

**Coastal Habitat Conservation in a Changing Climate: Strategies and Tools for the Great Lakes Region**

**Eagle Crest Marriott, 1275 S Huron Street, Ypsilanti/Ann Arbor, Michigan  
September 12-14**

<b>Time</b>	<b>Monday September 12th</b>	<b>Location</b>
<b>12:00pm-1:00pm</b>	<b>Workshop Registration</b>	<b>Atrium</b>
<b>1:00pm-1:30pm</b>	<p><b>Welcome and Introduction</b>            Adrienne Antoine, <i>NOAA</i></p> <p>Marie Colton, <i>Director of NOAA Great Lakes Environmental Research Laboratory</i></p> <p>Patty Birkholz, <i>Director of Office of the Great Lakes, Michigan Department of Environmental Quality</i></p> <p>Andy Buchsbaum, <i>Director of Great Lakes Regional Center of National Wildlife Federation &amp; Co-Chair of Healing Our Waters – Great Lakes Coalition</i></p>	<b>Auditorium 1</b>
<b>1:30pm-3:00pm</b>	<p><b>Session I. Climate Change Impacts in the Great Lakes: What is measured and what is uncertain?</b>            Moderator: Adrienne Antoine, <i>NOAA</i></p> <p><b>Great Lakes Water Levels</b>            Drew Gronewold, <i>NOAA Great Lakes Environmental Research Laboratory</i></p> <p><b>Historical and Projected Future Climate Changes in the Great Lakes Region</b>            Jeff Andresen, <i>Michigan State Climatologist</i></p> <p><b>Climate Change Impacts on Shorelines and Coastal Areas</b>            Scudder Mackey, <i>Habitat Solutions NA</i></p>	<b>Auditorium 1</b>
<b>3:00pm-3:15pm</b>	<b>Break</b>	<b>Atrium</b>
<b>3:15pm-5:15pm</b>	<p><b>Session I. Climate Change Impacts in the Great Lakes: What is measured and what is uncertain? (continued)</b>            Moderator: Jessica Berrio, <i>NOAA</i></p> <p><b>Impacts on Eutrophication</b>            Don Scavia, <i>Graham Environmental Sustainability Institute &amp;</i></p>	<b>Auditorium 1</b>

	<p><i>University of Michigan School of Natural Resources and Environment</i></p> <p><b>Ecosystem Impacts of Climate Change in Coastal Areas of the Great Lakes Basin</b>  Lucinda Johnson, <i>University of Minnesota Duluth</i></p> <p><b>Putting Uncertainty in Context</b>  Jennie Hoffman, <i>EcoAdapt</i></p>	
<p><b>5:15pm-5:30pm</b></p>	<p><b>Question and Answer</b>  Moderator: Jessica Berrio, <i>NOAA</i></p>	
<p><b>5:30pm-7:00pm</b></p>	<p><b>Welcome Reception  (Appetizers &amp; Cash Bar)</b></p>	<p><b>Atrium</b></p>

