Introduction: This buffer strategy applies to all natural channel types, including streams modified to improve drainage. It is not intended to plan buffers on constructed ditches. This methodology is intended to provide planners with buffer alternatives to include in conservation plans. The strategy assumes the majority of stream reaches on working lands have been modified (moved, straightened, dredged) and continue to be managed by the agricultural community to facilitate active farming.

Utilize the Ecological Function Table to focus buffer selection and composition to solve the resource concerns occurring on the individual planning unit.

In many cases, multiple resource concerns will be present on the planning unit. Planners should include appropriately sized buffers necessary to treat each of the resource concerns in the RMS alternative presented to the landowner. There is no requirement for the landowner to select all practices in the RMS alternative for implementation.

Conservation planners will encourage adoption of buffers wider than the minimum. Financial assistance may be provided up to 180 feet on each side of the channel for most reaches. When financial assistance program rules allow, funding for buffers exceeding 180 feet may be approved by Area and/or State specialists where the objective is to restore floodplain habitat and function.

EXAMPLE: A Western WA stream reach with width less than 10 ft. bank full where livestock have year round access to stream			
Step 1: Identify Resource Concerns **Inventory Tools Used:** WDOE 303d & SVAP2 & Bio TN-14 (FY16 version)		**Resource Concern**	
Planning unit contains a stream reach that is labeled with a Bacteria parameter on the WDOE 303d list		WATER QUALITY DEGRADATION: Excess pathogens and chemicals from manure, bio solids or compost applications	
SVAP2 shows the following elements with a score below 7:	Element 9-Manure or Human Waste Presence Element 4-Riparian Area Quantity Element 5-Riparian Area Quality Element 12- Fish Habitat Complexity	INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic) INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic) INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic) INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic)	
Bio TN-14 (FY16 version) Riparian Area Score = 0.5		INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic) INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Terrestrial)	
Step 2: Select Desired Buffer Function(s)	**Step 3: Minimum Buffer Width(each side)**	**Step 4: Select Conservation Practice**	**Step 5: Determine plant community & species selection**
Trap bacteria and other pathogens in surface runoff	35 ft. to treat Water Quality Resource Concern and 50 ft. to treat Habitat Degradation	422 and 382 to treat WQ Res Concern; 422, 393 and 382 to treat Habitat Degradation	Herbaceous vegetation with fibrous root systems OR Shrubs with filter strip on landward edge
Overhanging vegetation	50 ft. to treat Habitat Degradation (Aquatic)	391 (50 ft. wide) and 382 to treat Habitat Degradation	Combination of deciduous trees and shrubs with conifers
Provide litter (leaves, twigs, branches, organic matter and roots) input to stream	50 ft. to treat Habitat Degradation (Aquatic)	391 (50 ft. wide) and 382 to treat Habitat Degradation	Combination of deciduous trees and shrubs with conifers
Root stability supporting undercut banks	50 ft. to treat Habitat Degradation (Aquatic)	391 (50 ft. wide) and 382 to treat Habitat Degradation	Combination of deciduous trees and shrubs with conifers
Provide source of large woody debris	100 ft. to treat Habitat Degradation (Aquatic)	391 (100 ft. wide) and 382 to treat Habitat Degradation	Combination of conifers and deciduous tree species
Crop pollinator habitat	35 ft to treat Habitat Degradation (Terrestrial)	422 (35 ft wide) or 327	Combination of conifers and deciduous tree species

FY 16 Riparian Buffer Conservation Strategy for Working Lands

Introduction: This buffer strategy applies to all natural channel types, including streams modified to improve drainage. This methodology is intended to provide planners with buffer alternatives to include in conservation plans. It is not intended for planning buffers on constructed ditches. The strategy assumes the majority of stream reaches on working lands have been modified (moved, straightened, dredged) and continue to be managed by the agricultural community to facilitate active farming.

