CHAS JONES

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HYDROLOGY • ECOLOGY • CLIMATE • SOCIETY

An interdisciplinary expert in hydrology and ecological issues and the dynamic interactions between water, ecology, climate, and society.

Qualifications:
- Grant writing
- Sustainability initiatives
- Public speaking / Mentoring
- International leadership training
- Written and oral communications
- Community service and organization
- Team building and event organization
- Creating socialization opportunities

Technical expertise:
- High-level computer programming / model development
- Human dimensions of ecohydrology and climate
- Integrating traditional knowledge and science
- Spatial, numeric, ecologic, hydraulic, & hydrologic modeling
- Watershed management and restoration
- Remote sensing
- Hydrologic change: dams, water management, and climate
- Time-series analyses of historic, modern, and future climate

EDUCATION

2014 — **Ph.D. Interdisciplinary Hydrology** — University of Alaska Fairbanks (UAF)
Civil and Environmental Engineering Dept. — Fairbanks, Alaska
Dissertation: "The Integrated Hydrologic and Societal Impacts of a Warming Climate in Interior Alaska" [link]

2003 — **M.S. Environmental Science & Policy** — Northern Arizona University (NAU) Flagstaff, Arizona
Thesis: "Predicting cattail responses to the re-watering of a travertine stream: Decommissioning the Fossil Springs Dam" [link]

1998 — **B.S. Biology** — Northern Arizona University
Chemistry minor; Aquatic Ecology emphasis — Flagstaff, Arizona

EXPERIENCE

1/2015 – present — **Oak Ridge Institute for Science and Education Post-Doctoral Fellow** — U.S. Environmental Protection Agency, Corvallis, Oregon 97333

- Developed vulnerability maps for the western U.S. in relation to future climate projections relative to historic observations for temperature, precipitation, potential evaporation, water availability, seasonality of water surplus, and snow accumulation.
- Performed time-series analyses of climatic impacts on precipitation seasonality, rainfall intensity, snowfall, seasonality of runoff, and overall climate for the western United States, including coastal, inland, and transitional watersheds.
- Conduct scientific research intended to support end-users in federal, state or local government whose mission is environmental management of all ecosystem types, including coastal marine, wetland, riparian, terrestrial, and agricultural.
- Collaboratively developed and derived new methods to map wetland connectivity on a continental scale for Canada, Mexico and the United States using biophysical, climatic, land cover & geophysical data.

8/2009 – 12/2014 — **Ph.D. Student, Interdisciplinary Hydrology** — University of Alaska Fairbanks, Fairbanks, AK

- Integrated traditional knowledge and science to investigate the social-ecological impacts of climate-related changes in hydrology on indigenous Alaskans
- Model and publish a paper on the ecological influence on human well-being and the value of ecosystem services associated with driftwood (i.e. economic impacts of the changes in hydrology associated with climate).
- Primary author on two peer-reviewed scientific articles, one manuscript under review in a peer-reviewed journal, and one manuscript in preparation for submission; contributing author on one peer-reviewed manuscript; other publications include a book, a book chapter, an extended abstract, and a newsletter.
- Raised over $225,000 in research and travel funding via 32 grants and awards
- Received two awards of special recognition including the Community Stewardship Award (2013 Western Alaska Interdisciplinary Science Conf.) and the IARC Scientist of the Month (May 2014)

8/2009 – 1/2012 (p/t)
10/2006 – 8/2009 (f/t)

Consultant - Restoration Ecology Parametrix, Inc., Albuquerque, NM

- Conducted ecological risk assessments to inform the development of fish and wildlife habitat restoration plans to mimic historic ecological function and processes for New Mexico and Arizona riparian areas
- Primary author on six project reports and contributing author on three large-scale habitat restoration plans
- Developed and conducted large-scale ecosystem monitoring plans to assess habitat restoration implementation programs
- Worked on a team to develop habitat restoration plans for he Middle Rio Grande, which included the development of a work plan, development of operational changes for dam operations, identifying appropriate solutions to technical challenges, and derive innovative solutions to problems faced by endangered species in the region.
- Developed, managed, and maintained groundwater database in Access for Army Corps of Engineers groundwater monitoring program that contained greater than one million records

2/2005–10/2006

Consultant - River/Riparian Ecologist ENTRIX, Sacramento, CA

- Directed 12-person field teams during research projects related to stream restoration and hydro-power relicensing
- Evaluated physical and biological data to recommend best management practices for restoration activities for endangered bird species
- Wrote numerous technical reports describing the impacts of hydroelectric dams in California that were incorporated into dam relicensing application by senior project managers

2/2004 – 2/2005

Research Associate - Instream Flow Modeler Oklahoma State University, Stillwater, OK

- Assessed the ecological impacts associated with a proposed water extraction project from the Kiamichi River watershed in Oklahoma
- Modeled water resource development alternatives and potential habitat impacts to develop recommendations for water policy and management for endangered species

PUBLICATIONS *In preparation*

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K.A. Sawicz, and P.J. Wigington Jr. Hydrologic Vulnerability of the Western U.S.: Comparing the historic and projected water balance using hydrologic landscapes. (In prep.)

