

## CALLING FROG AND TOAD SURVEYS IN WEST VIRGINIA

Beginning in 2000 West Virginia will survey its frogs and toads by establishing a roadside calling survey. The effort is part of the NAAMP (North American Amphibian Monitoring Program), which is a confederation of concerned individuals, including scientists and citizens, interested in developing statistically sound long-term monitoring programs for tracking amphibian populations. The group started in 1994 in response to reports of widespread amphibian declines. NAAMP receives some support in the form of advice on statistics and coordination from the Biological Resources Division (BRD) of the United States Geological Survey, which has also been integral in the successful Breeding Bird Survey. Currently every state in the East with only a few exceptions is running frog calling routes or is in the process of establishing routes. Ideally, the program will provide landowners, biologists, managers and others with information on the status of frogs within specific regions or across state boundaries across whole ranges of species.

The BRD has provided us the locations of 39 randomly generated routes throughout West Virginia. We have located 10 sites along each route that contain suitable frog breeding habitat. Our job now, with your generous help of course, is to visit each of these routes 3 times (runs) each year and collect information on certain environmental parameters, and the type and number of frogs and toads calling at each site. Included in the enclosed packet are the location of routes and sites you have expressed interest in, directions for conducting surveys, data sheets, training tapes of all frogs and toads found in West Virginia, and other considerations that will make this a successful venture for us all. We would like to personally thank you all for being a critical part of this project and urge you to contact us with ANY question you may have.

### WHEN TO SURVEY

The time that calling surveys are carried out is very important. West Virginia has a wide variety of frogs and toads, and each species usually has a specific period during which they can be heard calling. Add to this the variety of terrain within the state and things can get complex. For instance wood frogs might start calling in early February in the Ohio River valley but not start calling in the high Allegheny Mountains for another month in some cases. In order to synchronize our survey efforts best with times when frogs will likely be calling we have split the state into multiple ecoregions (see attached map). For each ecoregion we have constructed a timetable that shows the time period you would be most likely to hear each species calling (Charts 1,2,3,4). Based on these timelines we have set windows during which each run will take place (see below). During windows 1, 2, and 3 please visit each route one night and survey each stop following the protocol below (see How to Survey). Choosing a night to visit a route will have to work around your schedule, but all nights are not created equal when it comes to surveying frogs. If it is too cold frog activity will generally be low. During a light drizzle on a warm night is perfect, but hard rains might interfere with your ability to hear. Strong winds (above ??? on Beaufort Scale) will also usually equate to low calling activity. We have set some guidelines to help you choose which is a good night for each window. So pick a

night during the window that is above the minimum air temperature, with low winds, and optimally after a good rain or during a light drizzle.

	<u>Min. Air Temp</u>
Window 1	45 degrees F ????
Window 2	50 degrees F ????
Window 3	55 degrees F ????

#### Ecoregion 13

**Window 1** - Second week in Feb - Second week in March

**Window 2** - The month of April

**Window 3** - Second week in May until 2<sup>nd</sup> week in June

#### Ecoregion 21

**Window 1** - Third week in February until the third week in March.

**Window 2** - First week in April to First week in May

**Window 3** - Last week in May until last week in June

#### Ecoregion 22

**Window 1** - Last week Feb - last week March

**Window 2** - First week April - First week May

**Window 3** - Last week May until last week June

#### Ecoregion 24

**Window 1** - The month of March

**Window 2** - 2<sup>nd</sup> week in April - 2<sup>nd</sup> week in May

**Window 3** - Month of June

### HOW TO SURVEY

On a night described above as suitable, drive to your route. We will have visited these routes beforehand and designated 10 stops along the route. In this packet will be a chart that describes each stop, the distance from the beginning of the route to each stop, and distances between stops. We will mark most stops with a bright ribbon to make it easy to find. Once you find the stop pull your car over at a **SAFE** spot. You might want to fill some of the data sheet out while in the car like the date and start time.

