REVISION OF TENNESSEE'S LEVEL IV ECOREGIONS

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INTRODUCTION

Tennessee relies heavily on ecoregions to serve as a geographical framework for establishing regional water quality expectations in wadeable streams. An ecoregion is a relatively homogenous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology and other ecological relevant variables.

The "Ecoregions of the United States" map (Level III) developed in 1986 by James Omernik of EPA's Corvalis Laboratory delineated eight major ecoregions in Tennessee. Due to the high diversity and complexity of these ecoregions, it was necessary to refine and subdivide the ecoregions into smaller Level IV ecoregions (also called subregions) before reference conditions could be defined. Beginning in 1993, the Division arranged for James Omernik and Glenn Griffith to subregionalize and update the ecoregions (Arnwine et al, 2000).

Freshwater biologists, ecologists, foresters, chemists, geographers, engineers, educators and regulatory personnel from 27 state and federal agencies as well as universities and the private sector assisted in the selection, analysis and classification of data to determine the final ecoregion and subregion boundaries in Tennessee. During the delineation process, maps containing information on bedrock and surface geology, soil, hydrology, physiography, topography, precipitation, land use and vegetation were reviewed. The mapping was completed in 1998 and 25 Level IV ecoregions (ecological subregions) were identified in Tennessee as presented in Figure 1 (Griffith et al, 1997 and 1998).

At that time, none of the states bordering Tennessee had completed Level IV ecoregion delineation. In 2004, the last of the neighboring states, Mississippi, finished mapping Level IV ecoregions. This has resulted in some adjustments being made to the ecoregions in Tennessee as areas that were considered anomalies within a subregion have been elevated to subregion status once larger areas were found in surrounding states.

Six additional subregions have been added in ecoregions 66, 68, 69 and 73 resulting in 31 Level IV ecoregions in Tennessee (Table 1 and Figure 2). In addition, the names of four subregions have been revised (65e, 66d, 69d and 73a).

With the exception of 69e, the majority of new subregions are very small or the streams originate in a different subregion. Therefore, it may not be necessary or even possible to find reference streams. Until such time as reference sites can be established these subregions will be treated as part of their original subregion and/or bioregion for assessment purposes.

Table 1: Revisions to Tennessee Level IV Ecoregions, December 2007

Level IV	1998	2007
65a	Blackland Prairie	Blackland Prairie
65b	Flatwoods/Blackland Prairie Margins	Flatwoods/Blackland Prairie Margins
65e	Southeastern Plains and Hills	Northern Hilly Gulf Coastal Plain
65i	Fall Line Hills	Fall Line Hills
65j	Transition Hills	Transition Hills
66d	Southern Igneous Ridges and Mountains	Southern Crystalline Ridges and Mountains
66e	Southern Sedimentary Ridges	Southern Sedimentary Ridges
66f	Limestone Valleys and Coves	Limestone Valleys and Coves
66g	Southern Metasedimentary Mountains	Southern Metasedimentary Mountains
66i	NA	High Mountains
66j	NA	Broad Basins
66k	NA	Amphibolite Mountains
67f	Southern Limestone/Dolomite Valleys and Low Rolling Hills	Southern Limestone/Dolomite Valleys and Low Rolling Hills
67g	Southern Shale Valleys	Southern Shale Valleys
67h	Southern Sandstone Ridges	Southern Sandstone Ridges
67i	Southern Dissected Ridges and Knobs	Southern Dissected Ridges and Knobs
68a	Cumberland Plateau	Cumberland Plateau
68b	Sequatchie Valley	Sequatchie Valley
68c	Plateau Escarpment	Plateau Escarpment
68d	NA	Southern Table Plateaus
69d	Cumberland Mountains	Dissected Appalachian Plateau
69e	NA	Cumberland Mountain Thrust Block
71e	Western Pennyroyal Karst	Western Pennyroyal Karst
71f	Western Highland Rim	Western Highland Rim
71g	Eastern Highland Rim	Eastern Highland Rim
71h	Outer Nashville Basin	Outer Nashville Basin
71i	Inner Nashville Basin	Inner Nashville Basin
73a	Northern Mississippi Alluvial Plain	Northern Holocene Meander Belts
73b	NA	Northern Pleistocene Valley Trains
74a	Bluff Hills	Bluff Hills
74b	Loess Plains	Loess Plains

