

## Watershed Pilot Project – Data Framework for Critical Questions (3-15-2017)

These are adapted from MacDonald (2000):

<b>Catalogue</b>	<ol style="list-style-type: none"> <li>1. <b>Identify available information on resources of concern and their location</b> Use the Resources of Concern Frameworks develop by each of the Review Team agencies and merged by the PPIIT as the framework for compiling the information available in THPs, NTMPs, and other sources. By explicitly identifying the location of the resources of concern (e.g., spawning habitat in low gradient reaches) we can keep the assessment as specific as possible.</li> <li>2. <b>Identify the time scales of available assessments for individual and cumulative impacts to resources of concern</b>– We are dependent upon the time scales assessed within THPs, NTMPs, etc., which may or may not fully take into consideration legacy land use or anticipated future land use activities/impacts.</li> <li>3. <b>Identify the spatial scale of available assessments for individual and cumulative impacts to resources of concern</b> – We are using the planning watershed scale for the Pilot Project, though there have been suggestions to start at a smaller scale for beta testing our approach. Finer-scale information will be provided by existing THPs, NMTPs, etc.. We also are asking whether the planning watershed scale may be too small for some resources or related process of concern. Ideally, the spatial scale of the assessments should be defined by the processes that control the resources of concern.</li> <li>4. <b>What past, present, and expected future activities in the area of concern are identified in the THPs, NTMPs, and other sources</b>– THPs and NTMPs should provide us insight into this. This includes land use and restoration activities.</li> </ol>
<b>Evaluate</b>	<ol style="list-style-type: none"> <li>5. <b>Identify key cause-and-effect mechanisms</b> – Focus on the most important key cause-and-effect processes rather than concentrating on the infinitely large universe of indirect effects and interactions. Use consideration of the level of risk to resources of concern to help provide focus. This is where the technical specialists will use their experience and professional judgement to strategically mine THPs, NTMPs, and existing datasets.</li> <li>6. <b>Identify the range of variability and relative condition for the resource(s) of concern</b> – Depending upon the controlling processes and environmental context, range of variability can be large (see process drivers in the attached schematic). THPs and NTMPs can be searched for data associated with “watershed conditions and/or processes”. This is where we can start identifying data for the following attributes:             <ol style="list-style-type: none"> <li>a. Is it technically sound (consistent with science and/or first principles)?</li> <li>b. Is it quantitative or qualitative (e.g., narrative; photos)?                 <ol style="list-style-type: none"> <li>i. Accuracy</li> <li>ii. Precision</li> </ol> </li> <li>c. Is the data spatially explicit or lumped?                 <ol style="list-style-type: none"> <li>i. Is spatial coverage sufficient?</li> </ol> </li> <li>d. Is there temporal resolution to the data?                 <ol style="list-style-type: none"> <li>i. Visible trends based on repeat sampling</li> </ol> </li> </ol> </li> <li>7. <b>Identify the relative impact of past, present, and expected future activities as described in THPs, NTMPs, etc.</b>– This combines steps 4 and 5 together. For land use this should be found in Section III of the THP. Alternatively, we can combine land use history with site characteristics to drive spatially explicit models of runoff, erosion, and sediment transport (e.g., see NETMAP). This step applies to land use and restoration. But new analysis is something we are trying to avoid doing a lot of new analysis.</li> <li>8. <b>Evaluate the outcomes predicted in step 7 through the comparing them to existing monitoring data</b> – See if the impact analysis in THPs, NTMPs, etc. is consistent with existing monitoring data that may not have been used (e.g., because it was not available at the time) in the THP, NTMP, or other assessment. Monitoring data may be within THPs or be publicly available elsewhere.</li> <li>9. <b>Identify possibilities for modification, mitigation, planning, and restoration</b> – The previous steps will help identify which past or present activities are having the greatest environmental impact or benefit, and which locations are the most sensitive. As such, it can identify which activities need to be further modified, or which restoration activities have the highest benefit.</li> <li>10. <b>Identify key data gaps and monitoring needs</b> – If critical data gaps and monitoring needs are identified, this should trigger requirements or commitments to address these gaps/needs in the future.</li> </ol>

**Items deleted in whole from Drew's original document:**

- 4. Identify the relative magnitude of risk to each resource, and adjust the scope of the assessment according to the likely cost of a wrong answer** - This will force us to prioritize more rigorous assessment for resources of higher value that have a higher probability of adverse impacts.
- 5. Select appropriate level of effort for the assessment** – The previous four steps will help us define the appropriate level of effort. Once we consider financial and staffing constraints, along with stakeholder input, we should be able to narrow the focus further.

*It could be interesting to explore the above as evaluative measures for past assessments in THPs, etc., but I think that starts to expand the scope of the Pilot Project and add too much to our workload.*