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## **2015 Interim Report on Stream Monitoring Results Volunteer Water Information Network**

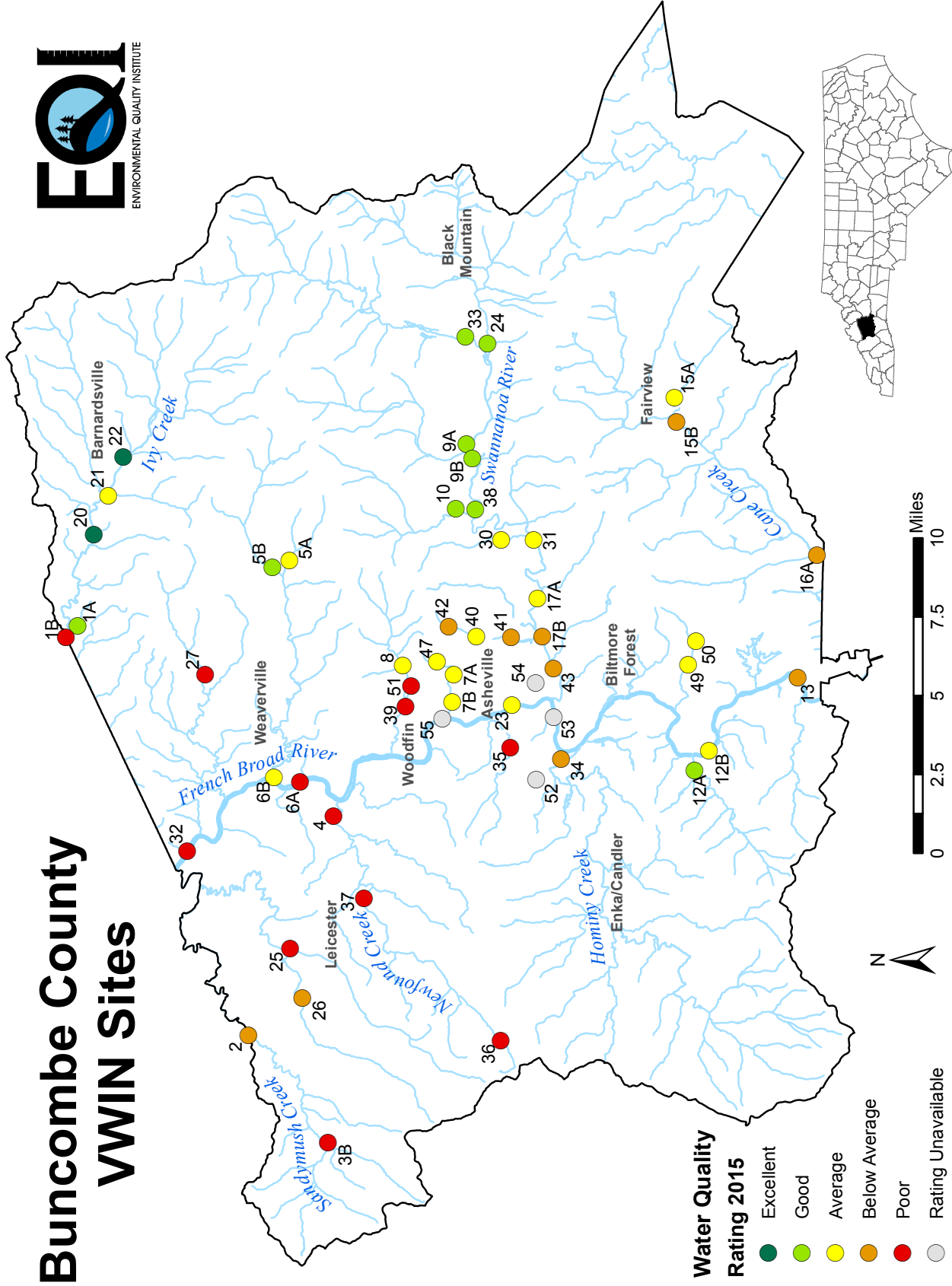
The Volunteer Water Information Network (VWIN) is a partnership of groups and individuals dedicated to improving water quality in western North Carolina. The Environmental Quality Institute (EQI) provides administration and technical support through laboratory analysis of water samples, statistical analysis of water quality results, and written interpretation of the data. This interim report communicates the newest site ratings while the full technical report is being created.

VWIN monitoring began in 1990 in Buncombe County and uses trained local volunteers to collect the samples. The VWIN water quality rating system facilitates comparisons of specific problem areas such as sediment and nutrient pollution. A maximum score of 100 and a minimum of 25 are possible. These scores are converted to ratings from Excellent to Poor for ease of interpretation. Changes over time are also noted as stream water quality improves or deteriorates. Ratings are unavailable for new sites.

EQI also assigns site-specific letter grades for each parameter based on the results of stream monitoring. The grades are designed to characterize the water quality at each site with regard to individual chemical and physical parameters. These parameters include pH, alkalinity, turbidity, total suspended solids, conductivity, orthophosphate, ammonia-nitrogen, and nitrate/nitrite-nitrogen. Water quality standards are used where applicable to assess the possible impacts these levels could have on human health and organisms in the aquatic environment.

