

APPENDIX A

LOWER ANDROSCOGGIN RIVER WATERSHED

(Huc8: 01060002)

I. WATERSHED DESCRIPTION AND MAPS

The Lower Androscoggin River Watershed covers an area of approximately 225 square miles situated on the Maine-New Hampshire border in the northern half of the state. New Hampshire towns included within the watershed area are: Success, Shelburne, Beans Purchase, Jackson, Gorham, Martins Location, Greens Grant, Pinkham's Grant, Sargents Purchase, Thompson & Meserve, Low & Burbanks, and Randolph. As shown in Figure 1, the primary watercourse in the region is the Androscoggin River, which flows south from Berlin, NH exiting the watershed on the eastern border in Maine. Dominant land formations in the watershed include parts of the Presidential Mountains, White Mountains, Dartmouth Range, and Crescent Range in the west and the Mahoosuc Range to the north.

As shown in Figure 2, the watershed consists of 92% forested land cover, a great portion of which is conserved and protected as part of the White Mountains National Forest. The Appalachian Trail forested corridor crosses the watershed from north to south. Small areas of development and disturbed land identified on the following land cover map (Figure 2) are found along the river and around Gorham, NH and make up 4% of watershed area.

To facilitate management of the State's water resources, surface waters in New Hampshire have been divided into over 5,200 smaller segments called Assessment Units (AUs) that each have a unique identification number or AUID. Due to resource constraints it is not possible to sample all AUs. Of the AUs sampled in this watershed, three have been assessed as impaired for bacteria. The location of each bacteria impaired surface water AU is shown on Figure 1 as either a dark blue circle or line. Two impaired reaches are found in Gorham and the third impaired reach is in the neighboring town of Randolph to the west. Section II presents all bacteria data collected in these impaired reaches over the past 10 years by NH DES, with exceedances of the state's water quality standards for bacteria noted. Applicable bacteria water quality criteria for each AU as well as an estimate of the percent reduction needed to meet each water quality criterion (and TMDL), based on the highest recorded bacteria measurement that exceeds the criterion, are also provided.