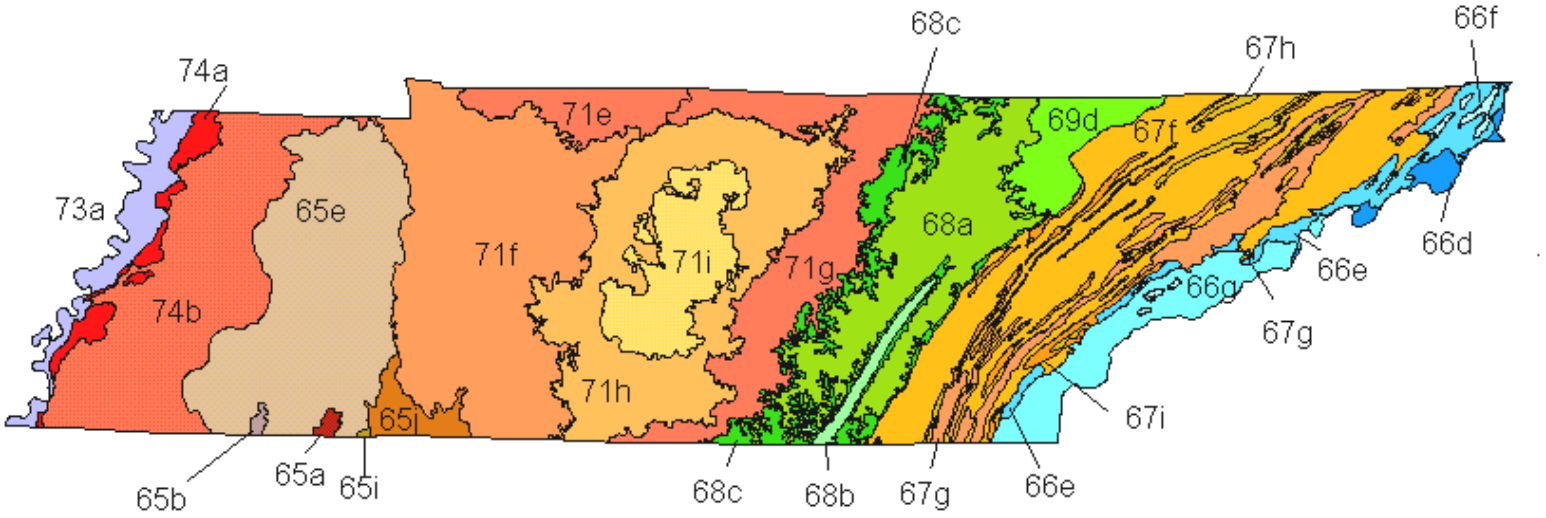


Figure 1: 1998 Level IV Ecoregions in Tennessee

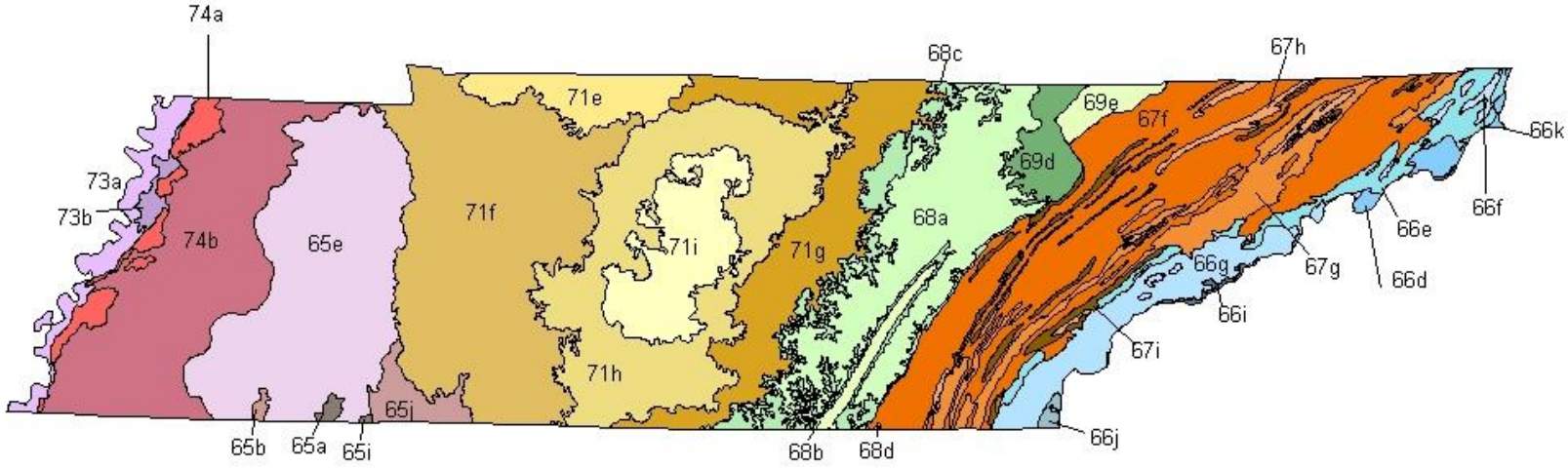


Figure 2: 2007 Level IV Ecoregions in Tennessee

CENTRAL APPALACHIANS (69)

The biggest change in Tennessee Level IV ecoregions is in the Cumberland Mountains (69d), which has been split into two subregions, the Dissected Appalachian Plateau (69d) in the western parts of the region located in Anderson, Campbell, Morgan and Scott counties and the Cumberland Mountain Thrust Block (69e) in parts of Campbell and Claiborne counties.

Ecoregion delineation work completed in Kentucky demonstrate both subregions are mostly forested, but the Cumberland Mountain Thrust Block is usually comprised of more mesophytic forests (Woods et al, 2002). Components of the bird, amphibian, small mammal and plant assemblages are distinct in the two subregions. The Cumberland Thrust Block generally has lower nutrient levels, cooler temperatures and less diverse fish populations. Large tracts of land in both regions in Tennessee are owned by lumber and coal companies.

There are 72 established Water Pollution Control (WPC) stations on 27 streams in Campbell and Claiborne counties that now fall in the Cumberland Mountain Thrust Block (Table 2). Two reference sites, No Business Branch (ECO69E01) and Stinking Creek (ECO69E04), are now in 69e.

The reference streams in both subregions were comparable in size and had similar land use (Table 3). The quality of the stream habitat in both regions is similar as indicated by mean habitat scores. Multivariate analysis of the macroinvertebrate metrics did not show a clear difference between the populations in the two subregions (Figure 3). However, an unpaired t-test indicated taxa richness, percent EPT, and the NCBI were statistically different in the spring between the two subregions (Table 4).

