adaptive Management of Desert Ecosystems in a Changing Climate*

Aquarius Casino Resort
Laughlin, Nevada
April 9-11, 2008

*What does everyone need to know about climate change & variability
and the impact on Western deserts?*

Wednesday April 9:

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| | <u>Plenary Session</u> |
| 7:30 – 8:30 | Breakfast and Registration |
| 8:30 – 8:40 | Introduction/Logistics |
| 8:40 – 9:15 | <i>The Future of the West: Adapting to a Warmer World:</i> Opening Keynote Speaker addresses peer-reviewed, state-of-the-science knowledge and issues of genuine debate versus manufactured conspiracy.
Dr. Lisa Graumlich , Director, School of Natural Resources, University of Arizona |
| 9:15 – 9:45 | <i>Overview – Climate Change and Western Deserts:</i> Climate change and variability affects on arid deserts, including discussion on precipitation and hydrologic variations, milder winter and extreme temperatures, and species responses (including changing fire regimes and invasive species issues).
Dr. Kelly Redmond – Deputy Director and Regional Climatologist, Desert Research Institute, Reno |
| 9:45 – 10:15 | <i>Climate Change and Wildlife Refuges: Managing for resilience in the face of uncertainty</i>
Dr. Brad Griffith – Asst. Wildlife Leader, USGS/Alaska Cooperative Fish and Wildlife Research Unit, Fairbanks, Alaska |
| 10:15 – 10:45 | Break |

10:45 – 11:45	<p><i>Panel Presentation – Climate Change and Western Deserts:</i> Panel presentation of desert specific concerns and issues about climate change and variability and species responses (20 minutes per speaker).</p> <p><i>Mohave-Colorado Desert – Wind Erosion and Dust Emission in Western Deserts – More or less in the Future</i> Dr. Rich Reynolds – Research Geologist, Earth Surface Dynamics Program, USGS, Denver</p> <p><i>Great Basin Desert – Climate Change</i> Dr. Stan Smith – Professor of Biological Sciences, University of Nevada, Las Vegas</p> <p><i>Climate Change and the Sonoran Desert</i> Dr. Travis Huxman – Professor of Physiological and Ecosystem Ecology, University of Arizona, Tucson</p>
11:45 – 12:00	Q&A with Morning Speakers
12:00 – 12:10	Moderator’s Synthesis
12:10 – 1:10pm	Lunch
1:00 – 1:30pm	<p><i>Challenges for Future Water Management in the Southwest</i> Implications of changing demographics and land use patterns in desert areas, increasing water and energy demands, and challenges for resource managers. Dr. Stan Leake – Research Hydrologist, USGS Arizona Water Science Center, Tucson</p>
1:30 – 1:50	<p><u>Panel Discussion – Human Uses/Impacts, Mgmt & Policy Implications</u> <i>Development by Design: Blending Landscape Level Planning with the Mitigation Hierarchy</i> Dr. Joe Kiesecker – Energy by Design Program, The Nature Conservancy</p>
1:50– 2:10	<p><i>Climate Change and Urban Form in the West</i> Dr. Rebecca Carter – Growth Policy Program, Sonoran Institute</p>
2:10 – 2:40	<p><i>Springs and Groundwater Monitoring and Modeling of Recent and Long-term Climate Change</i> Dr. Abe Springer – Professor of Hydrogeology, Northern Arizona University, Flagstaff</p>
2:40 – 2:50	Q&A with Afternoon Speakers
2:50 – 3:00	Moderator’s Synthesis
3:00 – 3:10	Break
3:10 – 4:45pm	<p><i>WorldCafé: Adapting to Climate Change</i> – a creative process for a conversation leading to collaborative dialogue, sharing knowledge and creating possibilities for action. Dr. Gregg Garfin (Lead Moderator) – Program Manager/Investigator, Institute for the Study of Planet Earth, University of Arizona</p>
4:45 – 5:15pm	<i>Discussion and Day’s Wrap-up</i>
6:00 – 7:30pm	<i>Poster Session – Hors d’ouerves and no-host bar</i>