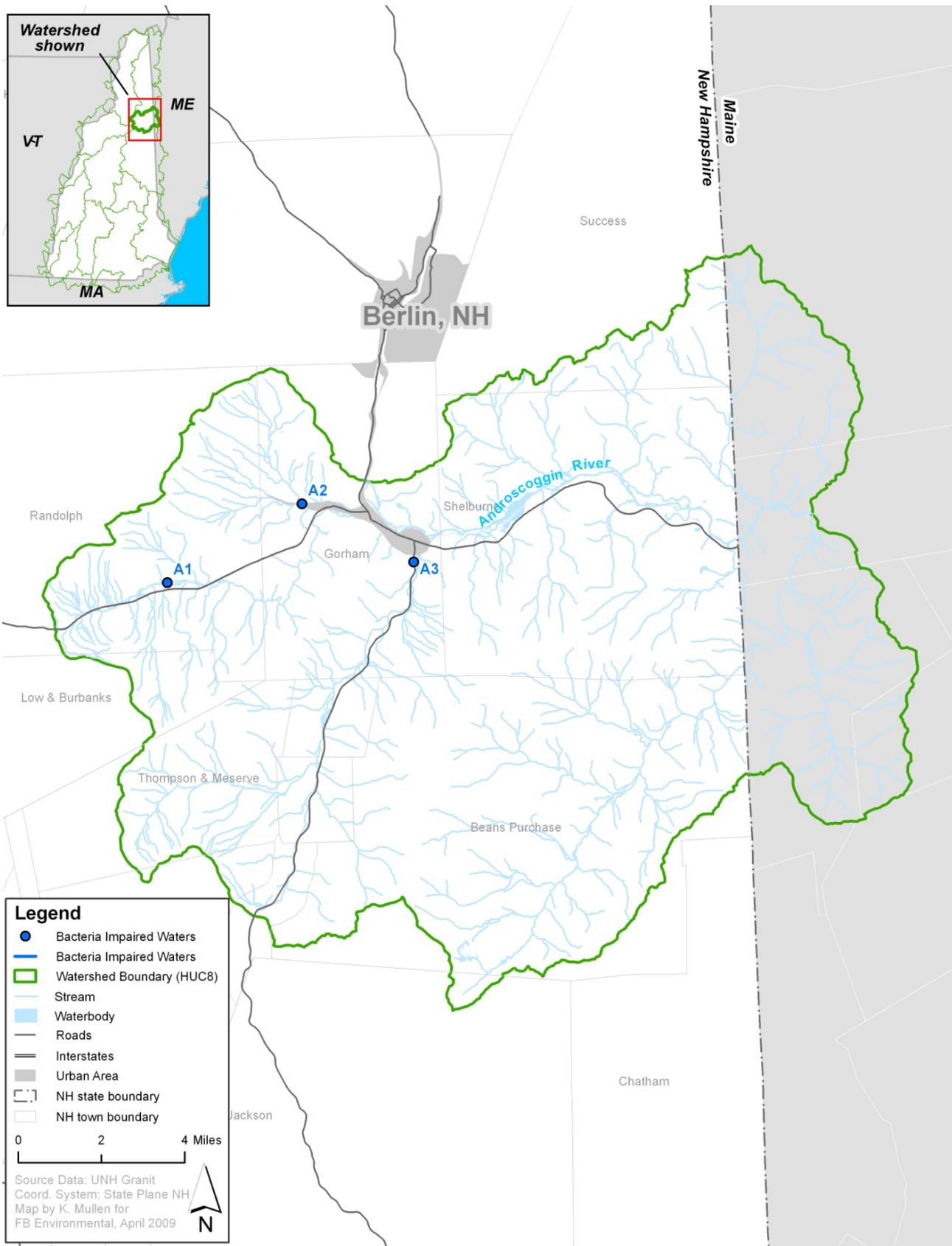


Figure 1: Bacteria-impaired waters in Lower Androscoggin River Watershed (segments labeled by table number)

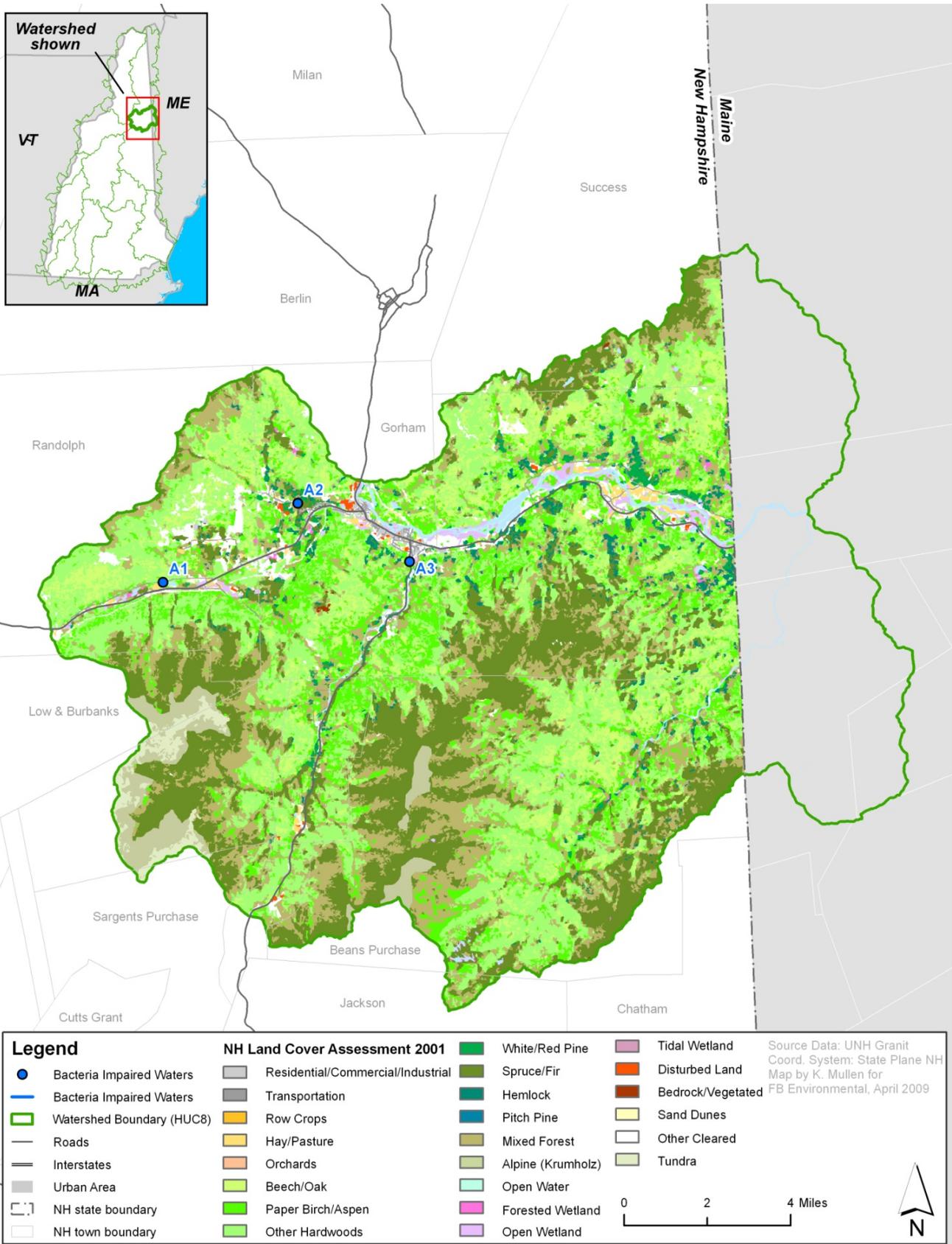


Figure 2: Land cover in Lower Androscoggin River Watershed with noted bacteria impaired water (segments labeled by table number)

