

# **SOCIO-ECONOMIC CAUSES AND CONSEQUENCES OF FUTURE ENVIRONMENTAL CHANGES WORKSHOP**

A WORKSHOP SPONSORED BY THE U.S. ENVIRONMENTAL PROTECTION  
AGENCY'S NATIONAL CENTER FOR ENVIRONMENTAL ECONOMICS (NCEE),  
NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH (NCER)

November 16, 2005

EPA Region 9 Building

75 Hawthorne Street 1<sup>st</sup> Floor Conference Room San Francisco, CA

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### ***DISCLAIMER***

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**U.S. Environmental Protection Agency  
Socio-Economic Causes and Consequences of Future Environmental Changes Workshop**

November 16, 2005  
EPA Region 9  
75 Hawthorne Street  
1<sup>st</sup> Floor Conference Room  
San Francisco, CA

- 8:45-9:15**      **Registration**
- 9:15 -9:30**      **Introductory Remarks – Tom Huetteman, Deputy Assistant Regional Administrator, USEPA Pacific Southwest Region 9**
- 9:30-11:30**      **Session I:      Trends in Housing, Land Use, and Land Cover Change**  
Session Moderator: Jan Baxter, US EPA, Region 9, Senior Science Policy Advisor
- 9:30 – 10:00      Determinants of Land Use Conversion on the Southern Cumberland Plateau  
**Robert Gottfried (presenter)**, Jonathan Evans, David Haskell, and Douglass Williams, University of the South
- 10:00– 10:30      Integrating Economic and Physical Data to Forecast Land Use Change and Environmental Consequences for California’s Coastal Watersheds  
Kathleen Lohse, David Newburn, and **Adina Merenlender (presenter)**, University of California at Berkeley
- 10:30 – 10:45**      **Break**
- 10:45 – 11:00      Discussant: Steve Newbold, US EPA, National Center for Environmental Economics
- 11:00 – 11:15      Discussant: Heidi Albers, Oregon State University
- 11:15 – 11:30      Questions and Discussions
- 11:30 – 12:30**      **Lunch**
- 12:30 –2:30**      **Session II:      The Economic and Demographic Drivers of Aquaculture and Greenhouse Gas Emissions Growth**  
Session Moderator: Bobbye Smith, U.S. EPA Region 9
- 12:30 – 1:00      Future Growth of the U.S. Aquaculture Industry and Associated Environmental Quality Issues  
**Di Jin (presenter)**, Porter Hoagland, and Hauke Kite Powell, Woods Hole Oceanographic Institution

1:00 – 1:30	Households, Consumption, and Energy Use: The Role of Demographic Change in Future U.S. Greenhouse Gas Emissions Brian O’Neill, Brown University, <b>Michael Dalton (presenter)</b> , California State University – Monterey Bay, John Pitkin, Alexia Prskawetz, Max Planck Institute for Demographic Research
1:30 – 1:45	Discussant: Tim Eichenberg, The Ocean Conservancy
1:45 – 2:00	Discussant: Charles Kolstad, University of California at Santa Barbara
2:00 – 2:30	Questions and Discussion
<b>2:30 – 2:45</b>	<b>Break</b>
<b>2:45 - 4:55</b>	<b>Session III: New Research: Land Use, Transportation, and Air Quality</b> Session Moderator: Kathleen Dadey, US EPA, Region 9, Co-chair of the Regional Science Council
2:45 - 3:10	Transforming Office Parks Into Transit Villages: Pleasanton's Hacienda Business Park <b>Steve Raney (presenter)</b> , Cities21
3:10 – 3:35	Methodology for Assessing the Effects of Technological and Economic Changes on the Location, Timing and Ambient Air Quality Impacts of Power Sector Emissions Joseph Ellis and <b>Benjamin Hobbs (presenter)</b> , Johns Hopkins University, Dallas Burtaw and Karen Palmer, Resources for the Future
3:35 - 4:00	Integrating Land Use, Transportation and Air Quality Modeling <b>Paul Waddell (presenter)</b> , University of Washington
4:00- 4:25	Regional Development, Population Trend, and Technology Change Impacts on Future Air Pollution Emissions in the San Joaquin Valley Michael Kleeman, Deb Niemeier, <b>Susan Handy (presenter)</b> , Jay Lund, Song Bai, Sangho Choo, Julie Ogilvie, Shengyi Gao, University of California at Davis
4:25 – 4:55	Questions and Discussion
<b>4:55 – 5:00</b>	<b>Wrap-Up and Closing Comments</b>

