

## ***Publications***

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[https://www.researchgate.net/profile/Andrea\\_Ray2](https://www.researchgate.net/profile/Andrea_Ray2)**

- Dilling, L, Daly, M. Travis, W, **Ray, AJ**, Wilhelmi, O.2023.The role of adaptive capacity in incremental and transformative adaptation in three large U.S. Urban water systems. *Global Environmental Change* 79(11):102649 DOI: 10.1016/j.gloenvcha.2023.102649
- Yocum, Heather M., Deanna Metivier Sassorossi, and **Andrea J. Ray** (2022): Assessing the use of climate change information in State Wildlife Action Plans. *Conservation Science Practice*, 4(3), e608, <https://doi.org/10.1111/csp2.608>.
- Barsugli, JJ, **AJ Ray**, B Livneh, CF Dewes, A Heldmyer, I Rangwala, JM Guinotte, S Torbit. 2020. High-resolution projections of mountain snowpack loss for conservation: the case of the wolverine. *AGU Earth Futures*, <https://doi.org/10.1029/2020EF001537>.
- Abel, B, B Rajagopalan, **AJ Ray**. 2020. A predictive model for seasonal pond counts in the United States Prairie Pothole Region using large-scale climate connections, *Environmental Research Letters*, DOI: 10.1088/1748-9326/ab7465.
- Lipschultz, Fredric, Herring, David D., **Ray, Andrea J.**, Alder, Jay, Dahlman, LuAnn , DeGaetano, Arthur, Fox, James F., Gardiner, Edward, Herring, Jamie, Hicks, Jeff, Melton, Forrest, Morefield, Philip E., and Sweet, William V. 2019. Climate Explorer: Improved access to local climate projections. *BAMS*, in press.
- Ray, A. J.** and A. B. White (2019): The Hydrometeorology Testbed–West Legacy Observing Network: Supporting Research to Applications for Atmospheric Rivers and Beyond. *Atmosphere*, 10, 533, <https://doi.org/10.3390/atmos10090533>.
- Yocum, H. M. and **A. J. Ray** (April 2019): Climate information to support wildlife management in the North Central United States. *Regional Environ. Change*, <https://doi.org/10.1007/s10113-019-01474-y>.
- Dilling, L., M. E. Daly, D. A. Kenney, R. Klein, K. N. Miller, **A. J. Ray**, W. R. Travis, O. Wilhelmi (March 2019): Drought in urban water systems: Learning lessons for climate adaptive capacity. *Clim. Risk Management.*, 23, 32-42, <https://doi.org/10.1016/j.crm.2018.11.001>.
- Jana, S., B. Rajagopalan, M. A. Alexander, and **A. J. Ray**, 2018: Understanding the Dominant Sources and Tracks of Moisture for Summer Rainfall in the Southwest United States. *J Geophys Res-Atmos*, **123**, 4850-4870.
- Steen, Valerie Steen, Helen R. Sofaer, Susan K. Skagen, **Andrea J. Ray**, and Barry R. Noon, 2017. Projecting Species' Vulnerability to Climate Change: Which Uncertainty Sources Matter Most and Extrapolate Best? *Ecology and Evolution*, 7(21), 8841-8851. doi:10.1002/ece3.3403.
- Enquist, Carolyn A.F. , Stephen T. Jackson, Gregg Garfin, Frank W. Davis, Leah R. Gerber, Jeremy Littell, Jennifer L. Tank, Adam Terando, Tamara Wall, Benjamin Halpern, J. Kevin Hiers, Toni Lyn Morelli, Elizabeth McNie, Nathan L. Stephenson, Matthew A. Williamson, Connie A. Woodhouse, Laurie Yung, Mark Brunson, Kimberly Hall, Lauren M. Hallett, Dawn M. Lawson, Max Moritz, Koren Nydick, Amber Pairis, **Andrea J. Ray**, Claudia Regan, Hugh D. Safford, Mark W. Schwartz, M. Rebecca Shaw. 2017.