II. WATER QUALITY DATA TABLES

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A 1: MOOSE BROOK – TOWN POOL – RAVINE BEACH

AUID: NHIMP400020101-01-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E. coli*

Water Quality Criteria & TMDL for *E. coli*:

Geometric mean: 47 CTS/100mL

Single sample: 88 CTS/100mL

Percent reduction to meet TMDL:

Geometric mean: *in compliance*

Single sample: 78%

Data: 2002 - 2007 (inclusive) from NH DES, 2008 TMDL cycle

Single sample <i>E. coli</i> results (CTS/100ML)						Geometric mean <i>E. coli</i> results (CTS/100ML)	
Station ID	Station Name	Date	Result	Wet/dry		Date	Result
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/24/02	* 6	dry		8/19/03	4.68
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/24/02	* 5	dry		8/3/04	1.68
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/9/03	* 4	dry		8/29/05	2.24
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/9/03	* 6	dry		8/2/06	45.0
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/19/03	* 2	no data		8/21/07	3.05
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/19/03	* 10	no data			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/6/04	* 2	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/6/04	* 2	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/3/04	* 1	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/3/04	* 2	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/20/05	* 2	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/20/05	* 4	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/9/05	* 1	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/9/05	* 1	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/29/05	* 8	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/29/05	* 2	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	6/26/06	* 400	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	6/26/06	* 310	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	6/28/06	* 24	dry			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	6/28/06	* 20	dry			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/18/06	* 8	no data			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/18/06	* 16	no data			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/2/06	* 46	no data			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/2/06	* 48	no data			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	7/5/07	* 10	no data			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	7/5/07	* 2	no data			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/1/07	* 2	no data			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/1/07	* 10	no data			
BCHTPRRANLF	MOOSE BROOK TOWN POOL-RA VINE-LEFT	8/21/07	* 2	no data			
BCHTPRRANRT	MOOSE BROOK TOWN POOL-RA VINE-RIGHT	8/21/07	* 1	no data			

Shaded cells indicate exceedance of water quality criteria

* During "critical period" defined as May 24 to Sept 15 (2008 NH CALM)

A 2: MOOSE BROOK – MOOSE BROOK STATE PARK BEACH

AUID: NHIMP400020101-02-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E. coli*

Water Quality Criteria & TMDL for *E. coli*:

Geometric mean: 47 CTS/100mL

Single sample: 88 CTS/100mL

Percent reduction to meet TMDL:

Geometric mean: 31%

Single sample: 60%

Data: 2002 - 2007 (inclusive) from NH DES, 2008 TMDL cycle

Single sample <i>E. coli</i> results (CTS/100ML)						Geometric mean <i>E. coli</i> results (CTS/100ML)	
Station ID	Station Name	Date	Result	Wet/dry		Date	Result
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/24/02	* 0	dry		8/21/07	4.26
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/24/02	* 2	dry		8/4/06	68.1
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/9/03	* 1	dry		8/29/05	4.67
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/9/03	* 3	dry		8/3/04	4.09
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/19/03	* 22	no data		8/19/03	6.17
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/19/03	* 22	no data			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/6/04	* 1	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/6/04	* 2	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/3/04	* 10	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/3/04	* 14	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/20/05	* 4	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/20/05	* 2	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/9/05	* 6	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/9/05	* 18	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/29/05	* 1	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/29/05	* 12	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	6/26/06	* 160	dry			
BCHMOBGORCR	MOOSE BROOK SP-CENTER	6/26/06	* 221	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	6/26/06	* 202	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	6/28/06	* 16	dry			
BCHMOBGORCR	MOOSE BROOK SP-CENTER	6/28/06	* 26	dry			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	6/28/06	* 28	dry			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/18/06	* 9	no data			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/18/06	* 56	no data			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/2/06	* 170	no data			
BCHMOBGORCR	MOOSE BROOK SP-CENTER	8/2/06	* 180	no data			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/2/06	* 180	no data			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/4/06	* 70	no data			
BCHMOBGORCR	MOOSE BROOK SP-CENTER	8/4/06	* 48	no data			
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/4/06	* 60	no data			
BCHMOBGORLF	MOOSE BROOK SP-LEFT	7/5/07	* 2	no data			

continued ...

