

PUB 2011

High Mountains

Data-poor regions



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What is data-poor?

- no nearby stream gauges
- data mediocre?
 - weather forcing from atmospheric models
 - land cover, snow cover from RS products
 - but not all RS products are useful in mountains

How can predictive approaches be made usable?

Barriers from the researchers' perspective

- reward system: no motivation to make models user-friendly or to offer training
- lack of awareness of users' needs
- aversion to risk associated with applied research that may not be scientifically satisfying
- lack of time

How can predictive approaches be made usable?

Barriers from the user's perspective (1)

- lack of time/reactive business model
- aversion to risk of investing time in learning an approach that may not work
- aversion to risk associated with applied research that may not be scientifically satisfying
- cost of purchasing model and training
- if present tools “work,” no motivation
- models may not output what user needs
- “standard of care”

How can predictive approaches be made usable?

Barriers from the user's perspective (2)

- lack of awareness
 - cost of accessing journal articles
 - limited opportunity to attend conferences

How can predictive approaches be made usable?

Other barriers

- university/government research may be seen as unfair competition for commercial products

Solutions?

- researchers can generate outputs for access by users (e.g., as spatial GIS layers)
- research partnerships

How to transfer information from data-rich to data-poor?

Data-rich areas as a test bed

- Use of weather forcing such as NARR and ECMWF to drive models
- Test robustness of models to varying levels of input data quality
- Case studies for PUB emulation exercises to demonstrate predictive capability

How to transfer information from data-rich to data-poor?

What type of model

- simpler process-based models preferred to highly detailed physical process models
- challenge is to develop transferable parameter sets
- onus is on hydrologist to understand processes in the target catchment to ensure the chosen model incorporates them