Trends in water quality become more evident with each additional year of continuous stream monitoring, painting a clearer picture of actual conditions existing in various streams and watersheds. Continued data collection over time provides cost-effective, updated information on changing conditions. Many factors, such as population density, industrial development, topography, and land use patterns can affect water quality. VWIN monitoring allows local governments, organizations, and individuals to compare areas with similar problems or successes, share, and develop regional plans. With up-to-date water quality statistics, financial resources and policies can be focused on areas of greatest concern.

# Buncombe County VWIN Sites



## Water Quality Ratings for Buncombe County VWIN Sites (data from 2013 to 2015)

Southern Buncombe County		scores*				
site #	site description	sediment	nutrients	overall	rating	trend**
15B	Ashworth Creek at Cane Creek	58	75	67	Below Average	
15A	Cane Creek at Hwy 74	67	83	75	Average	
16A	Cane Creek at Mills Gap Rd.	58	75	67	Below Average	
12A	Bent Creek at SR 191 (at French Broad River)	75	92	83	Good	↘
50	Dingle Creek at Overlook Rd.	75	67	71	Average	
49	Dingle Creek at Ramble Way	75	83	79	Average	

Swannanoa River Watershed		scores				
site #	site description	sediment	nutrients	overall	rating	trend
33	North Fork Swannanoa River at Grovestone Quarry	67	100	83	Good	
24	Swannanoa River at confluence with North Fork	67	100	83	Good	
9A	Bee Tree Creek above Owen Lake	75	92	83	Good	↘
9B	Swannanoa River at Bee Tree Creek	67	100	83	Good	
10	Bull Creek at Swannanoa River	75	92	83	Good	
38	Swannanoa River at Bull Creek	67	100	83	Good	↗
30	Grassy Branch	58	83	71	Average	
31	Swannanoa River at Grassy Branch Confluence	67	92	79	Average	↘
17A	Swannanoa River at NC81 below S. Tunnel Rd	58	100	79	Average	
17B	Haw Creek at Swannanoa River	50	75	63	Below Average	
42	Ross Creek at Upper Chunn's Cove	42	92	67	Below Average	
40	Ross Creek at Lower Chunn's Cove Rd bridge	50	92	71	Average	↗
41	Ross Creek at Tunnel Rd	50	83	67	Below Average	↗
43	Ross Creek at Swannanoa River	50	75	63	Below Average	

Urban Watersheds of Asheville		scores				
site #	site description	sediment	nutrients	overall	rating	trend
34	Lower Hominy Creek at SR 191	50	83	67	Below Average	
35	Smith Mill Creek at Louisiana Blvd.	50	67	58	Poor	↘
47	Glenn Creek at entrance to UNCA	75	67	71	Average	↗
7A	Glenn Creek at UNC-A Botanical Gardens	75	67	71	Average	↗
7B	Reed Creek at Reed Creek Confluence	75	67	71	Average	↗
51	Input into pond at South Creek	50	67	58	Poor	
39	South Creek at Beaver Lake	50	67	58	Poor	
8	Beaverdam Creek at Beaver Lake	67	83	75	Average	

Northeastern Buncombe County		scores				
site #	site description	sediment	nutrients	overall	rating	trend
5A	Ox Creek at Reem's Creek	67	92	79	Average	↗
5B	Reem's Creek at Ox Creek	75	92	83	Good	↘
6B	Reem's Creek at US 25/70	58	92	75	Average	↗
27	Flat Creek at US 19/23	42	75	58	Poor	↘
22	Ivy Creek at Dillingham Road	83	100	92	Excellent	
21	Paint Fork at Ivy Creek confluence in Barnardsville	50	92	71	Average	
20	Ivy Creek at Buckner Branch Road	92	100	96	Excellent	↗
1B	Little Ivy at Forks of Ivy	25	75	50	Poor	
1A	Big Ivy at Forks of Ivy	75	92	83	Good	↗

Northwestern Buncombe County		scores				
site #	site description	sediment	nutrients	overall	rating	trend
36	Newfound Creek at Dark Cove Road	33	75	54	Poor	
37	Newfound Creek at Leicester Hwy	25	58	42	Poor	
4	Lower Newfound Creek	25	75	50	Poor	
25	South Turkey Creek	33	75	54	Poor	↘
26	North Turkey Creek at North Turkey Creek Rd.	58	75	67	Below Average	
3B	Sandymush at Willow Creek	33	75	54	Poor	↗
2	Lower Sandymush Creek	50	75	63	Below Average	

French Broad River		scores				
site #	site description	sediment	nutrients	overall	rating	trend
13	French Broad River at Corcoran Park	50	83	67	Below Average	↗
12B	French Broad River at Bent Creek	58	92	75	Average	↗
23	French Broad River at Jean Webb Park	50	92	71	Average	
6A	French Broad River at Ledges Park	50	58	54	Poor	
32	French Broad River at Walnut Island Park	42	67	54	Poor	

