

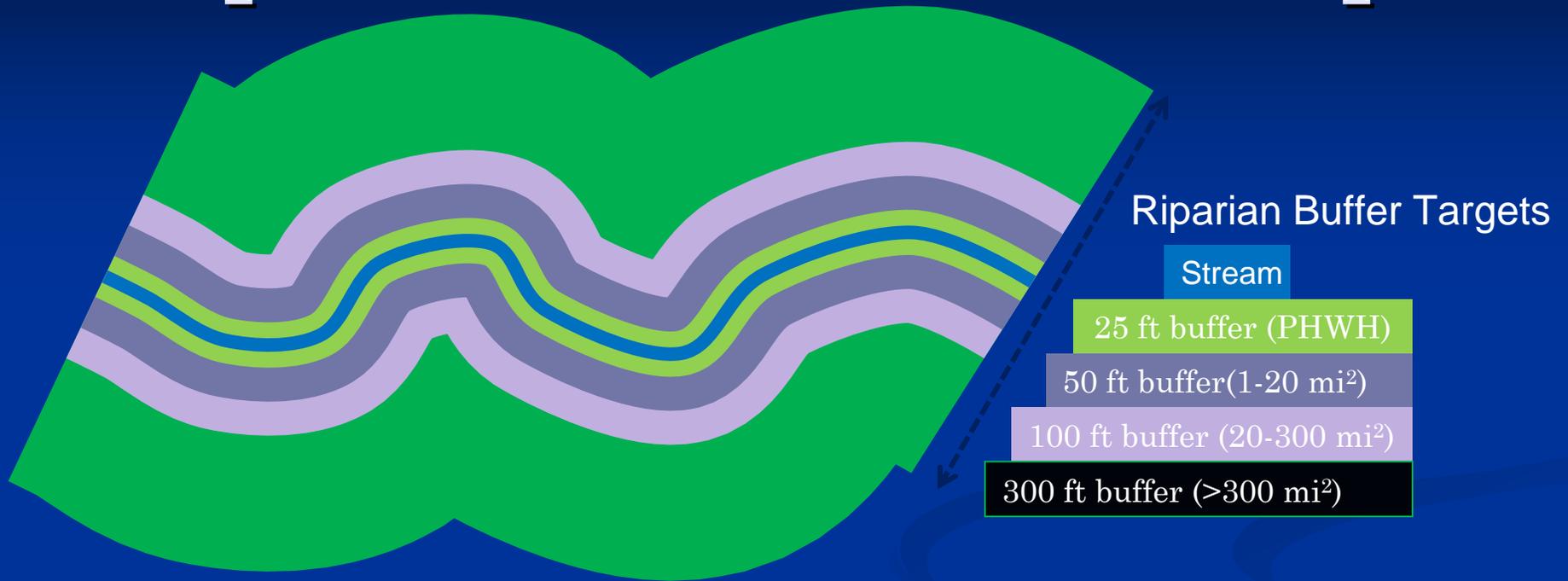


Stream Mitigation Work Group

Meeting # 5

November 6, 2007

Riparian Metric – concept



Stream Size	Minimum Buffer	Target Buffer Width (each bank)	Relative Credits/Debits (Scaling Factor)	Weighting Factor Range
<1.0 mi ² (DLW/LL)	15 ft	25 ft	0.125	0.075 - 0.125
≥1.0 – 20 mi ²	25 ft	50 ft	0.250	0.125 - 0.250
>20 – 300 mi ²	50 ft	100 ft	0.750	0.250 - 0.500
>300 mi ²	75 ft	300 ft	1.500	0.375 - 1.500