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K.A. Sawicz, and P.J. Wigington Jr. An assessment of streamflow vulnerability to climate using a hydrologic landscape approach in the western U.S.A. (In prep.)

K.A. Sawicz, S.G. Leibowitz, P.J. Wigington, Jr., R.L. Comeleo, **C.E. Jones**. Verification and application of hydrologic landscape-based watershed-scale classification to gaged/ungaged watersheds in the Pacific Northwest, USA. (In prep.)

Leibowitz, S.G., M.C. Rains, I.F. Creed, R.A. Hill, M.H. Weber, D. Aldred, **C.E. Jones**, and J.R. Christensen. Wetland Hydrological Connectivity: A classification approach and North American Assessment. (In review).

Jones, C.E., R. Churchwell, K. Walter-Anthony, and E. Schwing. 2015. A canary in the coal mine: permafrost thaw leads to bird mortality. (in review).

Jones, C.E., K. Kielland, A. Prakash, & L.D. Hinzman. 2015. Mapping dangerous ice conditions on the Tanana River using high-resolution satellite imagery. (Submitted to PLOS One).

Peer-reviewed

Jones, C.E., K. Kielland, L.D. Hinzman, & D. Kane. 2015. Modeling groundwater upwelling as a control on river ice thickness. Hydrology Research. 46:4 566-577. [link]

Jones, C.E., K. Kielland, L.D. Hinzman, & W. Schneider. 2015. Integrating local knowledge and science: Economic consequences of driftwood harvest in a changing climate. Ecology and Society. 20(1) 1-25. [link]

Rowland, J., **C.E. Jones**, et al. 2010. Arctic landscapes in transition: Responses to thawing permafrost. EOS Transactions, American Geophysical Union. 91. 229-230. [link]

Book / Book Chapters

Schneider, W.S., K. Brewster, K. Kielland, & **C.E. Jones**. 2013. On Dangerous Ice: Changing conditions on the Tanana River. Univ. of Alaska Fairbanks Press, Fairbanks, AK. 76 pp. [link]

Jones, C.E. & R. Houk. 2004. Growing more than vegetables: Bob Kauer's shared harvest community garden. Pages 47–49. In P. Friederici and R. Houk (editors), A New Plateau: Sustaining the Lands and Peoples of Canyon Country. Renewing the Countryside. Minneapolis, MN.

Conference Proceedings

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Modeling groundwater upwelling as a control on river ice thickness. Proceedings of the 19th International Northern Research Basins Symposium and Workshop. Southcentral AK. August 11–17, 2013. 107-115.

Jones, C.E. & P. Phillips. 2001. An analysis of the proposed decommissioning of Fossil Creek Dam, near Strawberry, AZ**.** Hydrology and Water Resources in Arizona and the Southwest; Proceedings of the meetings of the Arizona Section, American Water Resources Assn. and the Hydrology Section, Arizona Academy of Science. 31:34-41.

News articles / Newsletters

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Modeling permafrost degradation as a control on river ice thickness. Changing Ice. September 2013. 2: pg. 8.

Professional Reports

Jones, C.E., T. Caplan, & C. Landers. 2008. Cibola Fire Revegetation Plan, Cibola National Wildlife Refuge: Part 1, Cibola, AZ. Prepared by Parametrix and Soil & Water West, Inc. Albuquerque, NM. December 2008.

Fisher, W.L., J.R. Bidwell, C.A. Davis, D.J. Turton, C.C. Vaughn, **C.E. Jones**, D.E. Spooner, & Oklahoma Department of Wildlife Conservation. 2007. Review of ecosystem flow requirements for the Kiamichi and Little rivers basins in southeastern Oklahoma. Oklahoma Dept. of Wildlife Conservation. Oklahoma City, OK. 167 pp.

