

NCPD Quantitative Evaluation of Downscaling Workshop 12-16 August, 2013

NCAR, Foothills Laboratory, Boulder, Colorado

(10 August 2013)

All Plenary sessions are in the Main Auditorium – FL2-1022

Some times and presentations may change before the workshop.

Day/Room	Time	Session/Speaker	Topic	Details
<b>Monday August 12</b>				
	8:00-8:50am	Registration		
<b>FL2-1022</b>	8:50-9:00am	Workshop Logistics		Fire exits, bathrooms, internet access
	9:00-9:10am	<b>Welcome from NCAR</b> Tom Bogdan	<b>Session chair</b> Richard Rood	Tom Bogdan
	9:10-9:20am	<b>Welcome from NOAA CPO</b> Wayne Higgins		Overview of workshop, key objectives, expectations for the next few days;
	9:20-9:30am	<b>Evaluation approach of NCPP: Building Community</b> Ricky Rood	Community of practice	Expectations for the next few days; working groups; community of practice;
	9:30-9:50am	<b>NCPD Evaluation Framework: the Practitioner’s dilemma and overall approach</b> Joe Barsugli	Framework and white paper Practitioner’s dilemma	Based on the NCPD white paper – presentation of the <b>framework</b> for evaluation of downscaled projections, protocols, need for standardization; Nutrition label;
	9:50-10:10am	<b>How to use the workshop website in the COG environment</b> Sylvia Murphy		Navigation, Wiki, Data Search
<b>FL2- Cafeteria Atrium</b>	10:10-10:35am	Break and introductions		Use 5 minutes to introduce yourself to 5 people
<b>Motivation and Framework for Evaluation of Downscaling</b>				
<b>FL2-1022</b>	10:35-10:55am	<b>Evaluation approach of NCPP:</b>	Introduction to the NCPD	How were the evaluations done, search tools, images;

		<b>Climate Translator</b> Caspar Ammann	Evaluation platform v.0	Examples of what you can find and how this is useful;
	10:55-11:15am	<b>Evaluation approach of NCPP: Metadata – Describing models and methods</b> Allyn Treshansky	Metadata/CIM	We will demonstrate some web-based tools to view information about downscaling methods, and compare among models.
	11:15-11:45am	<b>Decision perspective -- what is at stake?</b> David Behar		How to choose datasets and methods? Why does this matter?
	11:45-12:20pm	<b>Facilitated discussion: The Need for Evaluation: What do you want from this workshop</b> Facilitators – K. Hayhoe and J. Barsugli		Interactive discussion about the need for evaluation, and defining desired outcomes for participants.
<b>FL2-Cafeteria</b>	12:20-1:30pm	Lunch		
<b>Gridded Observations: Describing methods and Identifying Goals for Evaluation</b>				
<b>FL2-1022</b>	1:30-2:00pm	<b>Title TBD (comparison of downscaled datasets)</b> Ethan Gutmann	Comparison of observed and downscaled datasets	
	2:00-3:15pm	<b>Session: Evaluating gridded observations</b>  Short presentations and facilitated discussion on identifying gaps and needs for evaluation of gridded observed datasets  Chris Uejio – needs for health impacts Andrea Ray (experiences) Ben Livneh (BCSD daily) Michelle Thornton (Daymet) Ruben Behnke - Station comparison		To give 5 min present on their method or of issues they have encountered; how do you compare observed datasets and what is important; Observed gridded datasets evaluations by developers – what do you recommend it for? What do you not recommend it for?
<b>FL2-Cafeteria Atrium</b>	3:15-3:30pm	Break		
<b>Results from Comparison to Observations: Summary Statistics (NCPP Protocol 1, Group 1 Metrics)</b>				

Focus Observational comparison evaluations (Protocol 1) <b>FL2-1022</b>	3:30-3:45pm	<b>Comparison of two gridded observational datasets - Examples</b> Summary and Distributional Metrics (Group 1) Caspar Ammann	Evaluation and characteristics of the <b>baseline data</b> : Observed gridded data inter-comparison comments	
	3:45-4:45pm	<b>Discussion on evaluation of observed datasets</b> Facilitator: Caspar Ammann  Christian Page – using one dataset as a standard	Quality and how to evaluate observed datasets? How important it is having one overall comparison obs dataset?	
	4:45-5:15pm	<b>Discussion: Identifying the community goal for evaluation.</b> Facilitator: TBD		Rationalizing the needs and what issues practitioners and producers of datasets have encountered
<b>FL2- Cafeteria</b>	5:15pm-7:00pm	<b>NCPP OPEN DISCUSSION RECEPTION</b> – Continued discussion		