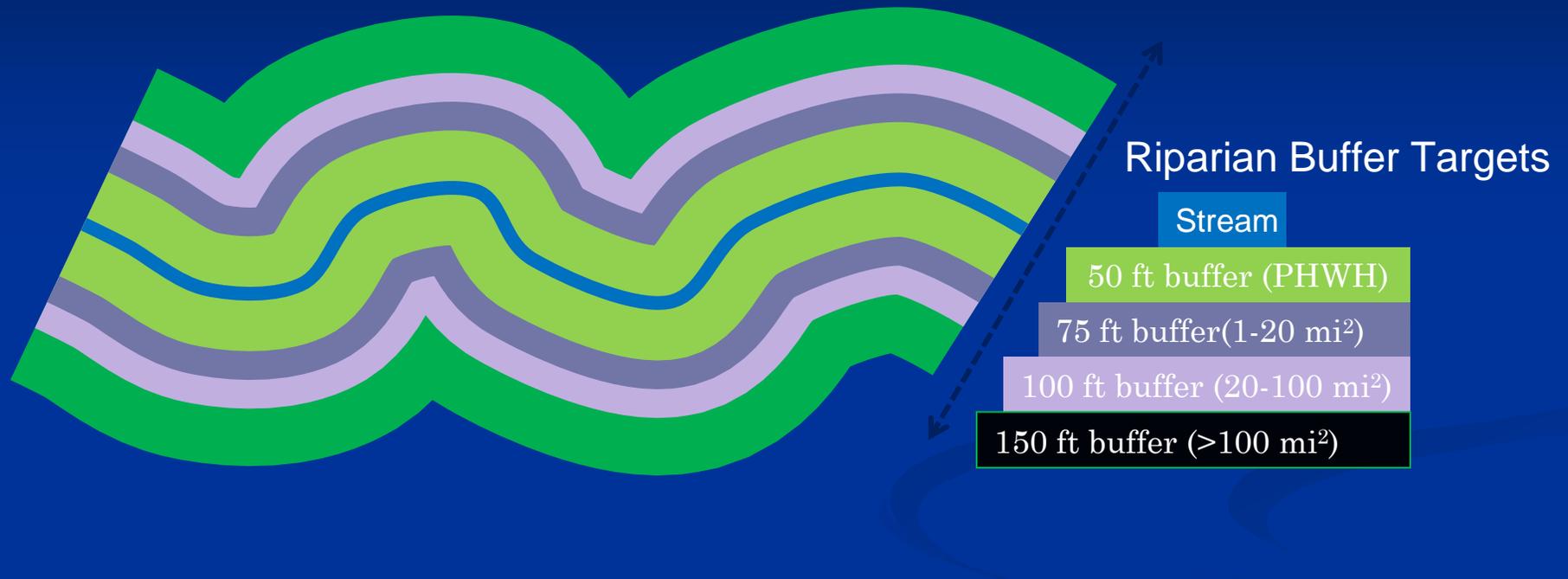
Riparian/Floodplain Metric

- Weighting Factor (WF) calculation
 - Scaling factor (SF) reflective of relative land areas of minimum riparian buffer along stream segment. Used to provide credit for additional preservation required.
 - Weighting factor adjusted to reflect the ratio of the actual buffer (B) along the stream segment to the target buffer width (B*)
 - Resulting equation: $WF = SF \times B/B^*$

Riparian – Previous Discussion

- 15 ft minimum for PHWH insufficient
 - Targets for PHWH also too narrow
- 300 mi² watershed grouping too large
 - use 100 mi²
- Riparian width targets for large (> 300 mi²) watersheds too wide
- One-side riparian buffers should be allowed

