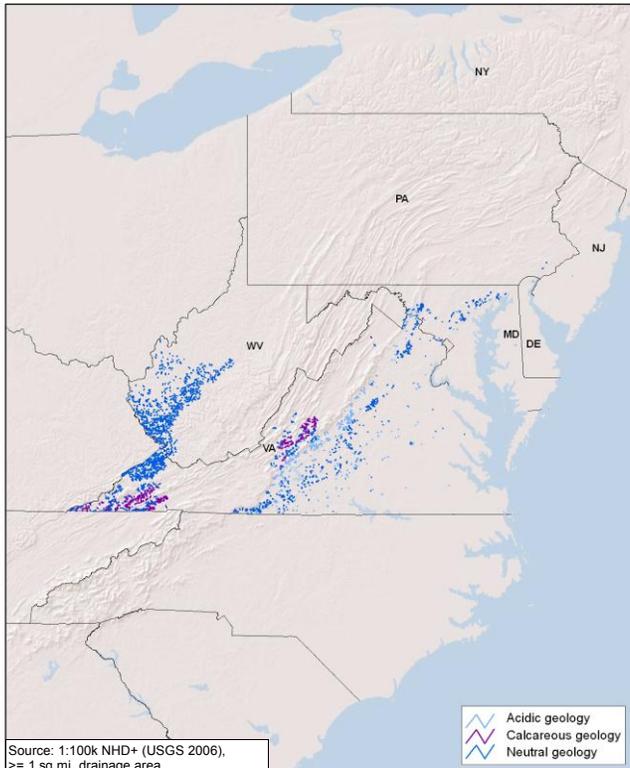


# High Gradient, Warm, Headwaters and Creeks

## Macrogroup: Headwaters and Creeks

This map is based on a model and has had little field-checking. Contact your State Natural Heritage Ecologist or State Fish Game Agency for more information about this habitat.



Minnehaha River, © VFX Photography

### Description:

Warm, fast-moving, headwaters and creeks of steeper slopes at low-elevation. These small streams of the Mid-Atlantic region occur on steep slopes at low to moderate elevations in watersheds less than 39 sq.mi in size. The warm fast-moving water has high water clarity and is well oxygenated. High-gradient instream habitats are dominated by riffles and cascade and step-pool systems. Channels are usually narrowly confined, high gradient, and surrounded by upland forests. Bed materials often consist of bedrock, boulders, cobbles, and coarse gravel. The predominant source of energy to the stream is terrestrial leaf litter or organic matter (these are allochthonous streams). Warm water temperatures in these streams means the fish community will contain a higher proportion of warmwater species relative to coolwater species. These systems are unlikely to support any resident coldwater species. Additional variation in the stream biological community is associated with acidic, calcareous, and neutral geologic settings where the pH of the water will limit the distribution of certain macroinvertebrates, plants, and other aquatic biota. The habitat can be further subdivided into 1) headwaters that drain watersheds less than 4 sq.mi, and have an average bankfull width of 16 feet or 2) Creeks that include larger streams with watersheds up to 39 sq.mi. and have an average bankfull width of 32 feet.

### Similar Habitat Types:

Headwaters and creeks may also occur on more moderate and gentle slopes and in settings with cooler water temperatures. Coastal examples of high gradient headwaters are rare. Warm high gradient streams typically flow into moderate or low gradient warm rivers in areas of less topography.

**State Distribution:** DE, MD, NJ, PA, VA, WV

**Total Habitat (mi):** 2,681

**% Conserved:** 6.0 Unit = Acres of 100m Riparian Buffer

State	State Habitat %	Miles of Habitat	Acres GAP 1 - 2	Acres GAP 3	Total Acres Unsecured
VA	65	1746	21	66	1307
WV	29	783	2	23	602
MD	1	147	10	6	101
PA	0	3	0	0	2
DE	0	2	0	1	1
NJ	0	0	0	0	0