Day/Room	Time	Session/Speaker	Topic	Details
<b>Tuesday August 13</b>				
<b>Gridded Downscaled Climate Models: Describing methods and Identifying Goals for Evaluation</b>				
<b>FL2-1022</b>	8:30-9:30am	<b>K Hayhoe – The big picture – uncertainty in dynamical vs statistical downscaling</b> K. Hayhoe - ARRM Short presentations and facilitated discussion  <b>Facilitator: TBD</b>  - X.Z. Liang – dynamical downscaling	<b>Session: Gridded downscaled model datasets</b>	The big picture – statistical vs dynamical downscaling; Short presentations: What do you recommend the data for? What do you not recommend it for? What distinguishes your method and what were you trying to accomplish with it? Getting to value-added
<b>Results from Comparison to Observations: Summary Statistics (NCP Protocol 1, Group 1 Metrics)</b>				
Focus Observational comparison evaluations (Protocol 1)	9:30-10:05am	<b>Comparison of downscaled data to Gridded Observations</b> Summary and Distributional Metrics (Group 1) Caspar Ammann  Discussion Facilitator: Joe Barsugli and Caspar Ammann	Evaluation of the characteristics of the <b>downscaled climate data</b> : Downscaled projections evaluation	
<b>FL2-Cafeteria Atrium</b>	10:05-10:20am	Break		
<b>Applications and Process-based Metrics</b>				
<b>FL2-1022</b>	10:20-10:50am	<b>Applications presentation Ecosystems</b> <b>Connecting downscaled climate data to ecological modeling</b> Jeff Morissette, North Central Climate Science Center		

	10:50-11:50am	<b>Developing of Applications Metrics (Group 2)</b> Galia Guentchev, Andrea Ray  <b>Process-based metrics</b> Melissa Bukovsky  Questions and discussion	Case studies and evaluations from an applications perspective  Need for evaluation of processes	Short introduction of Applications needs – Case study presentations and needs for evaluations; Metrics group 2  What would “process-based” metrics look like? How could they be used?
<b>FL2-Cafeteria</b>	11:50-1:05pm	Lunch		
<b>“Perfect Model” Experiments: Testing Stationarity in Statistical Downscaling (NCP Protocol 2)</b>				
Focus Perfect model experiments (Protocol 2) <b>FL2-1022</b>	1:05-1:50pm	<b>Evaluation framework – Perfect model experiments</b> Keith Dixon	Perfect model experiments	Methodology and how other people can use the approach;
	1:50-2:05pm	<b>How to access and use the perfect model datasets</b> Aparna Radhakrishnan	Show and tell – perfect model datasets	Introduction to the set of datasets available online and how they can be used;
	2:05-2:35pm	Discussion: Facilitator: Keith Dixon		
Focus Idealized comparisons (Protocol 3)	2:35-3:05pm	<b>Evaluation framework – Idealized comparisons</b> <b>When bias correction introduces bias</b> Joe Barsugli <b>Idealized tests</b> John Lanzante Discussion	Idealized comparisons – 2 examples and group discussion	Simple assessments of methods using synthetic time series or known distributions. Analogous to tests done for dynamical cores where an analytic solution is known. Can these be developed for downscaling?
	3:05-3:45pm	<b>Community Efforts</b> RCMES <i>COST-Value</i> Christian Page		Baseline for our efforts; JB - introduction of the evaluation summaries and the “nutrition label”; STARDEX
<b>FL2-Cafeteria Atrium</b>	3:45-4:00pm	Break – go to breakout rooms		
<b>Breakout rooms:</b> <b>FL2-1002</b>	4:00-5:00pm	<b>Breakouts: Use and development of the model frameworks</b>  Breakout groups according to	Focus: 1) issues related to the framework 2) evaluation ‘nutrition label’	Discuss the issues related to the framework – specifically the process based metrics, idealized experiments, applications related metrics;