**U.S. EPA Socio-Economic Causes and Consequences of Future  
Environmental Changes Workshop**

**San Francisco, CA  
November 16, 2005**

**Introductory Remarks**

**Tom Huetteman, Deputy Director, Policy & Management Division, Region 9**

I'd like to welcome everyone to today's workshop. My name is Tom Huetteman, and I'm *not* the regional administrator, although earlier agendas indicated that that's who would be delivering our opening address. I am the Deputy Director of the Policy and Management Division here at Region 9.

[aside regarding his headset and the fact that the workshop is being webcast]

My division has a lot of different responsibilities—we do the financial management, information management, internal facilities operation for the region, and regional planning, and then we also have science support, which involves our regional laboratory and other science support functions. One of my roles is the Science Lead on our Senior Management Team, so I'm often asked to help out and speak at events like this.

[aside providing the facility logistical information]

We're very happy to have this event here in Region 9 and would like to thank the Office of Research and Development STAR (Science to Achieve Results) Program and the National Center for Environmental Economics for having this conference here in Region 9. A number of people here in the Region 9 office have helped to put this together, and I'd especially like to thank our regional science council and a number of Region 9 staff who will be helping throughout today's workshop. The results of the workshop will be provided as proceedings, and all the workshop participants will be notified when those proceedings are available and accessible on the web.

Let me say a little bit about the format of today's workshop. As you can see from the agenda, we'll have three sessions. The first two sessions, which involve research that is pretty much at its conclusion with final reports being prepared, will follow a more formal format that you may not be familiar with. At the conclusion of the presentations, formal discussants will engage in a dialogue with the presenters. Then there will be an opportunity to open the discussion to general questions and answers. The third session this afternoon will present a series of newly funded research projects. These are projects that received funding from 2005 ORD sustainability grants. Those presentations do not have discussants, so there will be more of an opportunity for back-and-forth dialogue with the researchers, who are just beginning their research projects.

We had 85 registrants to the workshop, so this should be a wonderful opportunity for idea exchange and networking to occur, not only among the researchers here, but with all of you who represent a diverse group of state, local, federal EPA, private sector, and non-profit entities. This is something that ORD is emphasizing a lot more—bringing out to regional offices the research that the office is supporting. One of the things we’re really trying to achieve through this type of gathering and networking is to try to better link the environmental results of our research with the actual work that’s being done at the regional and local level. One reason we believe this linkage is so critical is, in part, because of some of the scrutiny our funding programs receive from the Office of Management and Budget (OMB). We’re being pressured by OMB to demonstrate some tangible results for the dollars that we invest, and when we are not able to do that successfully, we run the risk of cuts to our funding programs.

Since I see a lot of unfamiliar faces out there, I want to kick things off with a few comments about Region 9. Since one of our themes today is “forecasting,” I want to do a little forecasting for you about EPA and share with you some of the environmental issues that are presenting increasing challenges for us as we work to sustain environmental protection. I’ll touch on some of the changing ways that we’re responding to those challenges and then how that changing response is really affecting the way that EPA is organized as an agency.

If you’re not familiar with the 10 EPA regions, Region 9 consists of California, Arizona, and Nevada in the Southwest and then also Hawaii and the Pacific Trust Territories. This reach encompasses the largest number of Indian tribes of any EPA region. This area gives us a really unique and diverse perspective—the trust territories stretch all the way across the Pacific, and Arizona and Nevada are two of the fastest-growing states in the nation. We also have some of the most undeveloped areas of the nation, with the Pacific islands and some of our tribes still lacking basic infrastructure, such as wastewater and drinking water. Then we also have our unique challenge of the Mexican border area.