As soon as you are out of the car and ready to listen, the listening period begins and lasts 4 minutes. During this period identify and rank each frog species that you hear calling based on the calling code on the data sheets. These codes are obviously quite subjective, but do the best you can to judge and remain as consistent as possible. If you hear a species calling at a code 1 initially, but by the end of the listening period the calling

intensifies to a code 3, only record the code 3. Beside the calling code, and this is optional but would be helpful, try to estimate the number of individuals that are calling. This may help later to determine if there is any relationship between the calling code and an estimate of numbers of individuals. Although there will usually be a body of water near the road at the stop that we have marked you need not limit your listening to that specific location. If you hear a peeper calling away in the background please record it as well. The stops will be at least .5 miles apart, but there may be occasions where you are certain that you are hearing the same 3 frogs that you heard on you last stop. If you are SURE that these are the same individuals we will ask you to only record them for the stop that you believe is the closest to the calling individuals. On the back of the data sheet there is a space for comments, night birds heard and also other herps. If you notice changes in the habitat, hear species of night birds or see other reptiles or amphibians at or between stops you might consider taking a minute to mark these down. Certain species of birds only call at night and therefore are not well represented in existing bird calling surveys. Also on the back of the sheet is a space for listing excessive noises and a count of the number of vehicles that pass. Please note if there is a loud bunch of dogs, a generator etc that is making a racket in the area, and a count of approximately how many cars pass you on the road adjacent to the stop. These noises might interfere with your ability to hear calling frogs and as a result foul up data on population trends.

At some time when you are at a stop, if it is safe to do so and if you have the equipment, please record water temperature and pH at the stop. At the beginning and end of each route please record air temperature, relative humidity (if you have a RH meter), and wind conditions based on the Beaufort scale listed on data sheets. On the data sheet there is a space for weather conditions. Please circle the appropriate category and if the weather is different at the end of the route make note of this. Also please make a brief note about the weather history for the past one or two days.

Some other things to consider when running routes are that you want to run the route in order from stop one to stop ten, and that a route should be run in its entirety on a given night. It may be easiest to run a route with two people, one person listening and another person recording. The person listening should be listed on the data sheet as the principle investigator. It is optimal if the principle investigator remains the same for the route over the numerous runs each year to account for differences in peoples' ability to hear and count frogs. Safety is absolutely essential to this project. If for any reason you feel that the route that we have given you is unsafe, or becomes unsafe, please let us know and we will work with you to change the route.

Thanks for all the help!

## Contacts

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# West Virginia Calling Frog Survey

Site Description Form

Route Name:

Route Number:

Surveyor:

Date:

Stop #	Miles	Brief description of stop
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Comments:

## West Virginia Calling Frog Survey Data Sheet

Route # :

Date:

Run # (circle):      1            2            3

**End Time:**

End Air Temp:

End RH:

**End Wind:**

Weather: (circle)    Clear   Hazy   Foggy   Rainy   Partly Cloudy   Mostly Cloudy   Snow

### Weather History:

### Frog Call Codes

1. Individuals can be counted; there is space between calls.
2. Calls of individuals can be distinguished but there is some overlapping of calls (intermediate between "1" and "3" )
3. Full Chorus. Calls are constant, continuous and overlapping

For each Stop Number record maximum calling code of each species heard / estimate of # of individuals heard.

[illegible]

**Stop 1.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 2.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 3.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 4.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds hear, other herps:

**Stop 5.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 6.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 7.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 8.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 9.**

Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

**Stop 10.**

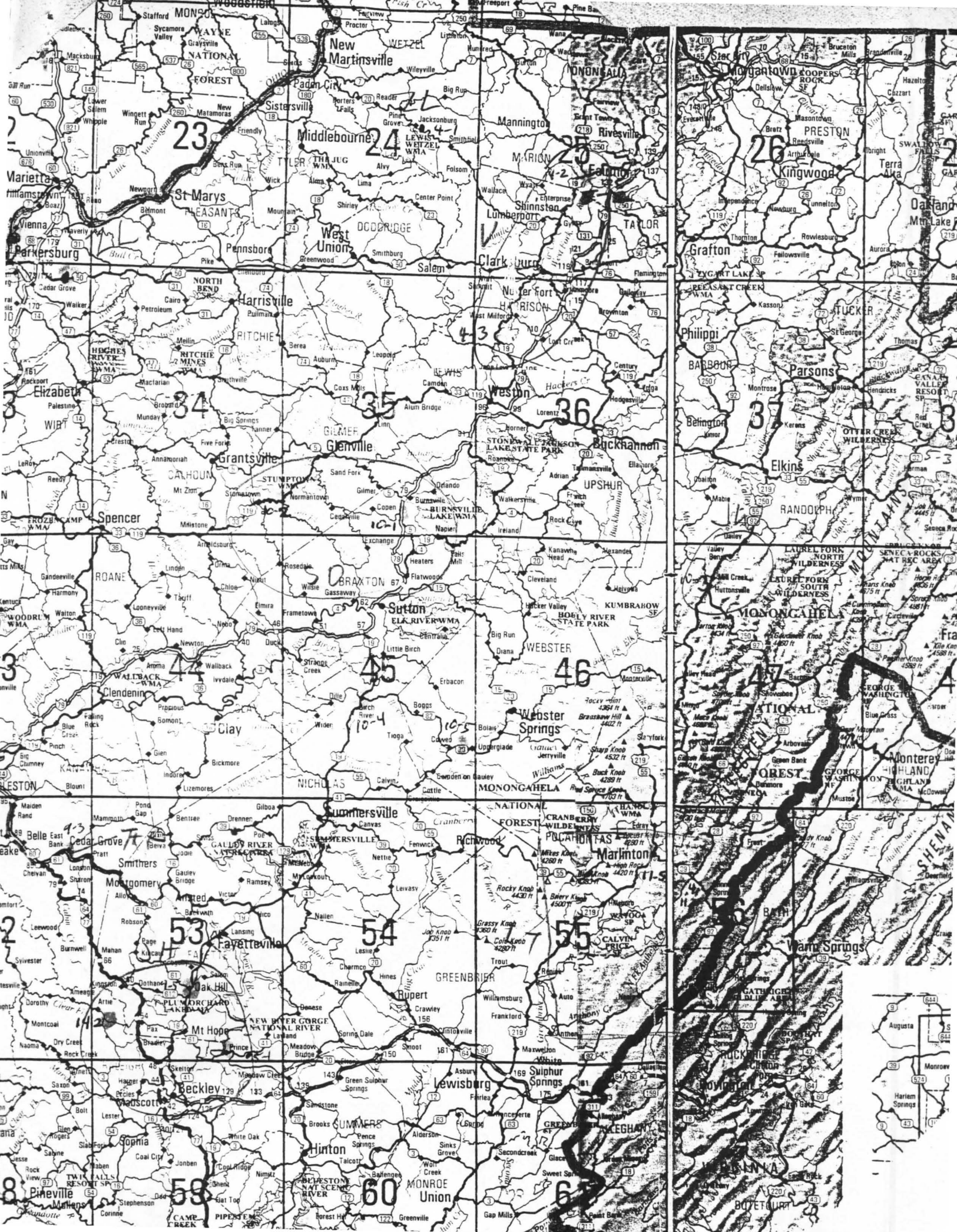
Water Temperature: Water pH: Excessive noise, # of cars

Comments, night birds heard, other herps:

Calling phenology of West Virginia Frogs and Toads. Beside each species is the range of time that the species normally breeds and therefore is a good time to survey for that species.