Fisher, W.L., **C.E. Jones**, W. Layher, & E. Brinkman. 2005. Instream flow modeling for mussels and fishes in southeastern Oklahoma. Final Report, State Wildlife Grant T-8-P, Oklahoma Department of Wildlife Conservation, Oklahoma City, OK. 162 pp.

Fisher, W.L., C.K. Belt, & **C.E. Jones**. 2004. Instream flow studies in a key southeastern Oklahoma Stream. Final Report, U.S. Geological Survey, Reston, Virginia. 12 pp.

SELECT PRESENTATIONS

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K. Sawicz, and P.J. Wigington. 2016. As assessment of streamflow vulnerability to climate using Hydrologic Landscape Classification. 2016 Fall Meeting of the American Geophysical Union, San Francisco, CA. December 2016.

Jones, C.E. 2016. Using Hydrologic Landscape Classification to Assess Climatic Vulnerability. Northwest Climate Conference, Stevenson, WA. Nov 14-16, 2016.

Jones, C.E. A collaboration with rural Alaskans: The driftwood harvest in a changing climate. Invited webinar speaker. Alaska Center for Climate and Policy. July 2016.

Sawicz, K.A., S.G. Leibowitz, **C. E. Jones**, R.L. Comeleo, P.J. Wigington. Applicability of Hydrologic Landscapes for Model Calibration at the Watershed Scale in the Pacific Northwest. Pacific Northwest Water Resources Symposium. April 2016.

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K. Sawicz, and P.J. Wigington**.** An Analysis of Historic and Projected Climate Trends in the Western United States using Hydrologic Landscapes. 2015 Fall Meeting of the American Geophysical Union, San Francisco, CA. December 2015.

Sawicz, K., S. Leibowitz, **C. Jones**, R. Comeleo, and P. Wigington. On the Usefulness of Hydrologic Landscapes for Hydrologic Model Calibration and Structure. 2015 Fall Meeting of the American Geophysical Union, San Francisco, CA. December 2015.

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K. Sawicz, and P.J. Wigington. An Analysis of Historic and Projected Climate Trends in the Western United States using Hydrologic Landscape Classification. Northwest Climate Conference, Coeur d'Alene, ID. November 3-5, 2015.

Jones, C.E., S. Leibowitz, R. Comeleo, L. Stratton, K. Sawicz, and P.J. Wigington. 2015. Using hydrologic landscapes to evaluate the hydrologic effects of climate in the southwestern U.S. Biennial Conference of Science and Management on the Colorado Plateau & Southwest Region, Flagstaff, AZ. October 5-8, 2015.

Jones, C.E. 2014. Ecohydrological linkages: Connections between hydrology, climate, and people of the North. UAF Dissertation Defense. Fairbanks, AK. Sept. 30, 2014.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2014. Sociohydrological modeling: Using local knowledge and hydrologic data provide insight on harvesting driftwood from rivers in Interior Alaska. 2014 Arctic Science Conference. Fairbanks, AK. Sept. 27-28, 2014.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2014. Using local knowledge and science to examine driftwood harvest in a changing climate in Interior Alaska. 2014 Resilience Conference. Montpelier, France. May 3-8, 2014.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2014. Degrading permafrost leaves us on thin ice. 2014 Arctic Science Summit Week, Helsinki, Finland. April 7-11, 2014.

Jones, C.E., K. Kielland, W.S. Schneider, & S. Demienteff. 2014. On Dangerous Ice – Rules for navigating safely on river ice. AWRA Public Lecture at Univ. of Alaska Fairbanks. Fairbanks, Alaska. Feb. 5, 2014.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Degrading permafrost leaves us on thin ice. 2013 AGU Fall Meeting. San Francisco, CA. Dec. 8-13, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Integrating Alaskan Local Knowledge and Science to Model Driftwood Harvest from the Yukon River in a Changing Climate. 2013 AWRA Annual Conference. Portland, OR. Nov. 4-7, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Modeling groundwater upwelling as a control on river ice thickness. The 19th International Northern Research Basins Symposium and Workshop. Southcentral AK. August 11–17, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Connecting the dots... Linking permafrost degradation, groundwater upwelling, and ice thickness. Department of Natural Resources Brown Bag Luncheon, Fairbanks, AK. April 3, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2013. Modeling the thermal balance between groundwater springs and river ice. 2013 Alaska Section of the American Water Resources Association Meeting, Anchorage, AK. March 3–7, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. Integrating local knowledge and hydrology to model driftwood harvest from the Yukon River in a changing climate. 2013 Western Alaska Interdisciplinary Science Conference, Nome, AK. March 20-22, 2013.