<p>FL2-1003 FL2-EOL Atrium FL3-1067 FL2-1022</p>		<p>interest in evaluation and downscaling.</p> <p>Discussions and time to explore the web resources.</p> <p>Facilitators will move from room to room providing assistance in the various frameworks.</p>	<p>3) Perfect model experiments – ideas, issues, hands on</p>	<p>Brainstorming on how to do nutrition label; How to do the perfect model experiments; Next steps in fine-tuning the evaluation framework – what worked and what did not work? What else needs to be added? What needs to be changed? What does need to be done by the developers of downscaled data – what gaps are there in relation to applications? Potential for collaboration with other efforts; - <b>Observational Data</b>: gaps and needs in observational data / probabilistic series - <b>Framework</b>: gaps and needs in evaluation framework - <b>Indices</b>: Standardization and diversity - <b>Evaluation Tools</b>: gaps and needs - <b>MetaData</b>: uses and needs - Bias correction documentation and needs - <b>Idealized</b> / coordinated method intercomparisons: next <b>perfect model</b>? - <b>Ensemble</b> capabilities</p>

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<b>Weds. August 14</b>				
<b>FL2-1022</b>	8:30-9:30am	<p><b>Summary of the first two days</b></p> <p>Ricky Rood, Joe Barsugli, and rapporteurs from Tuesday's breakouts.</p> <p><b>Next steps for Downscalers:</b> Discussion on development and use of community-based evaluation standards and tools. Potential for collaborations among downscalers</p>	Reports from the breakout room discussions and notes from the first two day's lectures and discussions	<p>JB and GG – to get the notes from breakout rooms;</p> <p>Next steps in fine tuning the evaluation framework – what worked and what did not work? What else needs to be added? What needs to be changed? What does need to be done by the developers of downscaled data – what gaps are there in relation to applications? - Potential for collaborations; other efforts</p>
	9:30-10:00am	<b>Applications presentation: Water</b> Ed Maurer	Downscaling for the world of water	
<b>FL2-Cafeteria Atrium</b>	10:00-10:15am	Break		
	10:15-12:00pm	<p><b>Panel discussion – Using downscaled data in the real world: Sharing experiences: Part I</b></p> <p>Julie Winkler Radley Horton (video) Allison Adams Discussion</p>	Making choices when working with downscaled datasets; Flowcharts; questions; experiences of what worked and what didn't. Opportunity for all to share experiences.	
<b>FL2-Cafeteria</b>	12:00-1:15pm	Lunch		

FL2-1022	1:15-2:30pm	<p><b>Experiences from regional assessments, “Perfect model” – how is this useful for applications</b> Katharine Hayhoe</p> <p><b>Uncertainty: Guidance for Applications</b> <b>Title:TBD</b> Linda Mearns</p> <p>Discussion related to last 2 talks</p>	<p>Regional assessments for multiple applications; Perfect model results – user related presentation Issues of stationarity</p> <p>Uncertainty of climate information</p>	<p>Also possibly discuss NARCCAP and CORDEX</p>
	2:30-3:00pm	<p><b>Hands-on Demo: Open Climate GIS: Getting data and indices for your region</b></p> <p>Ben Koziol</p>	<p>How to work with OCGIS presentation</p>	<p>We will demonstrate NCCPP’s first web interface to OCGIS as a proof of concept, and encourage discussion of how to make this useful for the community.</p>
FL2-Cafeteria Atrium	3:00-3:30pm	Break – Return to Breakout Rooms		
<b>Applications Working Groups: Problem definition, data needs and strategy</b>				
<p>Start simultaneous work of applications groups and downscalers in break out rooms</p> <p><b>Breakout rooms:</b></p> <p><b>FL2-1002</b> <b>FL2-1003</b> <b>FL2-EOL</b> <b>Atrium</b> <b>FL2-3107</b></p>	3:30-5:00pm	<p><b>Applications Working Groups: Problem Definition</b></p> <p>The three AWG breakout times are intended to be a group exercise in structured problem solving Document the types of applied problems you are considering, the potential data needs, and how you would go about deciding among datasets.</p>	<p>Problem Definition; Identification of data and resources</p>	<ul style="list-style-type: none"> <li>- Introductions in more detail</li> <li>- More detailed structure of the next day – what are our plans, what tools will be used, what is expected from their participation</li> <li>- What people would like to come out of the workshop with;</li> <li>- How to use OCGIS; sub--setting, mapping – in teams;</li> <li>- How to use the NCCPP evaluation stored images and metadata;</li> <li><b>Groups leads</b> – GG and RR, JB, AR and CA;</li> <li>- How the tools may be useful;</li> </ul>

