

Workshop on Scaling and Uncertainty Analysis in Ecological Studies:
Methods and Applications

Time: October 17-19, 2002

Place: Copper Room, Twin Palms Hotel, 225 E. Apache Blvd, Tempe (480-967-9431)

SCHEDULE

TIME	ACTIVITIES
Oct. 16 (Wed)	Participants arriving at Twin Palms Hotel
Oct. 17 (Thu)	Whole-day meeting: 8:30 am – 5:20 pm
7:30 – 8:30 AM	Breakfast and on-site registration in the conference room (Copper Room)
8:30 – 8:50 AM	Wu ¹ , Jianguo, Bruce Jones ² , and Harbin Li ³ . ¹ Arizona State University, Tempe, AZ; ² US Environmental Protection Agency, Las Vegas, NV; ³ US Forest Service, Charleston, SC. Introduction/Workshop Schedule/Logistics
8:50 – 9:30 AM	Wu ¹ , Jianguo, and Harbin Li ² . ¹ Arizona State University, Tempe, AZ; ² US Forest Service, Charleston, SC. Spatial scaling: An overview of methods and applications.
9:30 – 10:10 AM	Berk, Richard, and Jan de Leeuw. University of California, Les Angeles, CA. Rethinking multilevel statistical models for regional ecological studies.
10:10 – 10:30 AM	COFFEE BREAK
10:30 – 11:10 AM	Reynolds, James F. Duke University, Durham, NC. Scale-related uncertainties in landscape dynamics of the Jornada during the past 100 years: Models provide valuable insights but few answers.
11:10 – 11:50 AM	Loucks, Orié L. Miami University, Oxford, OH. Downscaling issues in region-wide water quality decision-making.
12:00 – 1:00 PM	LUNCH (Provided in the conference room)
1:00 – 1:40 PM	Groffman ¹ , Peter M., Louis V. Verchot ² and Rodney T. Venterea ¹ . ¹ Institute of Ecosystem Studies, Box AB, Millbrook, NY; ² International Centre for Research in Agroforestry, Nairobi, Kenya. Landscape and regional scale studies of nitrogen gas fluxes.
1:40 – 2:20 PM	Law, Beverly E., D. Turner, P. Schwarz, M. Guzy, M. Lefsky, S. Van Tuyl, and J. Campbell. Oregon State University, Corvallis, OR. Carbon fluxes across regions: Observational constraints at multiple scales.
2:20 – 3:00 PM	Johnston, Carol A., and Boris A. Shmagin. University of Minnesota, Duluth MN. Scaling of watershed/lake interactions.
3:00 – 3:20 PM	COFFEE BREAK
3:20 – 4:00 PM	Urban, Dean L., Rob I. McDonald, and Emily S. Minor. Duke University, Durham, NC. Causes and consequences of land use change in the North Carolina Piedmont.

4:00 – 4:40 PM Wessman, Carol. University of Colorado, Boulder, CO. **Building up with a top-down approach: The role of remote sensing in deciphering functional and structural diversity.**

4:40 – 5:20 PM Li, Baillian (Larry). University of California, Riverside, CA. **Self-organized complexity, hierarchy and scaling.**

Dinner on your own (see the attached list of recommended restaurants).

Oct. 18 (Fri) Whole-day meeting: 8:30 am – 5:20 pm

7:30 – 8:30 AM Breakfast in Copper Room

8:30 – 9:10 AM Li¹, Harbin, and Jianguo Wu². ¹US Forest Service, Charleston, SC; ¹Arizona State University, Tempe, AZ. **An overview of uncertainty and error analysis in ecological studies.**

9:10 – 9:50 AM Forest, Chris. Massachusetts Institute of Technology, Boston, MA. **Uncertainty analysis of climate change: A Global-scale Understanding.**

9:50 – 10:30 AM Peters, Debra, Kris Havstad, Jeff Herrick, Laura Huenneke, Al Rango, Bill Schlesinger, and others. USDA-ARS and New Mexico State University, Las Cruces, NM and Duke University, Durham, NC. **Uncertainty in extrapolation across spatially and temporally heterogeneous arid landscapes.**

10:30 – 10:50 AM **COFFEE BREAK**

10:50 – 11:30 AM He, Fangliang. Canadian Forest Service, Victoria, Canada. **Multifractal patterns in species distribution.**

11:30 – 12:10 PM Crawford, Melba et al. University of Texas, Austin, TX. **Upward Scaling In Remote Sensing and Classification of Riparian Vegetation, Lower Rio Grande Valley, Texas**

12:10 – 1:30 PM **LUNCH (Provided in the conference room)**

1:30 – 2:10 PM Wickham, James D., K. B. Jones, and T. G. Wade. US Environmental Protection Agency, Research Triangle Park, NC and Las Vegas, NV. **Effect of scale on watershed nutrient export.**

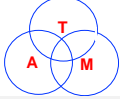
2:10 – 2:50 PM Johnson, Lucinda B., Thomas Hollenhorst, George E. Host, and Carl Richards. University of Minnesota, Duluth, MN. **Scale effects in mapping riparian zones in agricultural landscapes.**

2:50 – 3:30 PM Cherkauer, K. A. N., Naveh, S. J. Burges, D. B. Booth, R. N. Handcock, J. E. Kay, and A. Gillespie. University of Washington, Seattle, WA. **Observation and analysis of regional controls on stream temperatures.**

3:30 – 3:50 PM **COFFEE BREAK**

3:50 – 4:30 PM Lloyd, Penn, Thomas E. Martin, Melissa M. Hart, Roland L. Redmond, Ute Langer, and Ronald D. Bassar. University of Montana, Missoula, MT. Using the **BBIRD (Breeding Biology Research and Monitoring Database)** program to assess the influence of spatial scale on the relationship between avian nesting success and forest fragmentation.

4:30 – 5:20 PM



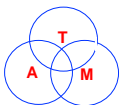
- Questions and general discussion on presentations
- Formation of breakout groups (2 groups; see [List of Breakout Groups](#))
- Tasks for group discussions

Dinner on your own (see the attached list of recommended restaurants).

Oct. 19 (Sat) Half-day meeting: 8:30 am – 2:30 pm

7:30 – 8:30 AM Breakfast in Copper Room

8:30 – 10:20 AM

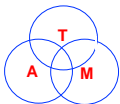


Breakout group discussion (see the Venn diagram):

- Scaling
- Uncertainty analysis
- Integration between scaling and uncertainty analysis
- Top 10 lists
 - o Top-10 list of scaling theory and methods
 - o Top-10 list of scaling applications in ecology
 - o Top-10 list of scaling problems in ecology
- Identify important areas the workshop did not cover

10:20 – 10:40 AM **COFFEE BREAK**

10:40 – 12:00 PM



Whole-group discussion (all participants in Copper Room):

- Group reports
 - o Scaling
 - o Uncertainty analysis
 - o Integration between scaling and uncertainty analysis

12:00 – 1:00 PM **LUNCH (Provided in the conference room)**

1:00 – 2:00 PM

Group discussion/synthesis:

- Top-10 list of scaling theory and methods
- Top-10 list of scaling applications in ecology
- Top-10 list of scaling problems in ecology
- Important areas the workshop did not cover

2:00 – 2:30 PM

Next steps/Book plan

2:30 PM

Workshop adjourns.