Thursday April 10:

- 8:00 – 8:15am Welcome/Housekeeping
8:15 – 8:50am ***Nonnative Plants, Regional Climate Change and Emerging Desert Fire Regimes***
Dr. Guy McPherson – Professor of Conservation Biology, School of Natural Resources, University of Arizona, Tucson
- 8:50 – 9:00 Moderator Transition to Panel Presentation – Wildlife Issues
- 9:00 – 9:20am ***Wildlife Connectivity: we’ve been telling for twenty years that we don’t have enough time to gather the data***
Dr. Tom Scott – Professor of Conservation Biology, University of California, Riverside
- 9:20 – 9:40am ***Managing Landscape Linkages to Conserve Desert Wildlife during an Era of Climate Change***
Dr. Wayne Spencer – Senior Conservation Biologist, Conservation Biology Institute, and Science Advisor, South Coast Wildlands
- 9:40 – 10:00 **Q&A with Morning Speakers**
10:00 – 10:10 **Moderator’s Synthesis**
- 10:10 – 10:30am **Break**
- 10:30 – 10:35 Moderator Transition – Models and Management Session
10:35 – 11:05 ***Modeling Approaches for Predicting Climate Change Impacts on Natural Systems: From Inputs to Algorithms to Outputs and What They Can Tell Us***
Dr. Kirsten Ironside – GIS Coordinator, Merriam-Powell Center for Environmental Research, Northern Arizona University
- 11:05 – 11:25am ***Modeling and Natural Resources: Science and the Resource Management Agencies: Further implications for using models to guide management of desert ecosystems under a changing climate.***
Dr. Debra Hughson – Science Advisor, Mojave National Preserve, National Park Service
- 11:25 – 11:55 ***A State and Transition Model for Creosotebush and White Bursage*** – Presentation on current status of the use and development of State and Transition models in Western deserts.
Dr. Todd Esque – Ecologist, Western Ecological Research Center, USGS, Henderson
- 11:55 – 12:20 ***Finding and Using Climate Change Science Data and Information: A Toolbox for Resource Managers:*** Presentation demonstrating online resources of climate and other natural resources related models ready for resource managers to use, including the Forecast Evaluation Tool.
Dr. Michael Crimmins – Climate Extension Specialist, University of Arizona, Tucson
- 12:20 – 1:15pm **Lunch**

1:15 – 1:45	Climate Change and Desert Mgmt: Game of States and Transitions – Michael Crimmins, UA – Introduction to breakout activities to use state and transition models to illustrate and consider ecological interactions between climate variability/change and desert resources management.
1:45 – 3:00	Team Table Exercises Climate Scenarios and State & Transition Game Playing
3:00 – 3:30	Team Scenario Presentations/Summary
3:30 – 4:00	Workshop Wrap-up/Evaluations
4:00	End Day/Workshop

Friday April 11:

NPS Mojave National Preserve: Changing Climate and Fire Regimes Tour
Dr. Debra Hughson – Science Advisor, Mojave National Preserve,
National Park Service

7:30 – 8:10am	Carpool/Sack Lunches
8:10 – 10:00am	In route to Kelso, CA
10:00 – 10:15am	Welcome from Park Superintendent
10:15 – 10:30am	Visitor's Center/Rest Break
10:30 – 11:00am	Reconfigure carpool into high-clearance vehicles/Travel
11:00 – 11:45am	Cedar Canyon Road/Cima Dome Hackberry Fire – FMO Chuck Heard Joshua Tree Community & Fire Impacts – Dr. Todd Esque
12:00 – 1:30pm	Lunch at Mid Hills Campground Rare Plants & Management Challenges – Dr. Jim Andre
1:30 – 2:30pm	Wild Horse Canyon Repeat Photo Points & Fire Impacts – Dr. Robert Fulton
2:30 – 5:00pm	Return to Laughlin/Continue home from Kelso