<b>SPECIES</b>	<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>	<b>JUL</b>	<b>AUG</b>	<b>SEP</b>	<b>NOV</b>	<b>DEC</b>
<b>A. Bullfrog</b>				_____	_____	_____	_____				
<b>So. Green</b>				_____	_____	_____	_____				
<b>Wood frog</b>		_____	_____								
<b>N. Leopard</b>			_____	_____							
<b>Pickeral</b>			_____	_____	_____						
<b>E. Cricket</b>											
<b>Blanchards Cricket</b>											
<b>Gray Treefrog Complex</b>					_____	_____	_____				
<b>Mt. Chorus</b>		_____	_____	_____	_____						
<b>Upland Chorus</b>		_____	_____	_____	_____						
<b>No. Spring Peeper</b>		_____	_____	_____	_____						
<b>E. American Toad</b>			_____	_____	_____						
<b>Fowler's Toad</b>				_____	_____	_____					
<b>E. Spadefoot Toad</b>											





## Frog call routes and corresponding USGS Quads

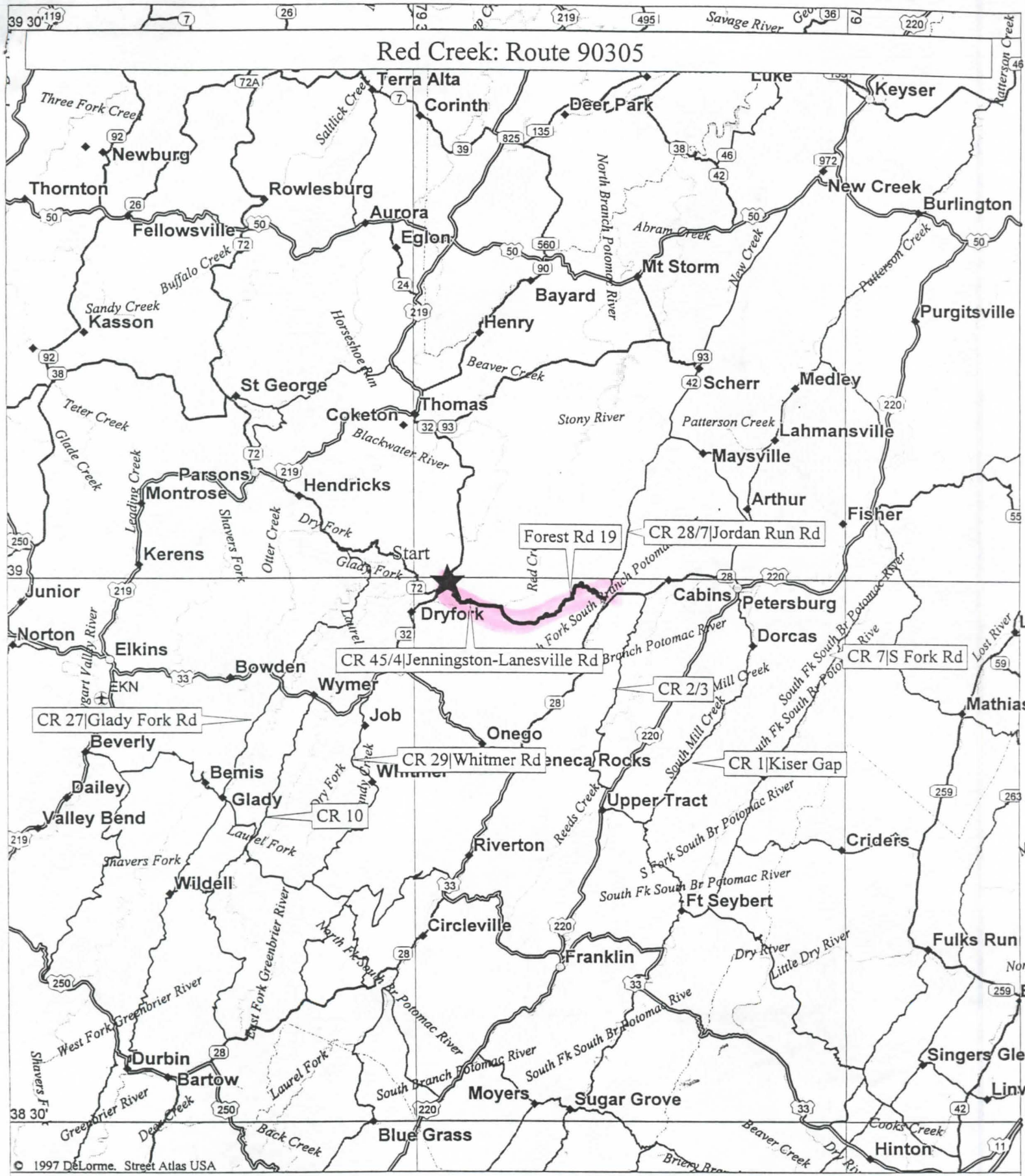
Rt #	Quad name
90103	- Parkersburg , Marietta
90203	- Kanawha, Valley Mills, Willow Island
90104	- Pine Grove, Porters Falls
90204	- Fairmont West, Grant Town
90304	- West Milford, New Milton
90105	- Newburg, Masontown
90205	- Davis, Mt. Storm Lake, Greenland Gap
90305	- Laneville, Hopeville, Petersburg West
90106	- Cresaptown, Headsville, Romney
90206	- Springfield, Levels*, Headsville
90306	- Burlington, Old Fields, Medley
90406	- Glengary, Tablers Station*, Martinsburg, Shepherdstown
90506	- Moorefield*, Lost River State Park, Petersburg East
90107	- Charlestown, Shepherdstown, Martinsburg, Tablers Station*
90108	- Wayne, Lavalette, Huntington
90208	- West Hamlin, Winslow, Barboursville, Huntington
90109	- Robertsborg, Winfield
90209	- Sissonville, Kenna
90309	- Cedar Grove, Mammoth
90409	- Clothier, Madison
90509	- Oak Hill, Beckwith, Powellton
90110	- Burnsville, Cedarville
90210	- Normantown*
90310	- Mill Creek, Adolph, Pickens
90410	- Widen*, Tioga*, Cowen
90510	- Onega, Upper Tract, Hopeville
90111	- Upper Tract, Mozer, Petersburg West
90311	- Sugar Grove
90411	- Minnehaha Springs, Clover Lick
90511	- Marlinton
90113	- Trace, Myrtle, Wilsondale
90114	- Wharton, Clothier
90214	- Pax, Dorothy
90314	- Gilbert, Baileysville
90414	- Keystone, Crumpler
90115	- Prince, Thurmond
90215	- Alvon, Anthony
90315	- Peterstown, Forest Hill