<b>Time</b>	<b>Tuesday September 13th</b>	<b>Location</b>
<b>7:30-8:30am</b>	<b>Workshop Registration and Breakfast</b>	<b>Atrium</b>
<b>8:30am-8:40am</b>	<b>Overview of Session II: The Day and Logistics</b> Melinda Koslow, <i>Great Lakes Regional Center of National Wildlife Federation</i>	<b>Auditorium 1</b>
<b>8:40am-10:20am</b>	<b>Session II. Applying Climate Science to On-the-Ground Action</b>  <b>Breakouts**:</b> <b>Option 1</b> ( <i>see list below for more information</i> )	<b>See Session II Schedule in Packet</b>
<b>10:20am-10:30am</b>	<b>Break</b>	<b>Atrium</b>
<b>10:30am-12:00am</b>	<b>Session II. Applying Climate Science to On-the-Ground Action (continued)</b>  <b>Breakouts**:</b> <b>Option 2</b> ( <i>see list below for more information</i> )	<b>See Session II Schedule in Packet</b>
<b>12:00pm-1:00pm</b>	<b>Lunch - Provided</b>	<b>Atrium</b>
<b>1:00pm-2:30pm</b>	<b>Session II. Applying Climate Science to On-the-Ground Action (continued)</b>  <b>Breakouts**:</b> <b>Option 3</b> ( <i>see list below for more information</i> )	<b>See Session II Schedule in Packet</b>
<b>2:30pm-2:45pm</b>	<b>Break – Grab snack and change shoes if needed</b>	<b>Atrium</b>
<b>2:45pm-3:00pm</b>	<b>Board Buses</b>	<b>Conference Center Lobby</b>
<b>3:00pm</b>	<b>Session II. Applying Climate Science to On-the-Ground Action: Restoration Site Visits</b>  <b>2 Options:</b> <ol style="list-style-type: none"> <li><b>1. Erie Marsh Preserve Coastal Wetland Restoration</b> NOAA-funded project spanning 258 acres of wetland OR</li> <li><b>2. Dusseau Wetland/Lakeplain Prairie Restoration (AOC)</b> EPA-funded project spanning 38 acres of coastal wetland and 28 acres of Lakeland prairie</li> </ol>	<b>Restoration site</b>
<b>4:15pm</b>	<b>Arrive at restoration site</b>	

<b>4:20pm-5:00pm</b>	<b>Restoration site overview &amp; Snack</b> <i>Led by Ducks Unlimited and The Nature Conservancy Staff</i>	<b>Restoration site</b>
<b>5:00pm-5:30pm</b>	<b>Break-out Team Discussion</b> <i>Led by NWF Staff</i> <ul style="list-style-type: none"> <li>• How do we apply what we learned today to this site?</li> <li>• What ways could climate change affect this restoration project?</li> <li>• What goals or strategies are already employed to consider changes to climate?</li> <li>• What goals or strategies could be employed to consider changes to climate?</li> </ul>	<b>Restoration site</b>
<b>5:30pm-6:20pm</b>	<b>Travel back to hotels</b>	
	<b>Dinner on own</b>	

**\*\*Break-Out Session Descriptions – Schedule of times and locations included in folder**

**Tools Café** – This breakout provides a “hands-on” opportunity to discover and learn more about tools that provide climate change information. Utilizing individual laptops, discussion leaders will guide participants through tools such as ClimateWizard, NOAA Digital Coast, NatureServe Vulnerability Index and the Climate Adaptation Knowledge Exchange (CAKE).

Discussion led by Jennie Hoffman – Senior Scientist and Director of Programs with EcoAdapt and Heather Stirratt, Great Lakes Regional Coordinator with NOAA’s National Ocean Service

**Fish Passage** – This breakout examines how we assess the vulnerability to fish passage restoration in a changing climate. Utilizing *Restoring the Great Lakes Coastal Future: Technical Guidance for the Design and Implementation of Climate-Smart Restoration Projects* as a guide, this group will examine how to develop scope and objectives in a changing scenario, assess the components of vulnerability (sensitivity, exposure and adaptive capacity), while developing potential adaptation responses and strategies as a group.

Discussion led by Patty Glick – Senior Specialist on Global Warming for the National Wildlife Federation and co-author of *Restoring the Great Lakes Coastal Future*.

**Areas of Concern** – Areas of Concern (AOCs) are severely degraded geographic areas within the Great Lakes Basin that have beneficial use impairments (BUIs). This breakout will openly discuss how we consider remediating these areas in a changing climate. For example, if we experience larger storm events as predicted by most climate scientists, could we experience a reemergence of contaminants? And if so, what steps could we take to prevent this? The group will also openly discuss other climate change impacts and how they might affect habitat restoration in AOCs.

Discussion led by Jessica Berrio –Federal Program Officer for the NOAA Restoration Center and Julie Sims Great Lakes Habitat Restoration Program Coordinator for the NOAA Restoration Center

**Invasive Species Management** – Aquatic or terrestrial, we can’t ignore the impact invasive species has on our conservation and restoration efforts. This breakout will examine how climate change might influence invasive species under range shift scenarios, etc and consider any information needs to help manage under these scenarios. This breakout will work to generate ideas for current management efforts that might help us mitigate invasive species in a changing climate. Also, this group will address the not-too-popular “point of no return,” or point at which we should consider refocusing our management efforts.