Shaded cells indicate exceedance of water quality criteria

* During "critical period" defined as May 24 to Sept 15 (2008 NH CALM)

A 2: MOOSE BROOK – MOOSE BROOK STATE PARK BEACH (CONTINUED)

AUID: NHIMP400020101-02-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E. coli*

Water Quality Criteria & TMDL for *E. coli*:

Geometric mean: 47 CTS/100mL

Single sample: 88 CTS/100mL

Percent reduction to meet TMDL:

Geometric mean: 31%

Single sample: 60%

Data: 2002 - 2007 (inclusive) from NH DES, 2008 TMDL cycle

Single sample *E. coli* results (CTS/100ML)

Station ID	Station Name	Date	Result	Wet/dry
BCHMOBGORCR	MOOSE BROOK SP-CENTER	7/5/07	* 0	no data
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	7/5/07	* 2	no data
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/1/07	* 0	no data
BCHMOBGORCR	MOOSE BROOK SP-CENTER	8/1/07	* 6	no data
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/1/07	* 2	no data
BCHMOBGORLF	MOOSE BROOK SP-LEFT	8/21/07	* 4	no data
BCHMOBGORCR	MOOSE BROOK SP-CENTER	8/21/07	* 8	no data
BCHMOBGORRT	MOOSE BROOK SP-RIGHT	8/21/07	* 12	no data

Shaded cells indicate exceedance of water quality criteria

* During "critical period" defined as May 24 to Sept 15 (2008 NH CALM)

A 3: PEABODY RIVER – LIBBY TOWN POOL

AUID: NHLAK400020102-01

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E. coli*

Water Quality Criteria & TMDL for *E. coli*:

Geometric mean: 47 CTS/100mL

Single sample: 88 CTS/100mL

Percent reduction to meet TMDL

Geometric mean: *in compliance*

Single sample: 58%

Data: 1998 - 2007 (inclusive) from NH DES, 2008 TMDL cycle

Single sample <i>E. coli</i> results (CTS/100ML)						Geometric mean <i>E. coli</i> results (CTS/100ML)	
Station ID	Station Name	Date	Result	Wet/dry		Date	Result
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/17/98	* 14	dry		7/31/00	5.23
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/17/98	* 73	dry		8/19/03	4.23
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/17/98	* 4	dry		8/29/05	3.44
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/27/99	* 0	wet		8/4/06	12.7
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/27/99	* 3	wet		8/21/07	2.33
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/27/99	* 3	wet			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/7/00	* 0	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/31/00	* 6	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/31/00	* 5	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/31/00	* 5	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/6/01	* 200	wet			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/6/01	* 6	wet			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/6/01	* 2	wet			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/24/02	* 0	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/24/02	* 1	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/24/02	* 4	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/9/03	* 6	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/9/03	* 1	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/9/03	* 4	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/19/03	* 20	no data			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/19/03	* 6	no data			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/19/03	* 2	no data			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/20/05	* 14	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/20/05	* 5	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/20/05	* 8	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/9/05	* 4	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/9/05	* 6	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/9/05	* 1	dry			
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/29/05	* 1	dry			
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/29/05	* 1	dry			
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/29/05	* 0	dry			

continued ...

Shaded cells indicate exceedance of water quality criteria

* During "critical period" defined as May 24 to Sept 15 (2008 NH CALM)

A 3: PEABODY RIVER – LIBBY TOWN POOL (CONTINUED)

AUID: NHLAK400020102-01

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E. coli*

Water Quality Criteria & TMDL for *E. coli*:

Geometric mean: 47 CTS/100mL

Single sample: 88 CTS/100mL

Percent reduction to meet TMDL

Geometric mean: *in compliance*

Single sample: 58%

Data: 1998 - 2007 (inclusive) from NH DES, 2008 TMDL cycle

Single sample *E. coli* results (CTS/100ML)

Station ID	Station Name	Date		Result	Wet/dry
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	6/26/06	*	1	dry
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	6/26/06	*	32	dry
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	6/26/06	*	6	dry
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/18/06	*	6	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/18/06	*	2	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/18/06	*	8	no data
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/2/06	*	110	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/2/06	*	212	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/2/06	*	46	no data
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/4/06	*	14	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/4/06	*	4	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/4/06	*	16	no data
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	7/5/07	*	1	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	7/5/07	*	2	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	7/5/07	*	2	no data
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/1/07	*	4	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/1/07	*	4	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/1/07	*	2	no data
BCHLTPGORLF	PEABODY RIVER LIBBY TOWN POOL-LEFT	8/21/07	*	4	no data
BCHLTPGORCR	PEABODY RIVER LIBBY TOWN POOL-CENTER	8/21/07	*	4	no data
BCHLTPGORRT	PEABODY RIVER LIBBY TOWN POOL-RIGHT	8/21/07	*	1	no data

Shaded cells indicate exceedance of water quality criteria

* During "critical period" defined as May 24 to Sept 15 (2008 NH CALM)