Day/Room	Time	Session/Speaker	Topic	Details
<b>Thursday August 15</b>				
<b>Applications – Need for climate data and sharing experiences with use of climate information</b>				
<b>FL2-1022</b>	8:30-9:00am	<b>Key note: Human health impacts needs</b> <b>Shubhayu Saha CDC</b>		
	9:00-10:15am	<b>Panel discussion: Using downscaled data in the real world: Sharing experiences: Part II</b> Levi Brekke Patrick Kinney John Gross Adrienne Wootten	The “Good”, the “bad” and the “ugly” – practices for use of climate information  Flowcharts and decisions in carrying out a climate change study	
<b>FL2-Cafeteria Atrium</b>	10:15-10:30am	<b>Break – Return to Breakout Rooms</b>		
<b>Applications Working Groups: Using quantitative evaluations</b>				
<b>Breakout rooms:</b>  <b>FL2-1002</b> <b>FL2-1003</b> <b>FL2-EOL</b> <b>Atrium</b> <b>FL2-3107</b>	10:30-12:00pm	<b>Applications Working Group: Analysis</b>  Hands on work with NCPP evaluations, OCGIS and other tools.  How would evaluations help in deciding how to proceed with a climate change adaptation study?  What are the priority evaluations to include in a “nutrition label” for a dataset that speak to your application?	Analysis: Using results from evaluations	- Discuss <b>results from the case studies</b> evaluations for various locations, regions, elevations; using sub-setting capability of OCGIS and working together or in teams  The <b>nutrition label</b> – what are the priorities that you would like to see in the evaluations  Discuss results from overall evaluations from Protocol 1 and Protocol 2 – how it can be applied?  What <b>other tools might you use</b> ?  How to help people deal with uncertainty;
<b>FL2-Cafeteria</b>	12:00-1:15pm	<b>Lunch</b>		
<b>Applications Working Groups: Developing guidance</b>				
<b>Breakout rooms:</b>	1:15-3:00 pm	<b>Applications Working Group: Analysis: Synthesis</b>	Synthesis – how to use the information	- Translational information and guidance needs list - Flow chart for other people that would have similar problems;

<p><b>FL2-1002</b>  <b>FL2-1003</b>  <b>FL2-EOL</b>  <b>Atrium</b>  <b>FL2-3107</b></p>		<p>Development of translational information and guidance for the “case study” problems</p> <p><i>Taking examples from the panel discussions or from your experience, document the analysis pathways for development of climate change scenarios for the problems you considered.</i></p>		<p>- Good practices and lessons learned; Identifying issues and what is unique about the problem that needs to be addressed;</p> <p>- Synthesis on the tools and infrastructure and approaches - usability;  - Scientific application oriented capability to represent the knowledge – and guidance related to that - - “Nutrition” label – summary; flow chart;</p>
<p><b>FL2-Cafeteria</b>  <b>Atrium</b></p>	<p>3:00-3:15pm</p>	<p>Break – return to Main Auditorium</p>		
<p><b>FL2-1022</b></p>	<p>3:15-5:00pm</p>	<p><b>Plenary Discussion: What guidance is needed? How can this be communicated?</b></p> <p>Communicating Skill – Ingredients and Nutrition Labels</p>		

Day/Room	Time	Session/Speaker	Topic	Details
<b>Friday August 16</b>				
<b>The Way Forward</b>				
<b>FL2-1022</b>	8:30-9:00am	<b>Keynote: Jerry Hatfield/Look ahead (pending)</b>		
	9:00-10:30am	Applications Working group reports Discussion and synthesis – if not finished on Thu afternoon;  <b>Next steps</b> Facilitated discussion		Summary reports from applications groups work; Identified gaps and needs for applications;  - Needs for evaluation (future workshops) - Summary publications from the workshop, contributors - Outreach and future engagement of the working groups – extending the user communities of practice – webinars, newsletters, other ways of contributing and engaging
<b>FL2-Cafeteria Atrium</b>	10:30-11:00am	Break		
	11:00-12:30pm	<b>Next steps – cont.</b> Facilitated discussion Community building opportunity		- NCPP next steps – CHARMe, DIBBS proposal goals; - Seasonal scales and evaluation;
<b>FL2-Cafeteria</b>	12:30-1:30pm	Lunch		
	1:30pm – early afternoon	Optional hike in the mountains		