STEP 1: Identify Resource Concern — Inventory Tool Options: WA Biology TN-14, SVAP2, WA Water Quality TN-1, 303 (d) list								STEP 2: Select Desired Buffer Function(s)	STEP 3: Determine Minimum Required — Minimum Buffer width (each side):				STEP 4: Select Conservation Practice Alternatives	STEP 5: Determine plant community & species selection[1]
Resource Concern								**Ecological Function**	35 ft.	50 ft.	>100 ft. (Western WA)	>75 ft. (Eastern WA)	**Options**	**Suggested plant materials***
SOIL BE	WQ Nut	WQ Pest	WQ Path	WQ Sed	WQ Temp	HAB Aq	HAB Up							
					X	X		Shade stream 60% to maintain water temperature and increase dissolved oxygen	(water drop)	(fish)			390, 391, 422, 612	Deciduous trees, conifers, shrubs preferred; herbaceous vegetation in low precipitation areas or saturated soils
X				X		X		Reduce bank erosion	(soil) (water drop)	(fish)			390, 391, 422, 612	Woody species with deeper root systems that resprout from roots or from broken branches
				X				Stabilize surface soil	(water drop)				390, 386, 393, 327, 342	Herbaceous plants with fibrous root systems
				X		X		Trap sediment in surface runoff	(water drop)	(fish)			386, 393, 327, 342	Stiff-stemmed grasses; high stem and debris density, tolerant of sediment build up
	X					X		Trap nutrients in surface runoff	(water drop)	(fish)			386, 393, 327, 342, 422, 601	Herbaceous plants with fibrous root systems
		X				X		Trap pesticides in surface runoff	(water drop)	(fish)			386, 393, 327, 342, 422, 601	Herbaceous plants with fibrous root systems
			X			X		Trap bacteria and other pathogens in surface runoff	(water drop)	(fish)			386, 393, 327	Herbaceous plants with fibrous; high stem and debris density
			X					Slow water runoff and enhance infiltration	(water drop)				327, 342, 386, 390, 391, 393, 422, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species
							X	Habitat and travel corridor for small terrestrial wildlife (invertebrates, reptiles & amphibians, bird species nesting in edge habitat)		*(bird)			327, 390, 391, 393, 422, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species
							X	Habitat and travel corridor for medium to large terrestrial wildlife (bird species nesting in interior, small mammals, large mammals, large predatory mammals)			(bird)	(bird)	327, 390, 391, 393, 422, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species
						X		Facilitate stream channel migration (meandering)			(fish)	(fish)	327, 391, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species

STEP 1: Identify Resource Concern Inventory Tool Options: WA Biology TN-14, SVAP2, WA Water Quality TN-1, 303(d) list								STEP 2: Select Desired Buffer Function(s)	STEP 3: Determine Minimum Required Minimum Buffer width (each side):				STEP 4: Select Conservation Practice Alternatives	STEP 5: Determine plant community & species selection[1]
Resource Concern								Ecological Function	35 ft.	50 ft.	>100 ft. (Western WA)	>75 ft. (Eastern WA)	Options	Suggested plant materials***
SOIL BE	WQ Nut	WQ Pest	WQ Path	WQ Sed	WQ Temp	HAB Aq	HAB Up							
						X		Provide source of large woody debris			🐟	🐟	391, 612	Combination of conifers and deciduous tree species
						X		Provide litter (leaves, twigs, branches, organic matter and roots) input to stream		🐟			422, 391, 612	Combination of deciduous trees and shrubs with conifers
						X		Overhanging vegetation		🐟			422, 391, 612	Deciduous trees & shrubs, conifer where growing condition supports
						X		Root stability supporting undercut banks		🐟			327, 422, 391, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species
							X	Crop pollinator habitat (nest sites, shade, water, nectar & pollen resources, protection from pesticides)	🐦				327, 386, 422, 391, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species. If possible, locate <1000' from crop
							X	Beneficial insect habitat (enhance habitat for predators of pests)	🐦				327, 386, 422, 391, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species. If possible, locate <1000' from crop
		X				X		Prevent chemical spray drift during ground application	🐦				422, 391, 612	Combination of deciduous trees, conifers, shrubs and herbaceous species
X						X		Flood water attenuation (Increased roughness from plants slows flood water and increase infiltration)			🐟 **	🐟 **	327,342, 390, 391	Combination of deciduous trees, conifers, shrubs and herbaceous species
						X		Creation of complex off-channel habitats (backwater, wetlands, side channels)			🐟	🐟	327, 391, 612+N48	Combination of deciduous trees, conifers, shrubs and herbaceous species

Resource Concerns Key:

SOIL BE — SOIL EROSION: Excessive bank erosion from streams, shorelines or water conveyance channels

WQ Nut — WATER QUALITY DEGREDATION: Excess nutrients in surface and groundwater

WQ Pest — WATER QUALITY DEGREDATION: Pesticides transported to surface and groundwater

WQ Path — WATER QUALITY DEGREDATION: Excess pathogens and chemicals from manure, bio solids or compost applications

WQ Sed — WATER QUALITY DEGREDATION: Excessive sediment in surface waters

WQ Temp — WATER QUALITY DEGREDATION: Elevated water temperature

HAB Aq — INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Aquatic)

HAB Up — INADEQUATE HABITAT FOR FISH AND WILDLIFE-Habitat degradation (Terrestrial)

*if planning unit contains both sides (100 ft wide corridor)

** Buffer width should correspond to floodplain width

[1] Species selection based on site specific growing conditions on planning unit which target desired Ecological Function(s)

*** Key Vegetation Considerations
1. Adapted to site conditions
2. Native where available and tolerate site conditions
3. Diverse plant materials
4. Perennial

WA NRCS October 30, 2015