\* We need these quads (Levels, Tablers Station, Moorefield, Normantown, Widen, Tioga)

Route #	Rt. name	Coord.	Surveyor	visited	grdtrth - done	Run 1	Run 2	Run 3
90103	Parkersburg							
90203	Murphytown							
90104	Jacksonburg							
90204	Worthington							
90304	Jane Lew							
90105	Arthurdale							
90205	Davis							
90305	Red Creek							
90106	Ft. Ashby							
90206	Springfield							
90306	Burlington							
90406	Glengary							
90506	Moorefield							
90107	Halltown							
90108	Wayne	ZF	ZF					
90208	Salt Rock	ZF	J. Bailey	X	X			
90109	Grimms Landing	TKP	TKP	X				
90209	Liberty	TKP	TKP	X				
90309	Cedar Grove	TKP	TKP	X				
90409	Jeffrey	ZF						
90509	Oak Hill	ZF	K. Settle - Concord	X				
90110	Copen							
90210	Normantown							
90310	Mill Creek							
90410	Birch River							
90510	Cowen							
90111	Senaca Rocks							
90211	Upper Tract							
90311	Brandywine							
90411	Minnehaha Springs	ZF	Pauley Crew					
90511	Marlington	ZF	Pauley Crew	X	X			
90113	Dingess	ZF	ZF	X	X			
90114	Bob White	ZF						
90214	Clear Creek	ZF	K. Settle - Concord	X				
90314	Hanover	ZF	ZF		X			
90414	Kyle	ZF	J. Bailey					
90115	Prince	ZF	K. Settle -	X	X			

