BioRA DSS Workshop

Overall results for the calibration scenarios

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DEFINITION OF INTEGRITY

Definition of ecological integrity

The ecological integrity of a river system is defined as its ability to support and maintain a balanced, integrated composition of physico-chemical and habitat characteristics, and biotic components on a temporal and spatial scale that are comparable to the natural characteristics of ecosystems of the region.
### Integrity categories

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Unmodified, natural</td>
</tr>
<tr>
<td>B</td>
<td>Largely natural</td>
</tr>
<tr>
<td>C</td>
<td>Moderately modified</td>
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<tr>
<td>D</td>
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</tr>
<tr>
<td>E</td>
<td>Completely modified</td>
</tr>
</tbody>
</table>

- **A** Unmodified, natural: As close as possible to natural conditions.
- **B** Largely natural: Modified from the original natural condition but not sufficiently to have produced measurable change in the nature and functioning of the ecosystem/community.
- **C** Moderately modified: Changed from the original condition sufficiently to have measurably altered the nature and functioning of the ecosystem/community, although the difference may not be obvious to a casual observer.
- **D** Largely modified: Sufficiently altered from the original natural condition for obvious impacts on the nature and functioning of the ecosystem/community to have occurred.
- **E** Completely modified: Important aspects of the original nature and functioning of the ecosystem/community are no longer present. The area is heavily negatively impacted by human interventions.

**INPUTS TO DSS**
Calculating integrity

For a scenario:

- Each indicator’s final score (end of period)
- + or – added for a move towards or away from natural
- Weighted average = Integrity

- Can be calculated per discipline or for all disciplines (overall integrity)
**DSS: Integrity sub-section**

- Weights for each indicator for calculating discipline level integrity;
- Weights for each discipline for calculating site level integrity;
- Ecological status of each discipline at each site; and
- Abundance vs. integrity relationships for each indicator at each site.

**Discipline integrity weights**

[Table showing discipline integrity weights]
Site integrity weights

Ecological Status (from S7T assessments)
Abundance/Integrity relationships

EXAMPLES OF RESULTS
Overall Integrity predictions for FA1

Overall Integrity predictions for FA5
Comparison FA1 and FA5

CS 1 – low wet, high dry:
• no change at FA1
• Improvement at FA3

CS 2, 3, 4:
• similar outcomes

CS 5 – barrier FA1/FA2:
• large change at FA1
• no change at FA3
• CS4 and 10 – sediment loss. Sand dominated habitat.

Spatial depiction for a scenario
INTERROGATING RESULTS

What is driving integrity?

For a scenario:
• Check which discipline and indicators used
• Check weights
• Check overall scores
• Identify which indicator(s) are driving integrity score
• Allie to go through examples
Thank You