

# Climate Change and Water Working Group Science to Engineering Applications in Watersheds Workshop, Seattle, WA, 2015

## Summary comments from Group 4 across all natural theme areas

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Group 4 included representatives from Federal water management agencies, academics developing and working with climate science and climate impacts models, and practitioners at several regional, state, and local domain-scales. The common discussion points from this group over all the targeted breakout sessions were these:

- **Translating science:** This point was common in all group discussions and was often linked to other points – communicating confidence and limits in all models in the chain from GCMs to impacts, e.g. The group agreed that the transfer and translation was in each direction: the users/managers communicating their decisions needing climate science and climate change information, and the developers/producers communicating what science is available and planned for the new future which could inform those decisions. This group also expressed the specific need for physical scientists and biological ones to work together to develop a deeper common language and understanding for communicating across their disciplinary divide.
- **Producing and testing new data and techniques for computing PMP and PMF:** This is a specific point most often related to discussions of weather extremes and changes in those from anthropogenic climate forcing. The idea of PMF, however, is naturally connected to a number of impacts under each of the natural theme areas, including the more general topic of assessing more of the full distribution of extreme events using new statistical techniques, and building new IDF curves.
- **Doing more work in the relatively less-served watersheds:** The group requested that more work on both physical climatology and hydrology and on the biological and ecological responses be designed for applications especially in the outlying states and island territories of the U.S.
- **Evaluating and communicating model performance along the entire model chain:** Practitioners repeatedly expressed the need to know more about the confidence and limits to models in the chain from GCM to impacts, how uncertainties interact along that chain, and how evaluation of all models in that chain can best be done and communicated. Users of climate science and practitioners generally also would like to have better tools for segregating the anthropogenic climate change signal from the noise of internal, unforced natural climate variability; this point connects back to translating and transferring science for operations. Practitioners added that the new emphasis on revealing uncertainty on the science developer side was good, but that it could complicate both evaluation and translation of the science for their impacts applications, so attention to communication is important as more uncertainty is revealed.