			Concord					
90215	Neola	ZF	Pauley crew					
90315	Peterstown	ZF	Doug Wood	X	X			





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Mag 10.00

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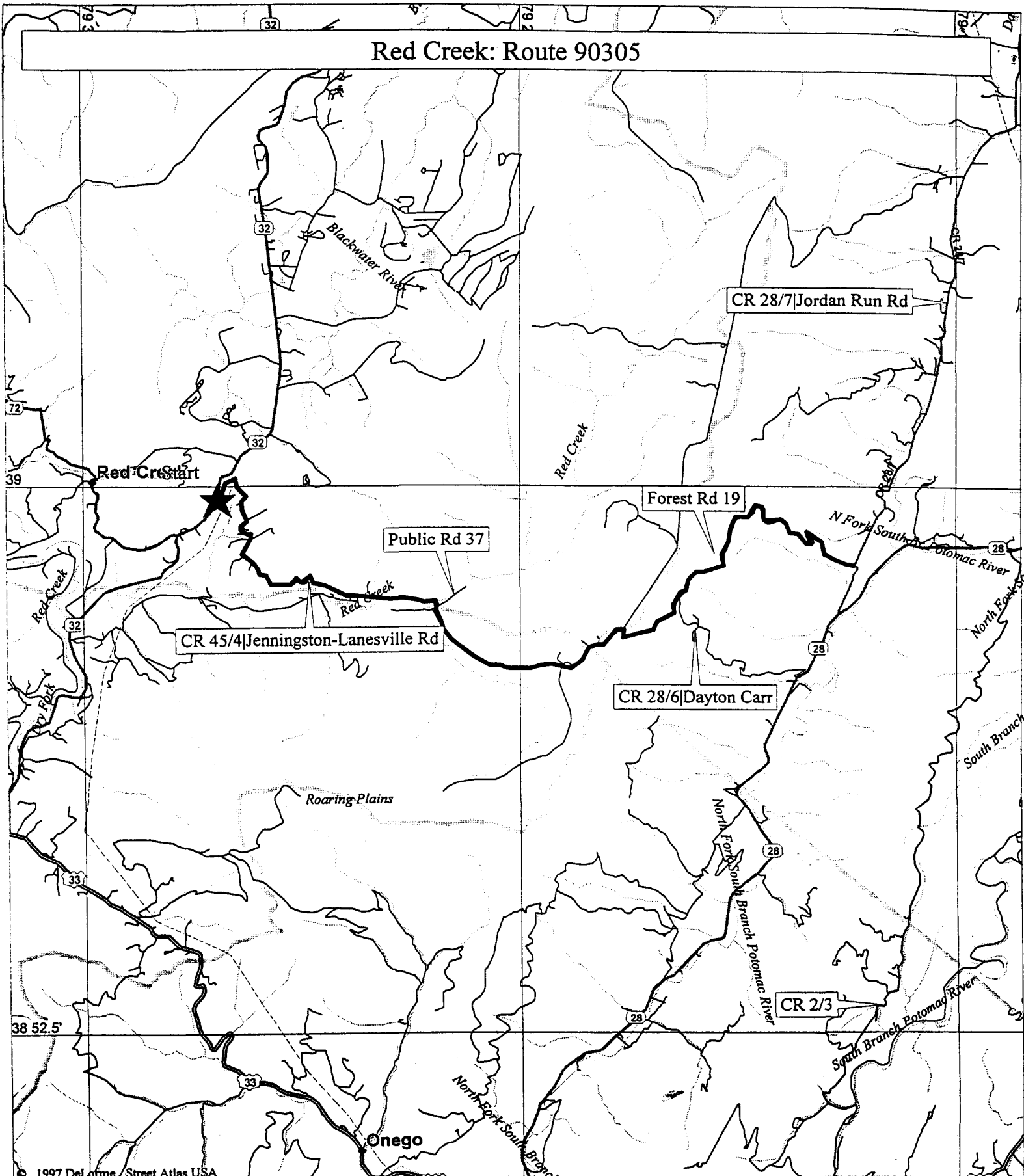
Scale 1:500,000 (at center)