\* scores range from 100 (best) to 25 (worst)

\*\* trends represent score improvements or declines in recent years from 2012 to 2015

**Letter Grades for Chemical Parameters by Site (data from 2013 to 2015)**

site #	site description	pH	alkalinity	turbidity	total suspended solids	conductivity	orthophosphate	ammonia-nitrogen	nitrate/nitrite-nitrogen
1A	Big Ivy at Forks of Ivy	A	D	C	A	B	B	A	A
1B	Little Ivy at Forks of Ivy	A	A	D	D	D	C	A	B
2	Lower Sandymush Creek	A	A	C	C	C	C	A	B
3B	Sandymush Creek at Willow Rd	A	A	D	D	C	C	A	B
4	Lower Newfound Creek	A	A	D	D	D	C	A	B
5A	Ox Creek at Ox Creek Rd	A	B	B	C	B	B	A	A
5B	Reems Creek at Ox Creek Rd	A	C	B	B	B	B	A	A
6A	French Broad River at Ledges Pk	A	C	C	D	B	D	B	B
6B	Reems Creek at confluence with FBR	A	B	C	B	C	B	A	A
7A	Glenn Creek at UNCA Bot. Gardens	A	A	A	A	D	C	A	C
7B	Reed Creek at UNCA Bot. Gardens	A	A	A	A	D	C	A	C
8	Beaverdam Creek at Merrimon Ave	A	B	B	A	D	B	A	B
9A	Beetree Creek at Beetree Rd	A	C	C	B	A	B	A	A
9B	Swannanoa River near Beetree Rd	A	C	C	B	B	A	A	A
10	Bull Creek at Old Farm Sch. Rd	A	C	B	B	B	B	A	A
12A	Bent Creek at NC 191	A	D	C	B	A	B	A	A
12B	French Broad River at NC 191	A	D	C	C	B	B	A	A
13	French Broad River at Corcoran Pk	A	D	C	D	B	C	A	A
15A	Cane Creek at Hwy 74	A	C	C	B	B	C	A	A
15B	Ashworth Creek at Hwy 74	A	B	C	B	C	C	A	B
16A	Cane Creek at Mills Gap Rd	A	B	C	B	C	C	A	B
17A	Swannanoa River at NC 81	A	C	C	B	C	A	A	A
17B	Haw Creek at NC 81	A	A	C	B	D	C	A	B
20	Ivy Creek at Buckner Branch Rd	A	D	A	A	B	A	A	A
21	Paint Fork at Paint Fork Rd	A	B	C	C	C	B	A	A
22	Ivy Creek at Dillingham Rd	A	D	C	A	A	A	A	A
23	French Broad River at Jean Webb Pk	A	C	D	C	B	B	A	A
24	Swannanoa River at RR/NC 70	A	D	C	B	B	A	A	A
25	South Turkey Creek at Turkey Cr Rd	A	B	D	D	C	C	A	B
26	North Turkey Creek at N Turkey C Rd	A	A	C	B	C	C	A	B
27	Flat Creek at US 19/23	A	B	D	B	D	C	B	A
30	Grassy Branch at Hickory Tree Rd	A	B	C	B	C	B	A	B
31	Swannanoa River near Azalea Rd	A	C	C	B	B	B	A	A
32	French Broad River at NC 251	A	C	C	D	C	D	A	B
33	N Fork Swannanoa R at Grovestone	A	D	C	B	B	A	A	A
34	Lower Hominy Creek at SR 191	A	B	C	C	C	B	A	B
35	Smith Mill Creek at Louisiana Ave	A	B	C	B	D	B	B	C
36	Newfound Creek at Leicester Hwy	A	B	D	D	C	C	A	B
37	Newfound Creek at Dark Cove Rd	A	A	D	D	D	C	B	C
38	Swannanoa River at Bull Creek	A	C	C	B	B	A	A	A
39	South Creek at Beaver Lake	A	A	C	B	D	C	A	C
40	Ross Creek at Lower Chunn's Cove	A	A	C	B	D	B	A	A
41	Ross Creek at Tunnel Road	A	A	C	B	D	B	A	B
42	Ross Creek at Upper Chunn's Cove	A	B	C	D	C	B	A	A
43	Ross Creek at NC 81	A	A	C	B	D	B	B	B
47	Glenn Creek at entrance to UNCA	A	A	A	A	D	C	A	C
49	Dingle Creek at Ramble Way	A	B	A	A	D	B	A	B
50	Dingle Creek at Overlook Rd	A	A	A	A	D	A	D	B
51	Flow into wetland at BLBS	A	A	C	B	D	C	A	C
52	Buttermilk Creek	A	B	C	B	C	B	A	C
53	Moore Branch	A	A	C	B	D	C	A	C
54	Town Branch (Nasty Branch)	A	A	C	B	D	C	A	C
55	Lower Reed Creek	A	A	C	B	D	D	A	C

Letter grades range from A (best) to D (worst) and are based on grading rules specific for each parameter