

PSNERP-Nearshore Science Team (NST)

Monthly Meeting Synthesis

28-29 November 2007

Venue: Dean's Conference Room, Ocean Sciences Building, University of Washington, Seattle, Washington

Attendance: Si Simenstad (Chair; UW), Justin Boevers (UW), Megan Dethier (UW), Kurt Fresh (WDFW), Guy Gelfenbaum (USGS), Fred Goetz (USACE), Tom Mumford (DOE), Hugh Shipman (DOE), Randy Shuman (METROKC), Curtis Tanner (WDFW)

Guests: Jen Burke (UW), Keith Clarke (UCSB-Geography), Michael Rylko (EPA), Marina Alberti and Michal Russo (UW-FWOP), Debbie Hyde (Pierce Co.)

Primary Meeting Topics:

1. *Science Morning:* Keith Clarke, UC-SB, "SLEUTHing Risk of Future Land Use Change"
2. Status report on Future Without Project (FWOP) Phase II (Scenario Building) project
3. NST Peer Review proposal
4. NST recommendation for Change Analysis-Strategic Needs Assessment staffing

Science Morning: Keith Clarke (UCSB), "SLEUTHing Risk of Future Land Use Change"

- Keith Clarke (<http://geog.ucsb.edu/~kclarke>) was invited by the NST to inform us about the state of science involving land use change models that might be adaptable to assessing risk of future restoration opportunity losses (which is desired as a part of SNAR). He provided a comprehensive review of the state of science around land use change models and specifically the model he, students and colleagues have developed (SLEUTH; acronym for Slope, Land cover, Exclusion, Urbanization, Transportation, and Hillshade, the primary input variable driving the model). After an introduction on modeling approaches ("simplifications and reductions in reality to understand it easier and play 'what if' games"), he described a recent EPA (2000) assessment of existing land use change models, 19 of which were considered appropriate. Keith believes that one model can't work for everything, and advocates loose coupling of models to fill gaps.
- Land use change models can provide forecasts of future based on some of the current (California) scenarios of drivers of population growth, decreasing household size, increasing single-member households and 2nd home owners, increasing incomes, lax land-use controls, increased cars and willingness to commute, and aesthetics values. Recent growth factors: smart growth is catching on sporadically, most common in mixed-use developments; concerns over job-housing balance, use of word 'density' is negative, more houses on markets, generation X has different needs.
- SLEUTH was originally designed for animations. It uses a cellular automata, real data, and hindcasting in a GIS data setting. It is open-source code, available to anyone through the website! As of 2 years ago, >100 applications of SLEUTH world-wide. For our demonstration, he used his study of Santa Barbara study – UCIME, Urban Change Integrated Modeling Environment – which was used to provide informed, participatory local decision-making for growth management.
- Lessons learned from SLEUTH: (a) open source code works; (b) cells work best for units; (c) landscape metrics linked-past trends seen in future; (d) the temporal scale of 1 yr appears to work best; (e) issue of land-use aggregation needs to be identified; (f) resolution is best from 30-100m; (g) models without calibration are useless; (h) model coupling is powerful; (i) link models to scenarios; (j) visualization is important; and, (k) better images more believable (postcard from future example).

Status report on FWOP, Phase II (Marina Alberti and Michal Russo, UW-UERL)

- Marina and Michal gave presentation describing emerging results from FWOP Phase II, describing scenarios, methodology of scenario development, final six scenarios, and the document in progress. Scenarios developed to predict assessments through modeling. Scenarios

don't replace models. Scenarios are not predictions, but allow expansion of assumptions for predictions. They described the methodology in detail: (1) laying out scenario parameters and identify drivers of change; and (2) developing final scenarios using experts in field, core teams of climate change and human perceptions.

- NST discussion with Marina/Michal about anticipated questions and uncertainties of approach: (a) mix of dependent and independent variables within each scenario make it hard to either explain or identify cause/effect; (b) need more clarification about the interaction between these variables; (3) confusion about use of indicators and metrics (indicators describe scenario while metrics are only nearshore related?). There was some question why there was no analysis of likelihood of which scenarios will play out; response was that assigning probability to scenarios usually means least probable are excluded, when they shouldn't be (whole point of scenarios is to include what is plausible).
- In continued, internal discussion, NST expressed that: (1) some NST people are more confused now about FWOP scenarios than before presentation; (2) scenarios have yet to display clear link to nearshore Puget Sound—there doesn't appear to be a process to paint a nearshore picture for each scenario? (3) scenarios could show little impact on FWOP or that the program might not make a difference; (4) if explained with greater clarity, the FWOP scenarios appear to be useful for feasibility report, but likely not SNAR.
- NST concerned about how the six scenarios translate to managers and practitioners; suggest that best (alternative) use of scenarios might be to start conversations with stakeholders. However, concern remains that scenarios will not be understood, and they need to be dumbed-down, e.g., VECs could be used to explain scenarios to stakeholders (scenarios have different results on different VECs).

NST Strategic Science Peer Review (Si)

- NST recommends immediate implementation of “strategic science review” to bridge document/product review (which is already in place) and programmatic review (now likely assumed by USACE process established under 2007 WRDA).
- Peer review discussion detailed an USACE budget of \$500,000; Curtis has \$25,000 right now for peer review, and concerned that USACE peer review will take too long, and feedback too late to be included in final GI report.
- Si will prepare a specific peer proposal to PMT that addresses some of the following characteristics:
 - ✓ 3-5 panel members; including a chair who could have additional responsibility to return (if not local) and present findings to NST/EC; meet twice to three times yr⁻¹, depending on budget
 - ✓ have a single point of contact with NST (Chair) but report to EC (specifically co-leads of EC, Col. McCormick and J. Koenings); panel prepares a report that the NST must respond to with panel chair in front of EC
 - ✓ confine their review to CY'08 products that gets NST to end of stage 2; engineering is not ready for review.
 - ✓ Si will circulate a list of candidate disciplines and names from those suggested.

NST recommendation for Change Analysis-Strategic Needs Assessment work group staffing (Si)

- At 11/15 meeting, CA-SNAR workgroup determined evolution of CA-SNAR can't be effectively managed through USACE IDIQ with Anchor. The conclusion was that the NST and its workgroups need a staff body (e.g., GIS technician) to work on data queries, analyze data, generate GIS maps, etc. Anchor IDIQ does not allow the flexibility and on-call capability.
- At this point, Jen Burke could manage this position.
- PMT sees this position as more technical, and graduate student “thesis grooming” perhaps not necessary. PMT also questioned whether this new person could also handle website; however Justin inquired about this as this is his responsibility (Justin and Curtis will talk about future website management.)