10 Miles

10 KM

- Primary State Route
- Major Forest Road
- US Highway

# Red Creek: Route 90305



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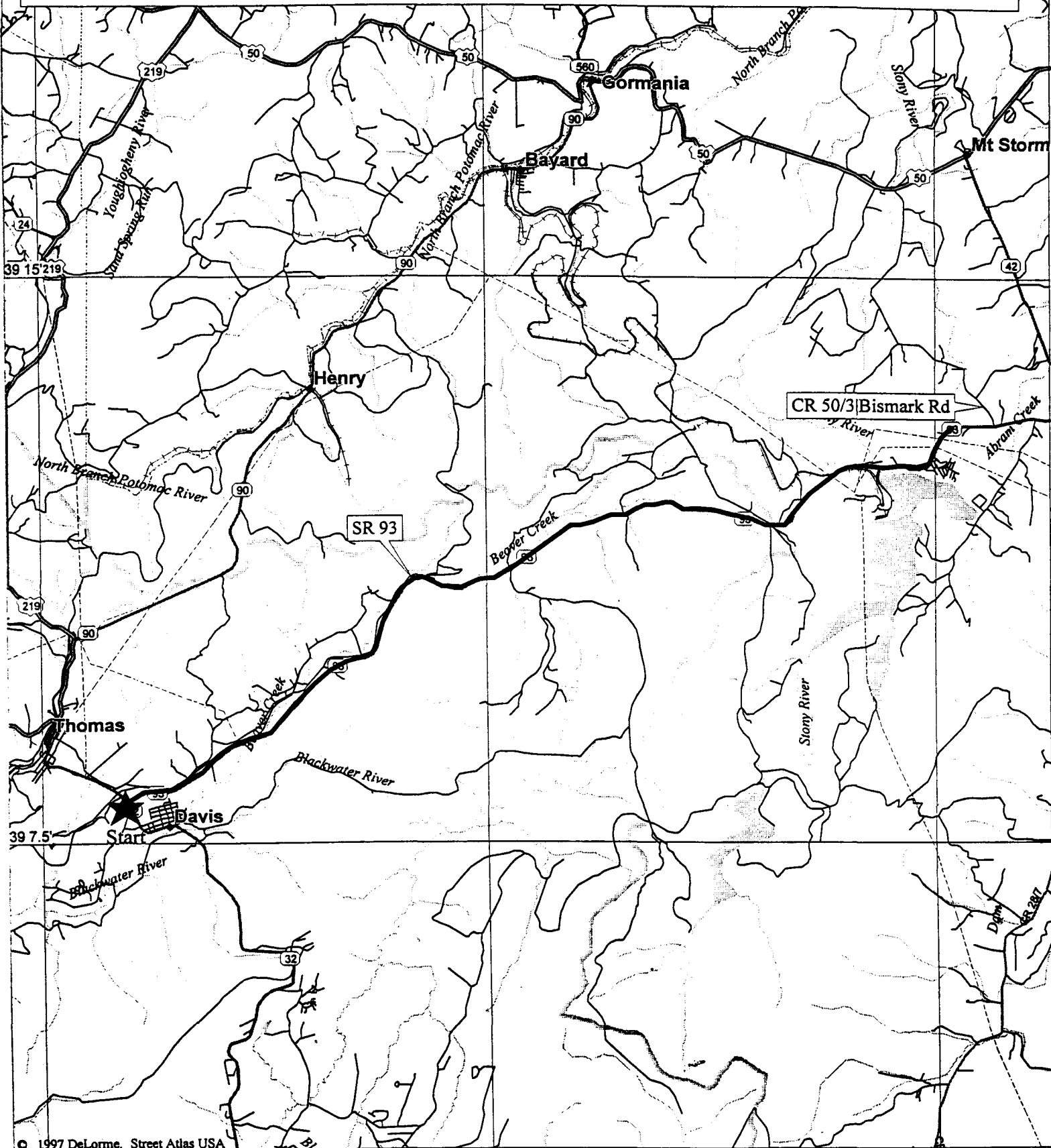
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2 Miles