- Foundations of Translational Ecology. *Frontiers in Ecology and the Environment*, 15(10), 541-550. doi:10.1002/fee.1733
- White, CW, Henrik Carlsen, Andrew W. Robertson, Richard Klein, Jeffrey K. Lazo, Arun Kumar, Frederic Vitart, Erin Coughlan de Perez, **Andrea J. Ray**, Virginia Murray, Sukaina Bharwani, Dave MacLeod, Rachel James, Lora Fleming, Andrew P. Morse, Bernd Eggen, Richard Graham, Erik Kjellström, Emily Becker, Kathleen V. Pegion, Neil J. Holbrook, Darryn McEvoy, Michael Depledge, Sarah Perkins-Kirkpatrick, Timothy J. Brown, Roger Street, Lindsey Jones, Tomas A. Remenyi, Indi Hodgson-Johnston, Carlo Buontempo, Rob Lamb, Holger Meinke, Berit Arheimer and Stephen E. Zebiak. 2017. Applications of subseasonal-to-seasonal (S2S) predictions. *Meteorological Applications*, April 2017. DOI: 10.1002/met.1654
- Cherry, JE, Knapp, C, Trainor, S, **Ray, AJ**, Tedesche, M, Walker, S. 2017. Planning for climate change impacts on hydropower in the Far North, *Hydrology and Earth System Sciences*, <http://www.hydrol-earth-syst-sci.net/21/133/2017/hess-21-133-2017.pdf>
- Ray, AJ, Stokes, M, Yocum, HM, Nielson, A, Goodman, C, Hartman, RK, Intermill III JA, Kruk, MC, Vose, R, Miskus D. 2017. The National Water Resources Monitoring and Outlook: a new national scale product for timely water intelligence. American Meteorological Society (AMS) 88th Annual Meeting, Extended Abstract 5A.4, <https://ams.confex.com/ams/97Annual/webprogram/Paper314921.html>
- Ray, AJ. 2016. Providing climate science to real-world policy decisions: a scientist's view from the trenches. pp.141-160 in: *Water Policy and Planning in a Variable and Changing Climate*. Editors: Kathleen Miller, Alan Hamlet, Douglas Kenney, Kelly T. Redmond. CRC Press. <https://www.crcpress.com/Water-Policy-and-Planning-in-a-Variable-and-Changing-Climate/Miller-Hamlet-Kenney-Redmond/9781482227970>
- Ray, AJ, and RS Webb. 2016. Understanding the user context: decision calendars as frameworks for linking climate to policy, planning and decision-making. Pp 27-50 in: *Climate in Context: Lessons learned from the RISA Program*, Parris, A, et al, eds. Wiley & Sons. <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118474791,descCd-buy.html>
- Gordon, E., Dilling, L, McNie, E, Ray, AJ. 2016. Navigating Scales of Knowledge and Decision Making in the Intermountain West: Implications for Science Policy. Pp In: *Climate in Context: Lessons learned from the RISA Program*, Parris, A, et al, eds. Wiley & Sons. In press. <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118474791,descCd-buy.html>
- Fisichelli, N., G. Schuurman, A. Symstad, **A. Ray**, B. Miller, M. Cross, E. Rowland. 2016. *Resource management and operations in southwest South Dakota: Climate change scenario planning workshop summary* January 20-21, 2016, Rapid City, SD. Natural Resource Report NPS/NRSS/NRR—2016/1289. National Park Service, Fort Collins, Colorado;
- Fisichelli, N., G. Schuurman, A. Symstad, **A. Ray**, J. Friedman, B. Miller, E. Rowland. 2016. *Resource management and operations in central North Dakota: Climate change scenario planning workshop summary* November 12-13, 2015, Bismarck, ND. Natural Resource Report NPS/NRSS/NRR—2016/1262. National Park Service, Fort Collins, Colorado.

