Stream and Wetland Buffers: Standards, Sizes, and Policies

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Outline

• What is the range of current practice in defining buffers by local governments?

• Is there an ideal size for buffers?

• What are the considerations for developing buffer ordinances?
What is covered in a Buffer Ordinance (four approaches)?

• Approach 1: all wetlands and waters, broadly defined.
  – or “waters of the state”

• Approach 2: Specific wetland types or classes
  – Ex. tidal wetlands,
  – Ex. wetlands over half an acre (Chipley, FL)
  – Ex. wetlands over one-quarter acre (Lake County, IL)
What is covered in a Buffer Ordinance (four approaches)?

• Approach 3: stream and river corridors and floodways (riparian corridors)
  – Including wetlands if they are found within or adjacent to those uses (Summit County, OH)
• Approach 4: For specifically identified and mapped wetlands/riparian areas
  – Rather than relying on definitions
  – Applies to all development within 50 feet of a defined “wetlands protection district” (Pickens County, GA,
Overlapping buffers linking adjacent wetlands

Stream buffer expanded to include riparian wetland.
Sizes of Buffers

• Buffer size depends on:
  – The functions of the resource
  – The relative sensitivity of the resource
  – Characteristics of the buffer
  – Intensity of adjacent land use
  – Watershed characteristics
Other considerations

- Flow pattern
- Vegetation type
- Percent slope
- Soil type
- Surrounding land use
- Pollutant type and dose
- Precipitation
The case for wider buffers

• Sediment and nutrient removal in first 15-30 feet, but 30-100 feet will remove pollutants more consistently.

• Wildlife
Approaches to Setting Buffer Sizes

• Fixed buffer distance for all resources
  – i.e. 75 feet from a wetland

• Varies by type of resource
  – i.e. 75 feet from wetlands, 50 feet from streams

• Varies by quality
  – i.e. 75 feet from least vulnerable wetland, 100 feet from most vulnerable wetlands.

• Varies by Characteristic
  – i.e. 75 feet on steep land, 50 feet on flat land

• Performance standards:
  – Decided by the zoning administrator
Variation in Buffer sizes

• 2008 survey of 50 ordinances:
  – 15 foot buffer to 350 foot buffer
Five Buffer Regulation Approaches

• Fixed nondisturbance buffer
• Nondisturbance buffer plus additional setback
• Regulated buffer area with minimum nondisturbance area
• Matrix based on listed factors
• Case by case determinations
<table>
<thead>
<tr>
<th>Wetland Category</th>
<th>Standard Buffer Width (ft)</th>
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</thead>
</table>
| Category I:  
  Natural Heritage or bog wetlands   | 215                       |
|  Habitat score 29-36                 | 200                       |
|  Habitat score 20-28                 | 150                       |
|  Not meeting above criteria          | 125                       |
| Category II:  
  Habitat score 29-36                | 150                       |
|  Habitat score 20-28                 | 100                       |
|  Not meeting above criteria          | 75                        |
| Category III:  
  Habitat score 20-28                | 75                        |
<p>|  Not meeting above criteria          | 50                        |
| Category IV:                          | 50                        |</p>
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<thead>
<tr>
<th>Land Use Intensity</th>
<th>Wetland Outlet</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td>Low</td>
<td>Yes</td>
<td>40 ft</td>
<td>35 ft</td>
<td>30 ft</td>
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<td>75 ft</td>
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<td>40 ft</td>
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<tr>
<td>Moderate</td>
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<td>90 ft</td>
<td>65 ft</td>
<td>55 ft</td>
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<td>90 ft</td>
<td>75 ft</td>
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<tr>
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<td>90 ft</td>
<td>65 ft</td>
<td>40 ft</td>
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<td>No</td>
<td>175 ft</td>
<td>150 ft</td>
<td>125 ft</td>
<td>90 ft</td>
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<td>50 or higher</td>
<td>42-48</td>
<td>39-41</td>
<td>32-38</td>
<td>Less than 32</td>
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<tr>
<td>Low</td>
<td>150 ft</td>
<td>125 ft</td>
<td>100 ft</td>
<td>75 ft</td>
<td>Use Water Quality &amp; Slope Tables</td>
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<tr>
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<td>225 ft</td>
<td>175 ft</td>
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<td>200 ft</td>
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<td>Slope Gradient</td>
<td>Additional Buffer Multiplier</td>
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<tr>
<td>5-14%</td>
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<td>&gt;40%</td>
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Option 1

- Base width: 100 ft.
  - Plus 2 ft. per 1% slope
- Extend to edge of floodplain
- Include adjacent wetlands
- Impervious surfaces do not count toward buffer width
- Slopes over 25% do not count toward the width
- Applies to all perennial and intermittent streams
Option 2

- Same as option 1, except:
  - Base width is 50 ft. plus 2 ft. per 1% slope
  - Entire floodplain not included in buffer
  - Ephemeral streams not included
Option 3

- Fixed buffer width of 100 ft.
- Only streams that appear on USGS 1:24,000 are included
Other Considerations

• Exempting agricultural operations
• Separate regulations for livestock operations
• How are slopes measured?
• Design/landscape standards
• Setbacks for hazardous uses
• Other allowable uses?
Management

• Banning resource practices and activities
• Roads, bridges, utilities
• Stormwater BMP manual
• Protective covenant
• Penalties for non-compliance
Conclusions

• Environmental Law Institute Handbook for Buffers

• EPA Model Buffer Codes:
  [http://water.epa.gov/polwaste/nps/buffers.cfm](http://water.epa.gov/polwaste/nps/buffers.cfm)

• University of Georgia comparison of buffer ordinances:
  [http://www.rivercenter.uga.edu/service/tools/buffers/buffer_lit_review.pdf](http://www.rivercenter.uga.edu/service/tools/buffers/buffer_lit_review.pdf)