2 KM

- Local Road
- Major Forest Road
- Trail

# Davis: Route 90205



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2 Miles

2 KM

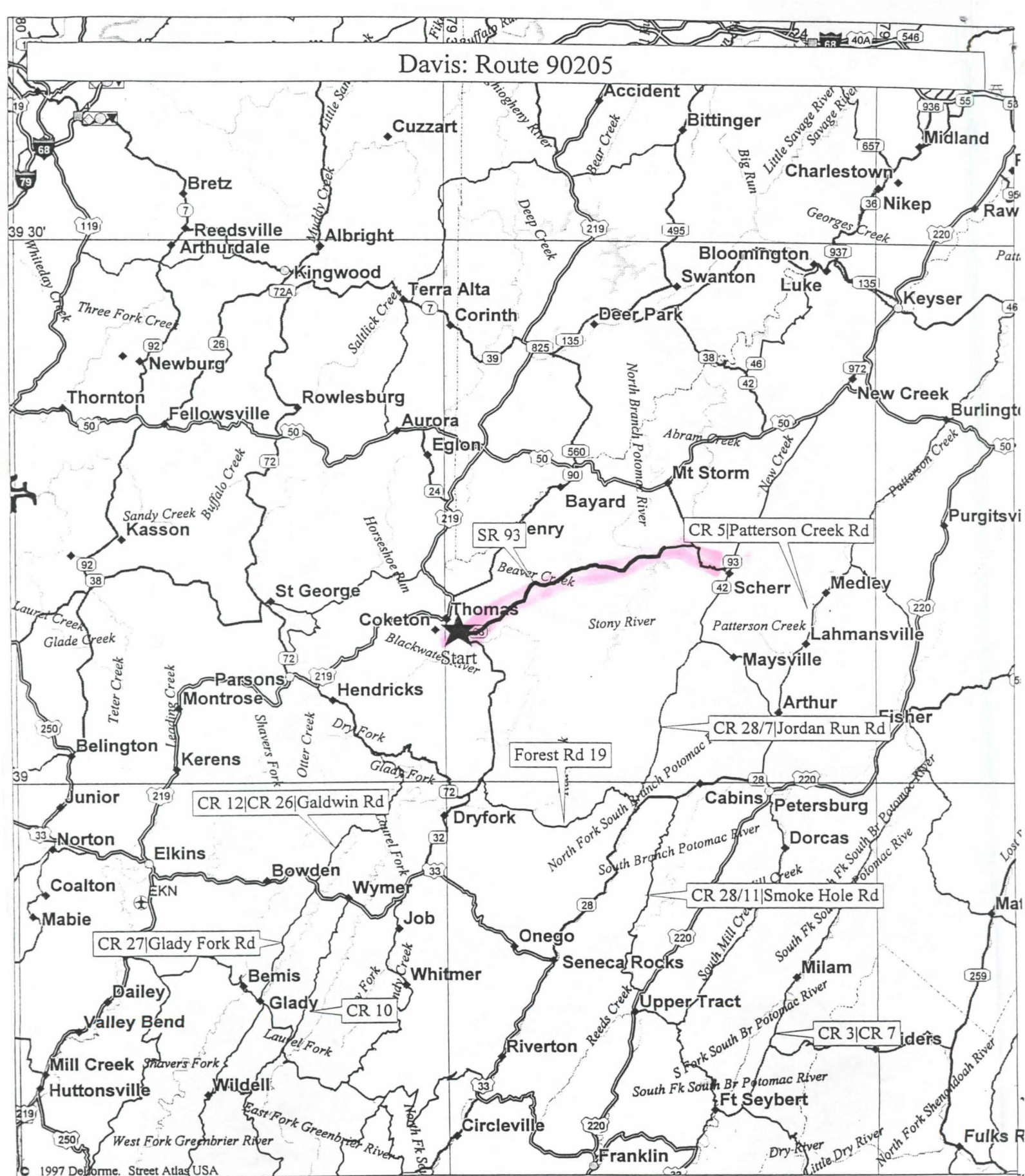
— Local Road

— Trail

— US Highway



# Davis: Route 90205



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Scale 1:500,000 (at center)

10 Miles

10 KM

- Primary State Route
- Major Forest Road
- Rest Area