Although Kentucky records show fish populations are less diverse in ecoregion 69e, macroinvertebrate taxa richness was statistically higher in the Tennessee reference streams (Figure 4). EPT richness was similar in both regions although EPT abundance was higher in 69d. Based on NCBI scores, 69e supports a less tolerant benthic population in both seasons. Fall samples of clingers were the most similar between the two subregions although populations were different in the spring (Figure 5).

It should be noted that these analyses are based on very few samples (six to twelve for each data set) and the standard error of the sample means was sometimes high. Fewer samples were collected during the fall season since these streams sometimes go dry during low flow periods. Although they have similar drainage size, the two reference streams in 69e were less likely to be dry than those in 69d.

Table 2: Established WPC stream stations in ecoregion 69e, Cumberland Mountain Thrust Block.

STATION_ID	NAME	COUNTY	LATITUDE	LONGITUDE	HUC	DRAIN
BENNE005.2CL	Bennetts Fork	Claiborne	36.582100	-83.783700	05130101	
BENNE005.3CL	Bennetts Fork	Claiborne	36.582200	-83.785900	05130101	
BIG020.0CA	Big Creek	Campbell	36.388590	-84.125980	06010205	
BIG025.0CA	Big Creek	Campbell	36.436918	-84.080674	06010205	
BRUCE001.2CA	Bruce Creek	Campbell	36.324700	-84.224900	06010205	
CLEAR019.4CA	Clear Fork	Campbell	36.584700	-84.083300	05130101	69d
CLEAR028.9CA	Clear Fork	Campbell	36.526200	-83.993300	05130101	
CLEAR029.0CL	Clear Fork	Claiborne	36.550100	-83.951660	05130101	
CLEAR030.7CL	Clear Fork	Claiborne	36.564300	-83.934700	05130101	
CLEAR030.9CL	Clear Fork	Claiborne	36.564650	-83.931170	05130101	
CLEAR032.5CL	Clear Fork	Claiborne	36.572890	-83.910700	05130101	
CLEAR061.0CL	Clear Fork	Claiborne	36.571400	-83.911100	05130101	
COVE019.1CA	Cove Creek	Campbell	36.357690	-84.264860	06010205	
COVE021.4CA	Cove Creek	Campbell	36.388060	-84.278310	06010205	
DAVIS000.6CA	Davis Creek	Campbell	36.500600	-84.075500	05130101	
DAVIS024.1CL	Davis Creek	Claiborne	36.520900	-83.794700	06010206	
EBLUF000.9CA	Eagle Bluff Creek	Campbell	36.343600	-84.191700	06010205	
ECO69D01	No Business Branch	Campbell	36.552800	-84.068600	05130101	
ECO69D04	Stinking Creek	Campbell	36.425800	-84.261800	05130101	
GAP008.1CL	Gap Creek	Claiborne	36.590890	-83.674840	06010206	
GAP008.7CL	Gap Creek	Claiborne	36.578160	-83.669720	06010206	
HARRI000.2CL	Harris Branch	Claiborne	36.525000	-83.934970	05130101	
HICKO001.4CA	Hickory Creek	Campbell	36.550400	-84.044700	05130101	
HICKO001.5CA	Hickory Creek	Campbell	36.550500	-84.048900	05130101	
HICKO008.4CA	Hickory Creek	Campbell	36.503498	-84.088862	05130101	
HICKO010.1CA	Hickory Creek	Campbell	36.493600	-84.106400	05130101	
HURRI000.1CL	Hurricane Creek	Claiborne	36.553640	-83.856160	05130101	
HURRI000.4CL	Hurricane Creek	Claiborne	36.555700	-83.851200	05130101	
LAURE000.11CA	Laurel Branch	Campbell	36.378050	-84.175270	06010205	
LAURE000.1CA	Laurel Fork	Campbell	36.543300	-84.080800	05130101	
LOUSE000.2CA	Louise Creek	Campbell	36.468200	-84.146900	05130101	
OLLIS000.1CA	Ollis Creek	Campbell	36.394428	-84.129214	06010205	
OLLIS000.78CA	Ollis Creek	Campbell	36.389160	-84.139160	06010205	
OLLIS000.97CA	Ollis Creek	Campbell	36.388880	-84.139440	06010205	
OLLIS001.78CA	Ollis Creek	Campbell	36.388610	-84.140000	06010205	
OLLIS003.37CA	Ollis Creek	Campbell	36.370270	-84.173050	06010205	
OLLIS003.75CA	Ollis Creek	Campbell	36.370550	-84.173330	06010205	
OLLIS004.14CA	Ollis Creek	Campbell	36.369440	-84.184160	06010205	
OLLIS004.15CA	Ollis Creek	Campbell	36.368880	-84.184440	06010205	
OTOWN008.9CL	Old Town Creek	Claiborne	36.542490	-83.767890	06010206	
PROOS000.1CL	Pigeon Roost Branch	Claiborne	36.553910	-83.856820	05130101	
PROOS000.2CL	Pigeon Roost Branch	Claiborne	36.555200	-83.856500	05130101	
ROCK000.4CA	Rock Creek	Campbell	36.477776	-84.110389	05130101	
ROCK000.9CL	Rock Creek	Claiborne	36.529683	-83.934670	05130101	
SLICK001.8CL	Spruce Lick Branch	Claiborne	36.532100	-83.852400	05130101	
STINK000.2CA	Stinking Creek	Campbell	36.499000	-84.115200	05130101	
STINK000.3CA	Stinking Creek	Campbell	36.497398	-84.113607	05130101	
STINK001.0CA	Stinking Creek	Campbell	36.503500	-84.103600	05130101	

Table 2 cont.