- Ballard, Tristan, Richard Seager, Jason E. Smerdon, Benjamin I. Cook, Andrea J. Ray, Balaji Rajagopalan, Yochanan Kushnir, Jennifer Nakamura, and Naomi Henderson, 2014: Hydroclimate Variability and Change in the Prairie Pothole Region, the “Duck Factory” of North America. *Earth Interact.*, 18: 1–28. <http://dx.doi.org/10.1175/EI-D-14-0004.1>
- Ray, AJ, Liebmann, Brant, and Allured, DA. 2014b. Climate Analysis, Chapter 7 in Wyoming Basin Rapid Ecoregional Assessment, USGS report to the US Bureau of Land Management, USGS Open-File Report 2015-1155. <http://pubs.er.usgs.gov/publication/ofr20151155>.
- Barsugli, JJ, G Guentchev, RM Horton, A Wood, LO Mearns, XZ Liang, JA Winkler, K Dixon, K Hayhoe, RB Rood, L Goddard, AJ Ray, L Buja, C Ammann. 2013. The Practitioner's Dilemma: How to Assess the Credibility of Downscaled Climate Projections. *Eos, Transactions American Geophysical Union* 94 (46), 424-425. <http://doi:10.1002/2013EO460005>
- Cayan, D., et al. 2013. “Future Climate: Projected Average.” In *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, 101–125. A report by the Southwest Climate Alliance. Washington, DC: Island Press. <http://swcarr.arizona.edu/chapter/6>
- Gershunov, A., et al. 2013. “Future Climate: Projected Extremes.” In *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, 126–147. A report by the Southwest Climate Alliance. Washington, DC: Island Press. <http://swcarr.arizona.edu/chapter/7>
- Carr, N.B., Garman, S.L., Walters, A, Ray, AJ, Melcher, C.P., Wesner, J.S., O’Donnell, M.S., Sherrill, K.R., Babel, N.C., and Bowen, Z.H., 2013: Wyoming Basin Rapid Ecoregional Assessment work plan. USGS Open-File Report 2013–1223, 58 p., <http://dx.doi.org/10.3133/ofr20131223>.
- McWethy, David B. et al. 2010. Climate and Ecosystem Change in the U.S. Rocky Mountains and Upper Columbia Basin: Historic and Future Perspectives for Natural Resource Management. USGS Natural Resource Report NPS/GRYN/NRR—2010/260. 97pp. [http://www.montana.edu/mcwethy/pubs/McWethy2010\\_NPS\\_Climate\\_Synthesis.pdf](http://www.montana.edu/mcwethy/pubs/McWethy2010_NPS_Climate_Synthesis.pdf)
- Ray, A.J., Joseph J. Barsugli, Jr., Klaus E. Wolter, Jon K. Eischeid. 2010. Rapid-Response Climate Assessment to Support the FWS Status Review of the American Pika. NOAA Report to the U.S. Fish and Wildlife Service. 53pp. Available at: <http://www.esrl.noaa.gov/psd/news/2010/020210.html>
- Rajagopalan, B., K. Nowak, J. Prairie, M.P. Hoerling, B. Harding, J.J. Barsugli, A.J. Ray, & B. Udall. 2009. Water Supply Risk on the Colorado River: Can Management Mitigate? *Water Resources Research*, 45: W08201, <http://doi:10.1029/2008WR007652>.

- Lowery, J.L., A.J. Ray, R.S. Webb. 2009. Factors Influencing the Use of Climate Information by Colorado Municipal Water Managers. *Journal of Climate Research*, 40: 103-119.  
<http://doi:10.3354/cr00827>
- Kenney, D., A.J. Ray, B. Harding, R.S. Pulwarty, B. Udall, 2008. Rethinking Vulnerability on the Colorado River. *Journal of Contemporary Water Research & Education*. 40: 103-119.  
<http://doi:10.1111/j.1936-704X.2010.00068.x>
- Ray, A.J., J.J. Barsugli, K.B. Averyt, K. Wolter, M. Hoerling, 2008. Colorado Climate Change: A Synthesis To Support Water Resource Management and Adaptation, a report for the Colorado Water Conservation Board by the NOAA-CU Western Water Assessment,  
[http://wwa.colorado.edu/publications/reports/WWA\\_ClimateChangeColoradoReport\\_2008.pdf](http://wwa.colorado.edu/publications/reports/WWA_ClimateChangeColoradoReport_2008.pdf)
- Ray, A.J., G.M. Garfin, R. Varady, et al. 2007. Monsoon Region Climate Applications: Integrating Climate Science with Regional Planning and Policy, *BAMS*, 88:933–935.  
<http://dx.doi.org/10.1175/BAMS-88-6-933>
- Ray, AJ, GM Garfin, M Wilder, M Vásquez-León, M Lenart, and AC Comrie, 2006. Applications of monsoon research: Opportunities to inform decisionmaking and reduce regional vulnerability. *Journal of Climate*, 20: 1608–1627.  
<http://dx.doi.org/10.1175/JCLI4098.1>
- Ray, AJ. 2003. Reservoir management in the Interior West: the influence of climate variability and functional linkages of water. Pp 193-217 in *Climate, water, and transboundary challenges in the Americas*, Henry Diaz and Barbara Morehouse, eds. Kluwer Press.  
[http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray\\_ch15inDiaz\\_03.pdf](http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray_ch15inDiaz_03.pdf)