### Places to Visit this Habitat:

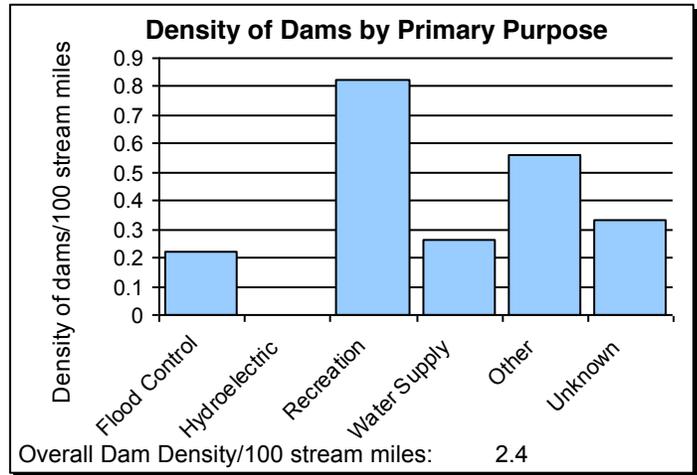
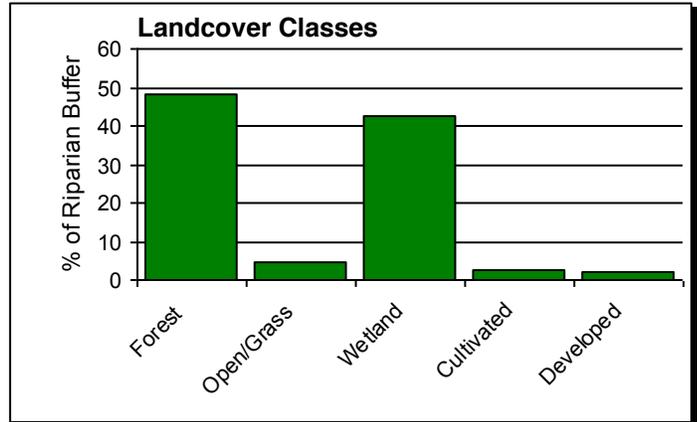
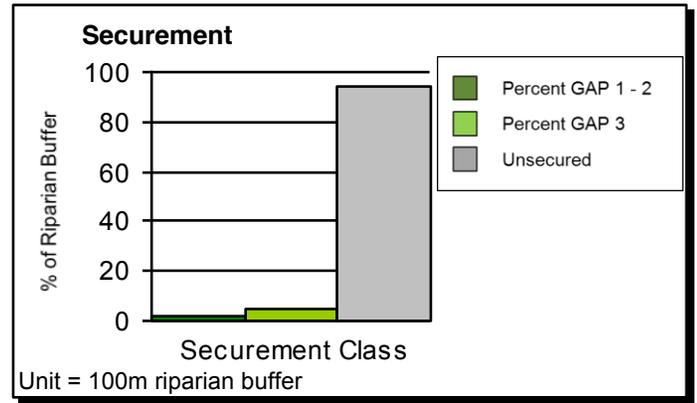
Miller Run, Patapsco Valley State Park | MD Rock Creek, Gambrill State Park | MD Donaldson Run, Donaldson Run Park | VA Left Fork Lynn Creek, East Lynn Lake Wildlife Management Area | WV Dancing Creek, Blue Ridge Parkway National Park | VA

**Associated Fish:**

Most Abundant: mountain redbelly dace, rosieside dace, eastern blacknose dace, creek chub, longnose dace, rock bass, banded sculpin, fantail darter, bluehead chub. Less Abundant: central stoneroller, smallmouth bass, fallfish, mottled sculpin, pumpkinseed, white sucker, green sunfish, redbreast sunfish, torrent sucker, tennessee shiner.

**Species of Concern (G1 - G4):**

Fishes: tennessee dace, bluebreast darter  
Crayfish, Mussels, and Snails: spiny scale crayfish, tennessee heelsplitter, kidneyshell, appalachian springsnail  
 See Appendix 2 for scientific names



**Crosswalk to State Names:**

Maryland: Piedmont Streams: high gradient variant, Highland Streams.



Rosieside dace, © Brian Gratwicke