STATION_ID	NAME	COUNTY	LATITUDE	LONGITUDE	HUC	DRAIN
STINK008.5CA	Stinking Creek	Campbell	36.495885	-84.162396	05130101	
STINK013.5CA	Stinking Creek	Campbell	36.471486	-84.207227	05130101	
STRAI00.12CL	Straight Creek	Claiborne	36.550126	-83.944791	05130103	
STRAI001.5CL	Straight Creek	Claiborne	36.540687	-83.927113	05130101	
STRAI004.5CL	Straight Creek	Claiborne	36.529069	-83.888765	05130101	
TACKE000.1CL	Tackett Creek	Claiborne	36.543600	-84.001100	05130101	
TACKE000.5CA	Tackett Creek	Campbell	36.539020	-84.005680	05130101	
TACKE001.0CA	Tackett Creek	Campbell	36.539400	-84.006400	05130101	
TACKE007.5CL	Tackett Creek	Claiborne	36.502420	-83.921830	05130101	
TACKE010.5CA	Tackett Creek	Campbell	36.495500	-83.884230	05130101	
TACKE013.7CL	Tackett Creek	Claiborne	36.524300	-83.829900	05130101	
TACKE015.5CL	Tackett Creek	Claiborne	36.542700	-83.807700	05130101	
TACKE04.38CA	Tackett Creek	Campbell	36.511088	-83.963795	05130101	
TACKE04.44CA	Tackett Creek	Campbell	36.510560	-83.962950	05130101	
THOMP001.0CA	Thompson Creek	Campbell	36.358560	-84.202170	06010205	
THOMP001.5CA	Thompson Creek	Campbell	36.359810	-84.219060	06010205	
TITUS000.1CA	Titus CK	Campbell	36.392510	-84.278320	06010205	
TITUS1T0.1CA	Titus Creek Unnamed Tributary	Campbell	36.375500	-84.255640	06010205	
VALLE000.1CL	Valley Creek	Claiborne	36.570180	-83.911180	05130101	
VALLE001.0CL	Valley Creek	Claiborne	36.565500	-83.899100	05130101	
VALLE002.3CL	Valley Creek	Claiborne	36.556230	-83.880400	05130101	
VALLE003.4CL	Valley Creek	Claiborne	36.550000	-83.861200	05130101	
WOAK000.7CA	White Oak Creek	Campbell	36.526000	-84.049800	05130101	
YELLO000.12CA	Yellow Branch	Campbell	36.373330	-84.180830	06010205	

Table 3: Watershed and macroinvertebrate sample information for reference sites in ecological subregions 69d and 69e.

Station	Ecoregion	Strahler Order	Drainage (sq mi)	# of Fall Samples	# of Spring Samples	% Forested	Mean Habitat Score
ECO69D03	69d	4	9.4	3	4	99.7	173
ECO69D05	69d	2	2.9	1	4	98.4	171
ECO69D06	69d	3	15.1	2	4	98.2	160
ECO69E01	69e	2	3.5	4	5	99.1	171
ECO69E04	69e	4	16.1	4	5	94.6	164

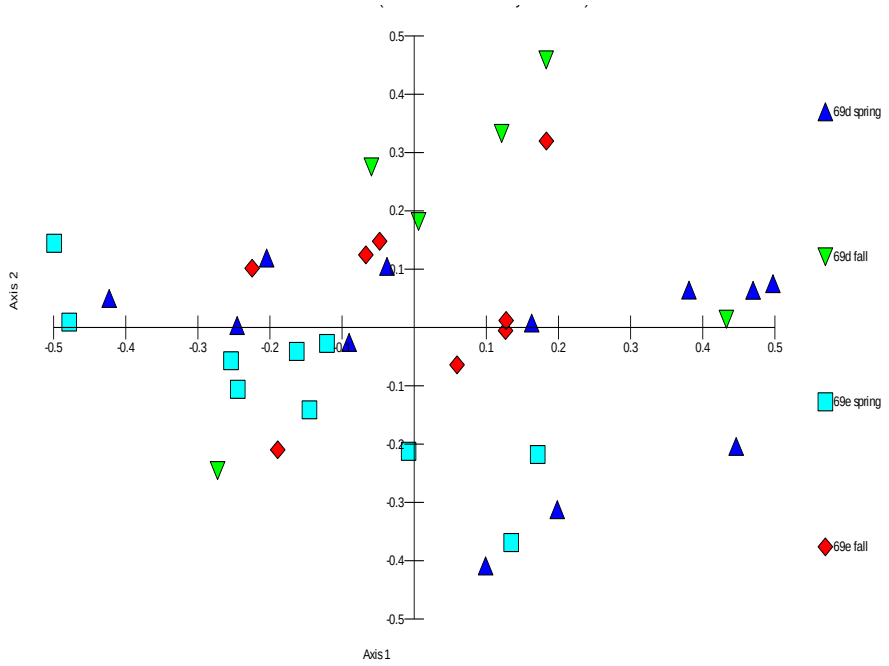


Figure 3: Multivariate analysis of macroinvertebrate populations in three reference streams in ecological subregion 69d and two reference streams in 69e. Similarity between site pairs was measured using Gower's Similarity of Coefficient.

