Defining Critical Areas

Hogan Creek Watershed Project
Upper Anderson River Watershed Project
Tanners Creek Watershed Project

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White River RC&D
Why not the whole watershed?

It’s all about getting our biggest bang for the buck!
**Critical Area** - Areas in the watershed where the sources are causing the greatest damage and treatment measures will have the *greatest* effect.

No Access to Waterbody

Direct Access to Waterbody
There are several ways to determine critical areas within your watershed.

Using a dartboard, however, is not one of those ways.
Priority Watersheds

Prioritizing watersheds is based on ranking each of your subwatersheds and identifying which subwatersheds have the most environmental concerns.
Priority Watershed

When we prioritized our subwatersheds, we took into account several different items including but not limited to:

a. Landuse
b. Windshield surveys
c. Water quality data
d. Aerial Photography
e. Soil characteristics
f. NPDES information
g. Recreational areas
h. Etc.
Once you gather and analyze your data, you can start making decisions and prioritizing your subwatersheds.

In the Hogan Creek example, we ranked each subwatershed as High Priority, Medium Priority, or Low Priority.

This means that subwatersheds ranked high would be the target of our cost-share dollars.

Once the high priority watersheds have been addressed, we can move to medium and so on.
### Priority Watersheds

#### Ranking Example for E. Coli from cattle with access to creek:

<table>
<thead>
<tr>
<th>Subwatershed A:</th>
<th>Subwatershed B:</th>
<th>Subwatershed C:</th>
<th>Subwatershed D:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 90% pasture</td>
<td>• 50% pasture</td>
<td>• 35% pasture</td>
<td>• 40% pasture</td>
</tr>
<tr>
<td>• 10 sites identified with access to waterbodies</td>
<td>• 20 sites identified with access to waterbodies</td>
<td>• 3 sites identified with access to waterbodies</td>
<td>• 33 sites identified with access to waterbodies</td>
</tr>
<tr>
<td>• E.Coli tests revealed occasionally mid-high levels – averaging between 235 and 600 colonies/100 mL</td>
<td>• E.Coli tests revealed high levels – averaging 1,500 colonies/100 mL</td>
<td>• E.Coli tests revealed very low levels – averaging 100 colonies/100 mL</td>
<td>• E.Coli tests revealed high levels – averaging 600 colonies/100 mL</td>
</tr>
</tbody>
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## Priority Watersheds

### Ranking Example for Streambank Fencing:

<table>
<thead>
<tr>
<th></th>
<th>Pasture</th>
<th>Access to Creek</th>
<th>E.Coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subwatershed A</td>
<td>90</td>
<td>10</td>
<td>235-600</td>
</tr>
<tr>
<td>Subwatershed B</td>
<td>50</td>
<td>20</td>
<td>1,500</td>
</tr>
<tr>
<td>Subwatershed C</td>
<td>35</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Subwatershed D</td>
<td>40</td>
<td>33</td>
<td>600</td>
</tr>
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<table>
<thead>
<tr>
<th></th>
<th>Pasture</th>
<th>Access to Creek</th>
<th>E.Coli</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subwatershed A</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Subwatershed B</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Subwatershed C</td>
<td>1</td>
<td>1</td>
<td>1</td>
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Priority Watersheds

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The group decided:
- any subwatershed with a ranking of less than 4 would be a low priority
- any subwatershed with a ranking between 4-9 would be a medium priority
- any subwatershed with a ranking higher than 9 would be a high priority
Priority Watersheds

Selecting “priority watersheds” is not a bad way to identify critical areas, but it’s not necessarily the best either.

**CONCERNS:**

1. Because this is a voluntary program, landowners within the priority subwatershed may not want to address their environmental issues.

2. A subwatershed may not be listed as a priority in the management plan, but land use may change over time, making it a priority

3. Let’s be honest, you aren’t going to see EVERYTHING in a windshield survey and data collection.
Source Identification

Source Identification is based on identifying critical areas by pollutant source.
Source Identification

When identifying critical areas using source identification, you aren’t singling out a subwatershed AND you aren’t identifying the whole watershed as a priority area.

In the Upper Anderson River example, we analyzed our data and determined which areas of the watershed were poorly buffered.

In this case, the critical area could be identified as: Any stream that has less than a 50 foot riparian buffer.

The only areas eligible for cost-share dollars would be areas with less than 50 feet of riparian buffer.
Identifying critical areas based on Source Identification could be one of the best ways to put best management practices in your watershed. But...

**CONCERNS:**

1. An area with less than 50 feet of buffer may not necessarily be a problem if there isn’t another issue.

2. A poorly managed buffer that is over 50 feet may have more environmental problems than a well-managed buffer under 50 feet.
Priority Ranking

Prioritizing ranking is based on ranking the landowners property and assigning points to environmental concerns that will be addressed.
Priority Ranking

This is a similar approach in which the Natural Resources Conservation Service uses to determine who receives funding.

In the Tanners Creek example, there is a list of 16 environmental concerns developed by the technical committee.

In this case, the technician sits down with the landowner and goes over the list of concerns and gives the landowner points for each concern he or she plans on addressing.

Landowners that receive a score of 50 or higher are considered critical.
Priority Ranking

Priority ranking is an excellent way to determine critical areas because most often you are fixing more than one concern. But…

CONCERNS:

1. If you give points because the landowner has an environmental issue on their land – they must make a commitment to fix that issue.

2. This is not one of the ways that IDEM has approved defining critical areas.

3. May not be a great stand-alone method but may marry nicely with another method.
 QUESTIONS?

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