Jones, C.E., K. Kielland, & L.D. Hinzman. 2012 Modeling the thermal balance between groundwater springs and river ice. 2012 American Geophysical Union Meeting, San Francisco, CA. December 3–7, 2012.

Jones, C.E., L.D. Hinzman, & K. Kielland. 2012. Characterizing seasonal and spatial variability of groundwater in the Middle Tanana Valley. 2012 Alaska EPSCoR Annual Meeting, AK. May 24-25, 2012.

Jones, C.E., L.D. Hinzman, & K. Kielland. 2011. Integrating remote sensing and traditional knowledge to assess hazardous river conditions. 2011 AWRA Alaska Section Annual Conference, Fairbanks, AK. April 4–6, 2011.

Jones, C.E. & W.L. Fisher. 2004. Exposed! Potential Impacts of Flow Reductions on Mussels in the Kiamichi River. In 93rd annual technical meeting. Oklahoma Academy of Science, Edmond, OK.

Jones, C.E. & N.C. Johnson. 2003. Decommissioning the Fossil Creek Dam is predicted to reduce suitable *Typha* habitat. In 47th annual ANAS meeting. Arizona-Nevada Academy of Science, Flagstaff, AZ.

Jones, C.E. & N.C. Johnson. 2002. A spatial model of macrophyte habitat in Fossil Creek, Arizona: Recommendations for decommissioning a dam. In 87th annual ESA Meeting. Ecological Society of America, Tucson, AZ.

Koch, G.W., D.L. Rowland, **C.E. Jones**, & N.C. Johnson. 2002. Evidence of a strong soil organism effect on plant response to CO_2 and nitrogen enrichment. In 87th annual ESA Meeting. Ecological Society of America, Tucson, AZ.

Jones, C.E. & P. Phillips. 2001. Simply remove the Fossil Creek Dam? In 1st annual VWREP conference. Verde Watershed Research and Education Program, Camp Verde, AZ.

Jones, C.E. & P. Phillips. 2001. An analysis of the proposed decommissioning of Fossil Creek Dam, near Strawberry, AZ**.** Hydrology and Water Resources in Arizona and the Southwest; proceedings of the meetings of the Arizona Section, American Water Resources Assn. and the Hydrology Section, Arizona Academy of Science. 31:34-41.

LEADERSHIP

- River Refuge Coalition, Northwest Climate Center, 2016- present
- Board of Directors, Corvallis Environmental Center, 2016- Present
- Program Committee Member, Northwest Climate Conference, 2016
- Co-convener for hydrology session, AGU Fall Meeting, 2016
- Directed Professional Development Seminar Series (EPA), 2015
- Organized full-day Career Development Workshop (UAF), 2014
  - Raised $7,700 from 7 groups to host an invited speaker and workshop
- Invited to APECS/ASSW Nordic workshop, Helsinki, Finland, 2014
- Directed Professional Development Seminar Series (UAF), 2013
- Attended Grant Writing Workshops I & II (UAF), 2013
- Peer Reviewer (Geophysical Research Letters), 2013
- Community Garden Founder / Chairperson (UAF), 2012-2014
  - Raised $5,000 for garden construction and facilitated acquisition of $13,500 for construction materials
- Student Sustainability Board member (UAF), 2011–2014
  - Distributed $400,000 annually to increase campus sustainability
- Invited to Leaders in Sustainability Short Course (Hokkaido University, Japan), 2011
- Resilience and Adaptation Program Steering Committee (UAF), 2011-2013
- Visiting Scholar (Stockholm University), 2010
- Employee Leadership Council Representative (Parametrix), 2007–2009
- Organizer, Environmental Science graduate student river trips (NAU), 2001 & 2002
- College of Liberal Arts and Sciences Dean search committee (NAU), 2001
- Founding member (Verde River Citizens Alliance), 2001