So, as we look at the environmental issues that we face here and across the country, the common theme is that they’re increasingly more complex and challenging to address, and it requires a different set of tools to solve those problems. So, I want to touch on a few of the challenges that we are facing here in Region 9 by focusing on some of the priorities we’ve identified, particularly those that will challenge us in the upcoming years.

Air quality has always been our highest priority in Region 9 with the issues in Southern California, so that’s nothing new. However, as we look at other aspects of air pollution, such as finer particulates, we’re seeing other areas of significant concern and new levels of complexity to those issues. For instance, this afternoon we’ll hear about the issue in the central valley of the coming together of agriculture and development and the associated changes this brings. In particular, there are the air quality and water quality challenges presented by the rapidly growing dairy industry and the side-by-side co-existence of consolidated dairy farms and new development.

In the area of water quality, the #1 cause of water quality degradation in our region is storm water runoff. In both storm water runoff and air quality, I think the primary factor that is the most challenging to address is the collective impact of too many people. We can regulate industries and what comes out of the ends of pipes, but to change behavior is a particularly difficult challenge we face in our efforts to achieve continued environmental protection and improvement.

Also on the water front, of course we're going to see shrinking water supplies and that will also affect our water quality program. Already we're seeing increased demand for water reuse in Southern California and now elsewhere, and we're seeing more linkage as water quality standards drive improvements in wastewater, thereby creating opportunities for additional reuse.

At Region 9 and across the country we also are challenged with keeping an eye out for emerging pollutants of concern. We've had some particular experience in this regard over the last few years with MTBE and more recently with perchloride from explosives manufacturing. In the Las Vegas area this pollutant is impacting the Colorado River, which is part of the drinking water supply for 15 million people.

As we look at other areas of potential concern, one that comes up is potential endocrine-disrupting chemicals—things such as pharmaceuticals and personal care products going down the drain. Again, this gets back to individual behaviors and choices that people make and how those affect the environment. This is another increasingly challenging area.

Another issue is that our work is becoming more international in scope. A very high priority for us here in Region 9 is, of course, the Mexican border, but we're also concerned about issues of atmospheric transport of pollutants from Asia and around the globe. Then, of course, there is the question of global warming and what strategies the country will pursue in that regard. In our region, the Pacific island nations realize a very real threat of rising sea levels wiping out portions of their lands. That's a unique perspective that we can bring to that discussion.

We've recognized a common theme as part of the growing pattern of how we respond to this wide array of environmental issues. The top priority for our region at the moment is an initiative called the West Coast Diesel Emission Reduction Collaborative. I underscore the word "collaborative" because that is a theme for a lot of the work we're doing in the region. In this case, it's a public/private partnership not so much about regulatory efforts as about creating incentives and providing funding and supporting voluntary programs. Then if you look throughout watershed partnerships, pollution prevention, and collaboration, you see these kinds of themes in the way we're working, not just in the traditional regulatory mode that we've been used to for the last 35 years.

Looking forward, that's the kind of agency that we're more likely to be. We're not getting new legislative mandates. We still generate rule-making on a periodic basis, but that's likely to diminish. The titles that we're hearing for our role in the future are

convener, collaborator, facilitator, and innovator. There will be an emphasis on partnerships across many levels and an effort to bring together diminishing resources from different places to be more effective, using tools such as market incentives and relying more on voluntary actions. Again, there is the challenge of trying to influence the choices that people make individually in their lives as opposed to focusing just on what we can control through our efforts with industries and municipalities.

As I've already indicated, the future indicates an increase in international focus. We here in Region 9 are already doing work in China, Vietnam, the Philippines, and Thailand. Those types of activities are often more headquarters-focused.

In this environment of more-complex, challenging issues, I believe the research we fund is increasingly more critical to us. We need to strive to find those effective tools to better understand the problems and the complexities of the issues that we face so we can be more effective in sustaining environmental protection.

Again, I thank you for being here, and I encourage everyone to take the opportunity to meet folks during the breaks and to ask questions and to engage in the discussion. I hope we have a great workshop. Thank you very much.