Table 4: Comparison of reference site macroinvertebrate biometrics and habitat scores between ecological subregions 69d and 69e. Unpaired t-test used for statistical determination of similarity.

Metric	Season	Mean		Standard Error		t-Value	P-Value
		69d	69e	69d	69e		
Taxa Richness	Fall	30.8	37.1	4.8	2.2	-1.30	0.228
Taxa Richness	Spring	32.8	40.3	2.0	1.2	-3.06	0.006
EPT Richness	Fall	12.7	12.0	1.9	1.1	0.32	0.752
EPT Richness	Spring	14.3	14.0	1.2	1.4	0.18	0.856
% EPT	Fall	59.6	50.7	7.1	4.2	1.14	0.274
% EPT	Spring	63.8	41.5	4.7	5.0	3.24	0.004
% OC	Fall	21.1	25.4	5.8	3.3	-0.69	0.506
% OC	Spring	24.6	32.2	3.5	5.7	-1.19	0.249
NCBI	Fall	3.63	3.85	0.33	0.10	-0.73	0.479
NCBI	Spring	2.78	3.66	0.33	0.15	-0.88	0.342
% Clingers	Fall	61.2	61.6	5.5	2.6	-0.07	0.943
% Clingers	Spring	50.1	38.5	6.0	4.0	1.53	0.141
% Nutol	Fall	32.8	23.4	7.1	2.2	1.42	0.182
% Nutol	Spring	9.9	15.7	2.2	3.0	-1.58	0.130
TMI	Fall	35.3	37.5	1.2	1.0	-1.34	0.205
TMI	Spring	35.8	32.8	1.3	1.9	1.36	0.188
Habitat	Fall	159.7	162.6	7.8	6.1	-0.30	0.766

Habitat	Spring	172.7	171.8	4.5	3.8	0.14	0.888

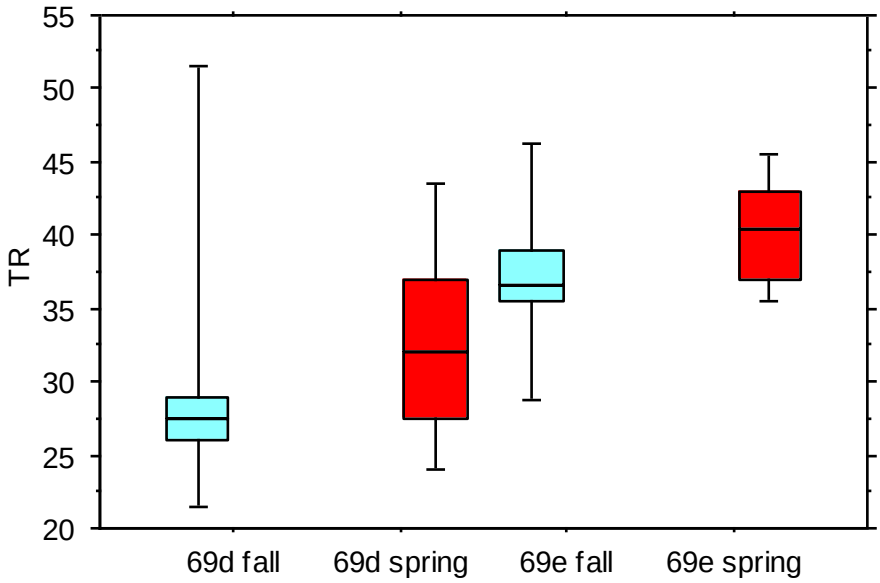


Figure 4: Comparison of Taxa Richness of semi-quantitative macroinvertebrate samples in spring and fall at reference sites in ecological subregions 69d and 69e. Sample information is in Table 3 and 4.

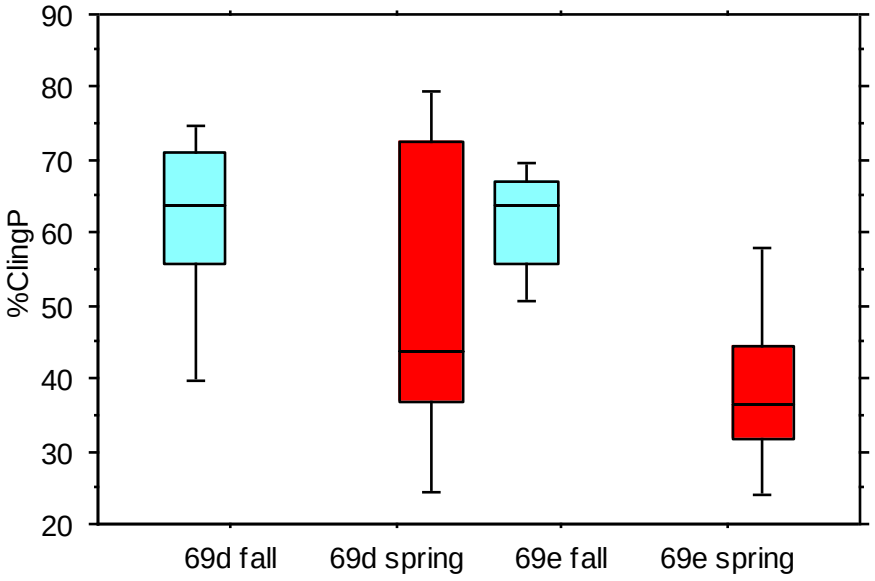


Figure 5: Comparison of Clinger Abundance of semi-quantitative macroinvertebrate samples in spring and fall at reference sites in ecological subregions 69d and 69e. Sample information is in Table 3 and 4.