GRANTS, AWARDS, & HONORS

- Certificate of recognition for developing wetland connectivity maps for N. America, U.S. E.P.A.
- ORISE Post-Doctoral Appointment, 2015–present
- Alaska EPSCoR Travel Grant, 2014
- Resilience and Adaptation Travel Award, 2014
- USGS Geophysical Methods Workshop Tuition Grant, 2014
- Scientist of the Month, International Arctic Research Center, May 2014
- APECS workshop travel grant, 2014
- Fairbikes program RISE proposal: Bridging UAF to Fairbanks, $22,000, 2014
- Waterless urinal installation RISE proposal, $20,000, 2014
- Environmental issues slam competition RISE proposal, 2014
- Alaska Climate Science Center Fellowship, $32,000, 2013
- Resilience and Adaptation Research Award, $12,500, 2013
- 19th Northern Research Basins Symposium and Workshop, Alaska, 2013
- Alaska EPSCoR Summer Research Assistantship, 2013
- Alaska Center for Global Change Research Grant, $8,000, 2013
- Community Stewardship Award (Western Alaska Interdisciplinary Science Conf.), 2013
- Resilience and Adaptation Travel Award, 2013
- Arctic Division of AAAS Travel Award, 2013
- Water & Environmental Research Center Travel Grant, 2013
- Alaska Climate Science Center Fellowship, $13,250, 2012
- UAF People's Endowment Award (UAF Community Garden), $5,000, 2012
- Alaska EPSCoR Fellowship, $13,000, 2012
- Alaska Climate Science Center Travel Award/WERC, 2012
- Water & Environmental Research Center Travel Grant, 2012
- National Institute of Water Resources Grant, $22,000, 2011–2012
- Leaders in Sustainability 8-week Course, Hokkaido Univ., Japan, $15,000, 2011
- Water & Environmental Research Center Travel Grant, 2011
- Water & Environmental Research Center Travel Grant, 2011
- Alaska EPSCoR Fellowship, $16,000, 2011
- Alaska EPSCoR Travel Award, 2011
- Alaska EPSCoR Travel Award, 2010

- Resilience and Adaptation Program IGERT Fellowship, $94,000, 2009–2011
- Merriam Powell Environmental Research Fellowship, $12,000, 2002–2003
- Verde Watershed Research & Education Program Grant, $7,500, 2002–2003
- Verde Watershed Research & Education Program Grant, $7,500, 2001–2002
- Bill Morrall Memorial Conservation Scholarship, 2002–2003
- Bill Morrall Memorial Conservation Scholarship, 2001–2002
- NAU/NASA Space Grant for Undergraduate Research, 2001–2002

OUTREACH, SERVICE, & VOLUNTEERING

- Board of Directors, Corvallis Environmental Center, 2016- Present
- Invited Mentor, Oregon State University Hydrophiles water resource conference, 2016
- Guest Lecturer, Reagan Middle School, Dixon, IL, 2015
- Guest Lecturer, Ramsey Elementary School, Coeur d'Alene, ID, 2015
- Science Fair Judge, Pearl Creek Elementary, 2012-2014
- Student Sustainability Board member (UAF), 2011–2014
- Organizer, Four IGERT Polar Interdisciplinary Conference, Juneau, AK, 2011
- Poster judge, American Geophysical Union 2011 Fall Meeting, 2011
- Volunteer educator, Environment and Learning Day, Fairbanks, AK, 2010
- Volunteer educator, Nature Day, Stillwater, OK, 2004
- Science fair judge, Thomas Elementary School, Flagstaff, AZ, 2001 & 2002
- Volunteer server, soup kitchen, Flagstaff, AZ, 2001–2002
- President, Environmental Science and Policy Graduate Student Organization, 2001–2002
- Organizer, NAU Graduate Student Christmas food drive, 2001
- Organizer, Sports equipment donation for the Mexican Seri tribe, 2001

PROFESSIONAL ASSOCIATIONS

- American Geophysical Union
- American Water Resources Association
- Association of Polar Early Career Scientists
- Permafrost Young Researchers Network

COMPUTING SKILLS

PYTHON, Matlab, R, FORTRAN, ArcGIS, Sigmaplot, SASJmP, SAS, MSAccess, ENVI, ExaminIR, FLO-2D, HEC-RAS, ModFlow, HTML programming, Adobe Photoshop, Adobe Illustrator, Agisoft Photoscan, PHabSim

TRAINING & CERTIFICATION

- USGS Geophysical Research Methods Workshop, 2014
- Beginning Grant Writing Workshop, 2013
- Intermediate Grant Writing Workshop, 2013
- Learn to Return – Survival/Wilderness First Aid Training, 2012
- Ethical Conduct in Research, 2011
- Swiftwater River Rescue Certification, 2011
- Bear safety course with Shotgun Instruction, 2011
- Rosgen 1 – Applied River Morphology, 2009
- Parametrix Quantifying ecosystem services workshop, 2007
- Wilderness First Aid, 2006
- FLO-2D Flood Routing Model Certification (River and Tsunami surge impacts), 2006