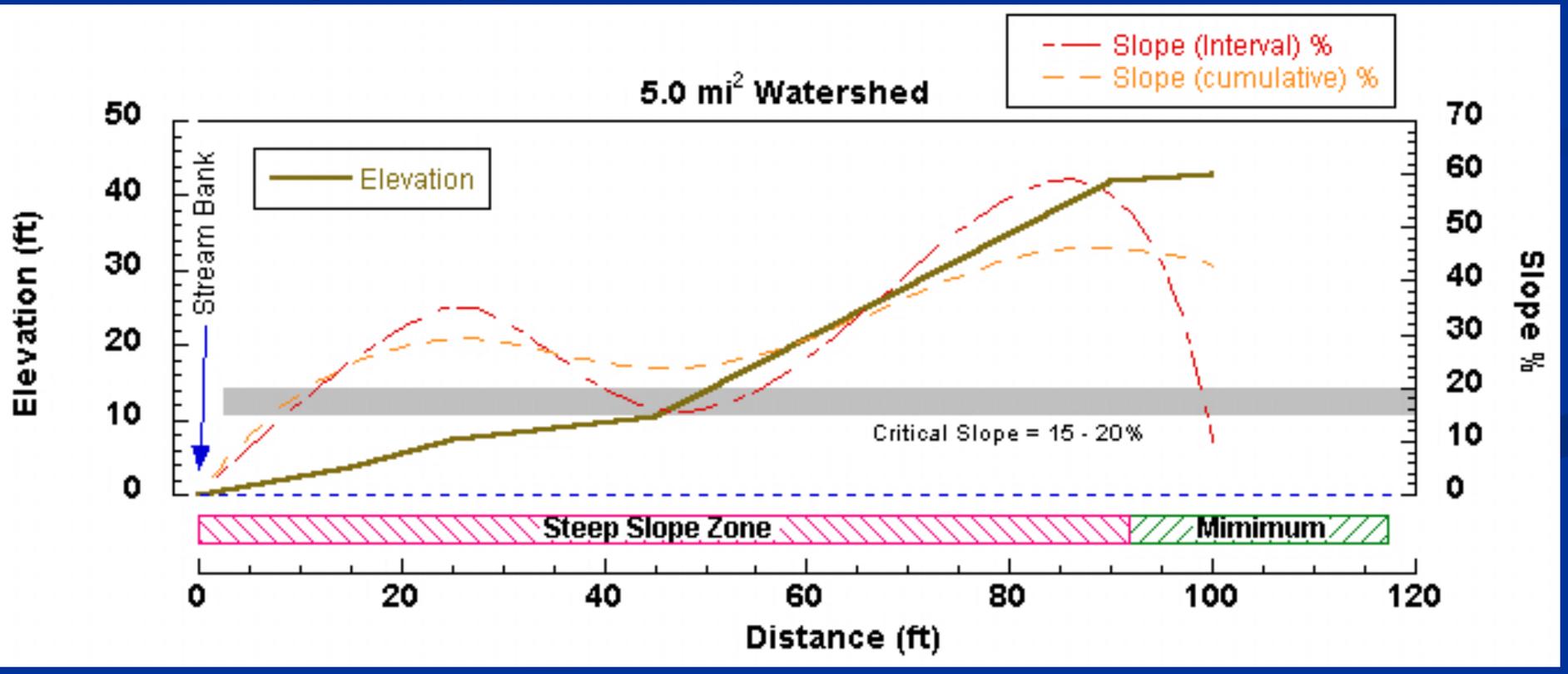
Riparian Metric – Revisited



Stream Size	Minimum Buffer	Target Buffer Width (each bank)	Relative Credits/Debits (Scaling Factor)	Weighting Factor Range
<1.0 mi ² (PHWH)	25 ft	50 ft	0.50	0.25 - 0.50
≥1.0 – 20 mi ²	50 ft	75 ft	0.75	0.25 - 0.75
>20 – 100 mi ²	75 ft	100 ft	1.00	0.75 – 1.00
>100 mi ²	75 ft	150 ft	1.50	1.00 - 1.50

Modifier – Steep Slopes

- Preferred Option: Zone does not count toward minimum buffer.
 - Minimum buffer required at top of slope
 - Credited at 100% of Scaling Factor where
Steep Slope Zone + Minimum \geq Target Buffer.
 - Advantage: fully protects slope.