During the ecoregion delineation process in Kentucky, it was observed that nutrients, alkalinity and temperature were different between these two Central Appalachian subregions shared with Tennessee. Water temperatures were not significantly different between the Tennessee reference sites in the two subregions, although this is based entirely on instantaneous daylight measurements and may not be meaningful. However, total alkalinity and nitrate+nitrite levels (Figure 6) were statistically higher in 69d while total organic carbon was higher in 69e (Table 5). The pH was also statistically different ($p < 0.05$), being slightly lower in 69e.

Table 5: Comparison of reference site pH, temperature, alkalinity and nutrients between ecological subregions 69d and 69e. Unpaired t-test used for statistical determination of similarity.

Parameter	Count		Mean		Standard Error		t-Value	P-Value
	69d	69e	69d	69e	69d	69e		
pH	66	45	7.13	6.84	0.09	0.07	2.50	0.014
Temperature	68	51	13.23	14.09	0.69	0.72	-0.84	0.401
Total Alkalinity	52	42	29.3	14.4	4.05	1.61	3.15	0.002
Nitrate+Nitrite	60	42	0.17	0.04	0.02	0.006	6.16	<0.001
Total Phosphorus	61	42	0.01	0.01	0.004	0.002	1.407	0.162
TOC	59	41	0.94	2.14	0.56	1.32	-6.25	<0.001

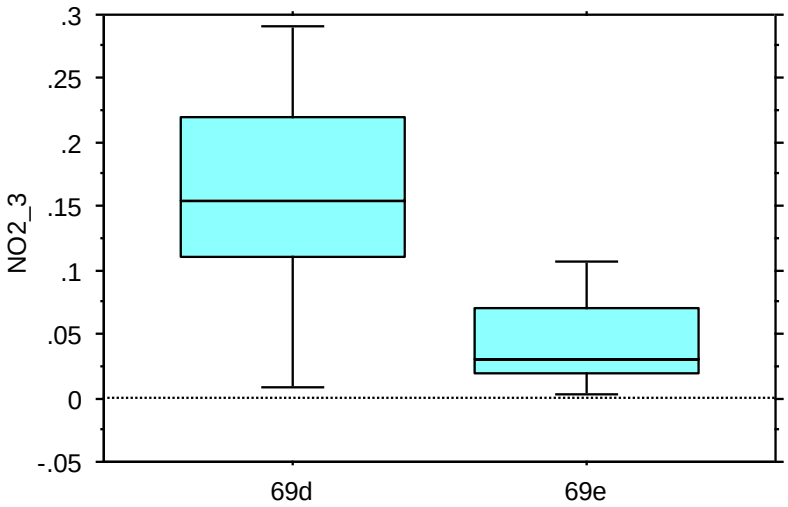


Figure 6: Comparison of nitrate+nitrite concentrations at reference sites in ecoregions 69d and 69e.

Based on Kentucky's report of different flora and fauna, dissimilar spring macroinvertebrate populations in Tennessee reference sites as well as differences in water chemistry it is possible these two subregions should be in two different bioregions for assessment purposes. Reference data will be further evaluated during the next triennial

review of water quality standards and biocriteria guidelines will be adjusted in the macroinvertebrate QSSOP if warranted.

No Business Branch (ECO69E01) a second order reference site in Campbell County is in the Cumberland Mountain Thrust Block (69e). *Photo provided by Aquatic Biology Section, TDH.*

The New River (ECO69D05) a second order reference site in Morgan County is in the Dissected Appalachian Plateau (69d). *Photo provided by Aquatic Biology Section, TDH.*

BLUE RIDGE MOUNTAINS (66)

Three new Level IV ecoregions are in the Blue Ridge Mountains (66). These are the High Mountains (66i), the Broad Basins (66j) and the Amphibolite Mountains (66k). One of the original subregions, the Southern Igneous Ridges and Mountains (66d) has been renamed the Southern Crystalline Ridges and Mountains.

High Mountains (66i)

The High Mountains ecoregion includes three separate high-elevation areas in Tennessee above 4500 feet along the North Carolina line including portions of the Cherokee National Forest in Monroe County, Great Smoky Mountains National Park in Blount, Sevier and Cocke counties and Roan Mountain in Carter County. The region has a more severe, boreal-like climate than surrounding regions, with wind and ice affecting vegetation. It has frigid soils rather than mesic soils (Griffith et al, 2002). The division has no established stations on streams in this subregion.

Amphibolite Mountains (66k)

The Amphibolite Mountains are a botanically diverse area with many rare species, including some relict and disjunct taxa from areas much further north. The amphibolite within these steeply sloping mountains is a metamorphosed black volcanic rock formed from lava that spilled on the floor of a shallow sea, mixing with layers of mud, sand and volcanic ash. In some areas, this rock weathers to produce shallow soils high in calcium and magnesium and less acidic than those found in most of Appalachia (Griffith et al, 2002). There is only one extremely small area in Tennessee located in Johnson County on the North Carolina border near Nettle Knob. There are no streams in the Tennessee portion of this subregion.