Discussion led by Doug Inkley – Senior Scientist with National Wildlife Federation

**Agricultural Watersheds** – This breakout discussion examines interactions between climate change and stresses on coastal habitats that relate to management practices in watersheds dominated by agriculture. Key impacts include increases in storm intensities that are likely to further increase run-off of sediments, nutrients, and pesticides into coastal areas. In addition to discussing changes in existing stressors, this group will also consider how farmers might respond to climate change (e.g., increasing irrigation, or infrastructure that promotes drainage in spring), and how we might update our strategies to anticipate change, increase efficiency of our actions, and increase collaboration with the agricultural sector.

Discussion led by Kim Hall – Great Lakes Climate Change Ecologist with The Nature Conservancy

**Land Conservation and Acquisition** – This breakout discussion examines the role of land conservation as a climate adaptation strategy. This group will consider issues such as the need, challenges and barriers for planning land protection in a changing climate, either to improve connectivity or to help reduce flooding impacts and local temperature changes, and how to begin prioritizing land under changing scenarios. Issues related to communicating climate change adaptation in land conservation practices with stakeholders will also be explored. Finally, the group will discuss resources that can help with these challenges.

Discussion led by Bethney Ward - Fisheries Biologist for the Geospatial Services Division, NOAA Coastal Services Center

<b>Time</b>	<b>Wednesday September 14th</b>	<b>Location</b>
<b>7:30am-8:30am</b>	<b>Breakfast</b>	<b>Atrium</b>
<b>8:30am-8:35am</b>	<b>Overview of Day and Logistics</b> Adrienne Antoine, <i>NOAA</i>	<b>Auditorium 1</b>
<b>8:35am-10:25am</b>	<b>Session III. Informing Climate Science and Services</b>  A. National Climate Assessment an Overview Emily Cloyd, <i>Public Participation and Engagement Coordinator, National Climate Assessment (NCA)</i>  B. NCA in the Midwest David Bidwell, <i>GLISA Program Manager</i>	<b>Auditorium 1</b>
<b>9:15 - 9:25</b>	<b>Move to breakout session rooms</b>	
<b>9:25 - 10:25am</b>	<b>Session III. Informing Climate Science and Services (continued)</b>  C. Stakeholder Engagement Breakout Session  Facilitators: Patty Glick, Doug Inkley, Michael Murray, <i>NWF</i> Jennie Hoffman, <i>EcoAdapt</i>	<b>Conference Rooms by Name Badge Dot Color: A, B, F, and E</b>
<b>10:25 - 10:40am</b>	<b>Break</b>	<b>Atrium</b>
<b>10:40am-12:00pm</b>	<b>Session IV. Ongoing Efforts and Next Steps</b>  A. Assessing Needs and Priorities for Coastal Habitats in the Great Lakes Region Moderator: Helen McMillan, <i>NOAA</i>  Panelists: <ul style="list-style-type: none"> <li>• Kim Hall, <i>TNC</i></li> <li>• Doug Inkley, <i>NWF</i></li> <li>• Jill Ryan, <i>Freshwater Future</i></li> <li>• Heather Elmer, <i>Old Woman Creek</i></li> <li>• Doug Kluck, <i>NOAA</i></li> </ul> B. Discussion	<b>Auditorium 1</b>
<b>12:00pm-12:30pm</b>	<b>Closing Remarks</b> Adrienne Antoine, <i>NOAA</i> and Melinda Koslow, <i>NWF</i>	<b>Auditorium 1</b>
<b>2:00pm-3:00pm</b>	<b>OPTIONAL - Tour of NOAA Great Lakes Environmental Research Laboratory (GLERL)</b>  <b>*Transportation On Own*</b>	<b>4840 S. State Rd., Ann Arbor, Michigan</b>