Riparian Discussion

Supplemental Water Quality

- Section 5.2.13.
 - (note error in version 4.0 Form B)
- Provides credit for supplemental water quality projects carried out concurrent with mitigation implementation
 - Goal is to capitalize on potential efficiencies of mobilized resources
- Can be used to provide credit for other beneficial activities on case-by-case basis.
 - Example: fishing or canoeing access on recreationally important streams

Supplemental Water Quality

- Excellent Activities (WF = 0.4)
 - Off-channel detention (or groundwater recharge) where storm flows documented to cause water quality problems
 - Nutrient reduction and/or sediment control through stream buffering
 - Watershed water quality improvement actions in ONW, OSRW, SHQW, or endangered species habitat
 - Livestock fencing (75' with crossings, 50' with no crossings)

Supplemental Water Quality

- Good Activities (WF = 0.2)
 - Non-point pollution reduction through methods other than buffering
 - Watershed water quality improvement actions in GHQW, or in Federal Species of Management Concern or declining aquatic species habitat
 - Livestock fencing (50' with crossings, 25' with no crossings)

Supplemental Water Quality

- Moderate Activities ($WF = 0.1$)
 - Livestock fencing 25' on both banks(crossings OK) or 75' on one side (no crossings)
 - Livestock fencing 75' on one side (crossings OK) or 50'on one side (no crossings)



Supplemental Water Quality Discussion

Impact Categories

Table 4. Impact weighting factor categorization table (see Section 5.2.6).

Minimal Impact WF=0.2	Moderate Impact WF=1.0	High Impact WF=1.5	Severe Impact WF=2.0
Road Crossing: Enhanced Culvert <150 feet	Road Crossing: Enhanced Culvert 150-300 feet	Road Crossing: Enhanced Culvert >300 feet (only applicable if fish passage possible)	---
---	Road Crossing: Standard Culvert <50 feet	Road Crossing: Standard Culvert 50-150 feet	Road Crossing: Standard Culvert >150 feet
---	Fill/Relocation <50 feet	Fill/Relocation 50-150 feet	Fill/Relocation >150 feet
Impoundment Temporary: <150 feet, <6 months duration	Impoundment Temporary: <150 feet, 6-12 months duration or >150 feet, < 6 month duration	Impoundment Permanent: Impounded areas <300 feet and fish passage possible	Impoundment Permanent: Impounded areas ≥300 feet or fish passage impossible
---	Morphological Alteration <150 feet	Morphological Alteration 150-300 feet	Morphological Alteration >300 feet
Armor <50 feet	Armor 50-150 feet	Armor 150-300 feet	Armor >300 feet
Shading/Clearing <300 feet	Shading/Clearing 300-600 feet	Shading/Clearing >600 feet	---
Utility Crossing <150 feet	Utility Crossing 150-300 feet	Utility Crossing >300 feet or Multiple Crossings >300 feet	---
Other Temporary Impacts <300 feet, <6 months duration	Other Temporary Impacts <300 feet, 6-12 months duration or >300 feet, < 6 month duration	Other Temporary Impacts > 300 feet, 6-12 months duration	

Monitoring and Contingency Plans

Section 7.0



Monitoring Requirements

- Monitoring plans necessary in order to determine success of mitigation
- **Success criteria** should be well defined
- Monitoring plans highly **site-specific**
- **Accepted methodologies** should be used
- Monitoring reports should relate to the **data quality objectives** outlined in the monitoring plan:
 - Must document whether the success criteria are met within time frames established in the mitigation plan
 - Should follow the format outlined in the monitoring plan

Contingency Plans

- Required in Corps Regulatory Guidance Letter (2002).
 - Includes responses to unanticipated changes
 - Provides a mechanism for requesting changes to performance standards (success criteria) caused by unforeseen events
 - Identifies potential situations that may arise during implementation that are above and beyond the control of the applicant (protection from unnecessary enforcement)
- Ohio EPA may add condition within the 401 Water Quality Certification to expand contingencies on a case-by-case basis

Are we there yet?