Broad Basins (66j)

This ecoregion is the Copper Basin area of Polk County and was originally included in subregion 66g, the Southern Metasedimentary Mountains. Subsequent ecoregion delineation work conducted in North Carolina and Georgia indicated there were several disjunct large basin areas of the Blue Ridge (Griffith et al, 2002). The Broad Basins ecoregion is drier, has lower elevations and less relief than the other, more mountainous Blue Ridge subregions as well as different soil and vegetation types. Copper mining and related operations occurred in this region from 1843 until 1987.

There are 22 established stations on seven streams in the division's water quality database that fall within the Broad Basins, ecoregion 66j (Table 6). One station on North Potato Creek (NPOTA004.6PO) has been used as a reference stream in a superfund project and will be evaluated as a potential ecoregion reference site. The upper two thirds

of this watershed were never mined or had processing operations. However, the area was deforested until the reforestation of the watershed in the 1980s.

Table 6: Established WPC stream stations that are in ecoregion 66j, Broad Basins.

STATION_ID	NAME	COUNTY	LATITUDE	LONGITUDE	HUC	DRAINS
BELLT000.3PO	Belltown Creek	Polk	35.004130	-84.372180	06020003	
BMILL000.1PO	Barker Mill Creek	Polk	35.003680	-84.412560	06020003	
BRUSH003.5PO	Brush Creek	Polk	35.057070	-84.414220	06020003	66g
BRUSH1T0.03PO	Brush Creek Unnamed Tributary 1	Polk	35.062530	-84.374220	06020003	
BRUSH2T0.05PO	Brush Creek Unnamed Tributary 2	Polk	35.062640	-84.372600	06020003	
BRUSH3T0.3PO	Brush Creek Unnamed Tributary 3	Polk	35.056130	-84.376960	06020003	
BRUSH3T0.4PO	Brush Creek Unnamed Tributary 3	Polk	35.054760	-84.374170	06020003	
ELLIS000.6PO	Ellis Branch	Polk	35.027920	-84.355840	06020003	
FIGHT000.0PO	Fightingtown Creek	Polk	34.991740	-84.380310	06020003	
GRASS001.0PO	Grassy Creek	Polk	35.011420	-84.437050	06020003	66g
GRASS001.1PO	Grassy Creek	Polk	35.009820	-84.437680	06020003	66g
NPOTA000.2PO	North Potato Creek	Polk	35.006110	-84.400830	06020003	
NPOTA003.3PO	North Potato Creek	Polk	35.025300	-84.373300	06020003	
NPOTA003.8PO	North Potato Creek	Polk	35.028600	-84.367500	06020003	
NPOTA004.0PO	North Potato Creek	Polk	35.031900	-84.361400	06020003	
NPOTA004.6PO	North Potato Creek	Polk	35.034700	-84.351700	06020003	
NPOTA004.8PO	North Potato Creek	Polk	35.035600	-84.350270	06020003	
NPOTA006.0PO	North Potato Creek	Polk	35.050210	-84.328130	06020003	
NPOTA008.3PO	North Potato Creek	Polk	35.053880	-84.318330	06020003	
NPOTA1T0.3PO	North Potato Creek Unnamed Tributary	Polk	35.036370	-84.327880	06020003	
NPOTA1T0.4PO	North Potato Creek Unnamed Tributary	Polk	35.036200	-84.326160	06020003	
OCOEE035.1PO	Ocoee River	Polk	35.003700	-84.408800	06020003	66d
OCOEE035.6PO	Ocoee River	Polk	35.002650	-84.399860	06020003	66d
OCOEE037.0PO	Ocoee River	Polk	34.992700	-84.387700	06020003	66d
OCOEE037.9PO	Ocoee River	Polk	34.992800	-84.381400	06020003	66d
WALKE001.2PO	Walkertown Branch	Polk	35.029300	-84.400300	06020003	
WALKE001.4PO	Walkertown Branch	Polk	35.031800	-84.397800	06020003	
WALKE1T0.1PO	Walker Branch Unnamed Tributary	Polk	35.028610	-84.407450	06020003	

SOUTHWESTERN APPALACHIANS (68)

One new subregion has been added to the Southwestern Appalachians (68). The Southern Table Plateaus (68d) is a small subregion in Tennessee but encompasses larger areas in Georgia and Alabama. This region includes Lookout Mountain in Tennessee as well as Sand and Brindley Mountains in Georgia and Alabama. While it has some similarities to the Cumberland Plateau (68a), it is lower in elevation and has a slightly

warmer climate (Griffith et al, 2002). The division has no established stream stations in this subregion.

MISSISSIPPI ALLUVIAL PLAIN (73)

Within the Mississippi Alluvial Plain, the Northern Mississippi Alluvial Plain (73a) has been renamed the Northern Holocene Meander Belts. In Tennessee, part of the northern section along the bluff hills located in Dyer, Obion and Lake counties is now included in the Northern Pleistocene Valley Trains (73b).

This subregion makes up 54% of the entire Mississippi Alluvial Plain ecoregion. Unlike the Meander Belts (73a) that contain the past and present meanders of the Mississippi River, the Valley Trains subregion is made up of Pleistocene glacial outwash deposits from the Mississippi and Ohio Rivers (Chapman et al, 2004).

There are seven WPC stations on three streams and portions of the eastern boundary of Reelfoot Lake in Dyer, Obion and Lake counties in the Northern Pleistocene Valley Trains. (Table 7). Most of these drain other subregions. There are no established reference streams in this subregion.

Table 7: Established WPC stream stations that are in ecoregion 73b, Northern Pleistocene Valley Trains.