**Select Other Publications:**

- Ray, A.J., 2008. Water Resources Decision-Makers and their needs for Decadal Climate Prediction, US CLIVAR Variations Newsletter, Oct 2008.  
[http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray\\_CLIVAR\\_Variations\\_08.pdf](http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray_CLIVAR_Variations_08.pdf)
- Ray, AJ, JJ Barsugli, and T Hamill. 2007. Integrating assessments of user needs with weather research: Developing user-centric tools for reservoir management. AMS 16<sup>th</sup> Conf on Applied Climatology: Extended Abstracts. Boston: AMS.  
[http://www.esrl.noaa.gov/psd/people/andrea.ray/AMS07\\_extended\\_abstract\\_ajr\\_final.pdf](http://www.esrl.noaa.gov/psd/people/andrea.ray/AMS07_extended_abstract_ajr_final.pdf)
- Ray, AJ. 2005-2009. Lead editor of the “Intermountain West Climate Summary,” a product of the Western Water Assessment (WWA) RISA  
<http://wwa.colorado.edu/climate/iwcs/archives>; wrote/co-authored numerous feature articles, focus pages, and technical discussions including [Water Resources Decision-Makers and Their Needs for Decadal Climate Prediction](#) (May 2009), [Meet the MJO](#), (May 2008), [Impacts, Adaptation and Vulnerability: A Summary of the Report from](#)

[IPCC Working Group 2 and Implications for the Western U.S.](#) (Nov 2007), [A Review of Monthly/Seasonal Climate Variability for 2005-2006: The ENSO Cycle](#) (Nov 2006), [New Streamflow Reconstructions for the Upper Colorado River Basin: Placing Recent Droughts into a Centuries-Long Context](#) (June 2006), [The State of Western Water: Summer 2005](#) (July 2005), [Colorado River Basin Water Year 2005 Outlook](#) (Jan 2005).

- Ray, AJ, Nancy Schmidt, BJ Morehouse, and RS Webb, 2003: *Report on Research Opportunities for Climate and Society Interactions in the North American Monsoon Region*. Workshop on Applications and Human Dimensions of Monsoon Research 18-20 June 2001, Tucson, AZ, Institute for the Study of Planet Earth, University of Arizona, 42 pp. [http://www.esrl.noaa.gov/psd/people/andrea.ray/MonsoonCSI\\_rept\\_2002.pdf](http://www.esrl.noaa.gov/psd/people/andrea.ray/MonsoonCSI_rept_2002.pdf)
- Ray, AJ, and RS Webb. 2000. *Demand-side perspective on climate services for reservoir management*. Proceedings of the Climate Diagnostics and Prediction Workshop, Palisades, NY, 23-27 October 2000. pp 219-222. [http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray\\_cdpw2000\\_proceedings.pdf](http://www.esrl.noaa.gov/psd/people/andrea.ray/Ray_cdpw2000_proceedings.pdf)
- Ray, AJ, and RS Webb, 2000. *CDC Experimental Climate Services: some perspectives from Current activities*, Proceedings of the NOAA Applied Research Centers meeting, March 20-23, 2000, Palisades, NY. pp 219-222. [abstract](#).
- Ray, AJ. 2000. *Climate and Water Management in the Interior West: a critical water problems approach*, Proceedings of the 16th Annual Pacific Climate Workshop on Climate Variability of the Eastern North Pacific and Western North America ([PACLIM](#)), May 24-27 1999. Technical Report 65 of the Interagency Ecological Program for the Sacramento-San Joachin Delta., pp 171-182. [abstract](#).
- Interagency Ecosystem Management Task Force, 1995: *Science and Information Issues Chapter*, Prince William Sound Ecosystem Management Case Study, for the White House Ecosystem Management Assessment,
- Interagency Ecosystem Management Task Force, 1995: *Institutional and Management Issues Chapter*, Great Lakes Ecosystem Management Case Study for the White House Ecosystem Management Assessment.
- Ray, A.J., and D. Atwood, eds. 1993. Report of the NOAA Workshop of Coral Ecosystem Research and Monitoring, NOAA Coastal Ocean Program & Office of Global Programs.