STATION ID	NAME	COUNTY	LATITUDE	LONGITUDE	HUC	DRAINS
FDEER018.2DY	Forked Deer River	Dyer	35.98166	-89.46111	8010205	74B
JOHNS001.5DY	Johnson Creek	Dyer	36.1959	-89.3979	8010202	74A
JOHNS001.7DY	Johnson Creek	Dyer	36.19783	-89.40079	8010202	74A
OBION1T1.6DY	Obion River Unnamed Tributary	Dyer	36.1378	-89.4824	8010202	
REELF00004OB	Reelfoot Creek Embayment of Reelfoot Lake	Obion	36.4095	-89.33481	8010202	73A
REELFKIRBYLA	Reelfoot Lake	Lake	36.3954	-89.3412	8010202	74B
REELFTL1	Reelfoot Lake	Obion	36.40027	-89.34138	8010202	73A

SOUTHEASTERN PLAINS (65)

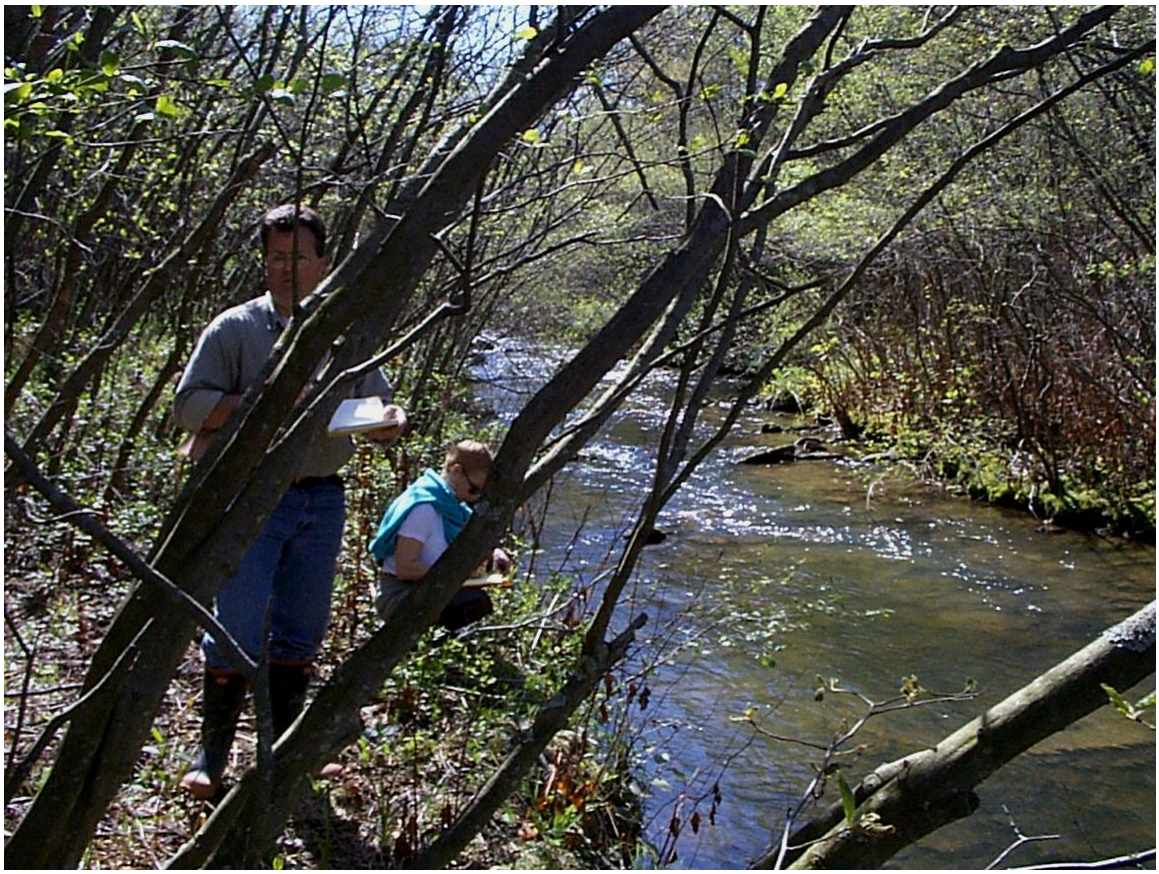
The Southeastern Plains and Hills (65e) has been renamed the Northern Hilly Gulf Coastal Plains. There were no new subregion delineations in this ecoregion.

SUMMARY

The Level IV ecoregion coverage for Tennessee has been revised from 25 to 31 ecological subregions. The division will begin to use the new ecoregion boundaries as well as the revised names for four other subregions in 2008. This will not affect bioregions used for biological assessments or translators for the narrative nutrient criteria until sufficient reference data are collected for statistical confidence.

It is possible that ecoregions 69d and 69e will be split into two bioregions. The station identifications for the two established reference sites in 69e have been revised to reflect their locations; No Business Branch (ECO69E01) and Stinking Creek (ECO69E04). Reference streams in Kentucky may be used to supplement Tennessee data to help characterize macroinvertebrate populations and water chemistry in 69d and 69e.

An attempt will be made to find reference streams in 73b and 66j. The other subregions have relatively insignificant areas in Tennessee.



North Potato Creek is a potential ecoregion reference site in the Broad Basins Region (66j). *Photo provided by Andy Binford, TDEC Superfund.*

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