

2003 Annual Report of Water Use versus Stream Flow on Designated Rivers

I. Introduction

Instream flow is one of the key protection measures provided under the Rivers Management and Protection Act (RSA 483). RSA 483 gives the Department of Environmental Services the authority and responsibility to maintain flow to support instream public uses in rivers that have been designated by the Legislature for special protection under the Act. In 2002, a broad coalition of New Hampshire business and conservation interests joined together to enact compromise legislation which became Chapter 278, Laws of 2002 (from House Bill 1449-A) that calls for a pilot program for instream flow protection. With the advice and input of the statewide Rivers Management Advisory Committee (RMAC), DES adopted Env-Ws 1900 known as the Instream Flow Rules (ISFR) effective May 29, 2003.

Env-Ws 1903.02 of the ISFR requires annual reporting of water use versus streamflow for the Designated Rivers. Please refer to <http://www.des.state.nh.us/rules/Env-Ws1900.pdf> to read a copy of these rules. The ISFR require the annual report to include:

- (1) An estimate of water use for each Affected Water User;
- (2) An estimate of aggregate water use at each withdrawal or return location;
- (3) An estimate of stream flow at each withdrawal or return location;
- (4) A record of the month(s) and location(s) not in compliance with the General Standard for Designated Rivers without established Protected Instream Flows under Env-Ws 1905;
- (5) A description of the WMPA [Water Management Planning Area] for Designated River(s) that are not in compliance with the General Standard; and
- (6) For each Designated River with protected instream flows established under Env-Ws 1905, a record of the date(s) and location(s) at which protected instream flows were not maintained.

Fourteen Designated Rivers were defined in the Rivers Management and Protection Act (RSA 483) in 2003 as shown in the map below. Of these fourteen rivers, the Contoocook and the Piscataquog include branches that are also Designated River segments. These branches require individual assessment that must be incorporated into the assessment of the main branch of the Designated River.

The ISFR require that “each designated river without established protected instream flows under Env-Ws 1905, estimate the month(s) and identify the location(s) not in compliance with the general standard.” No protected instream flows were established by 2003, so assessments were made using the General Standard. The General Standard is a reference tool for comparatively evaluating water use on the Designated Rivers. A river is not in compliance with the General Standard, as defined in Env-Ws 1903.02(c), if:

- (1) The average monthly aggregate water use exceeds 5 percent of 7Q10 when average monthly stream flow is less than or equal to 0.5 cfsm;
- (2) The average monthly aggregate water use exceeds 0.02 cfsm when average monthly stream flow is greater than 0.5 cfsm and less than or equal to 1.0 cfsm;

DESIGNATED RIVERS

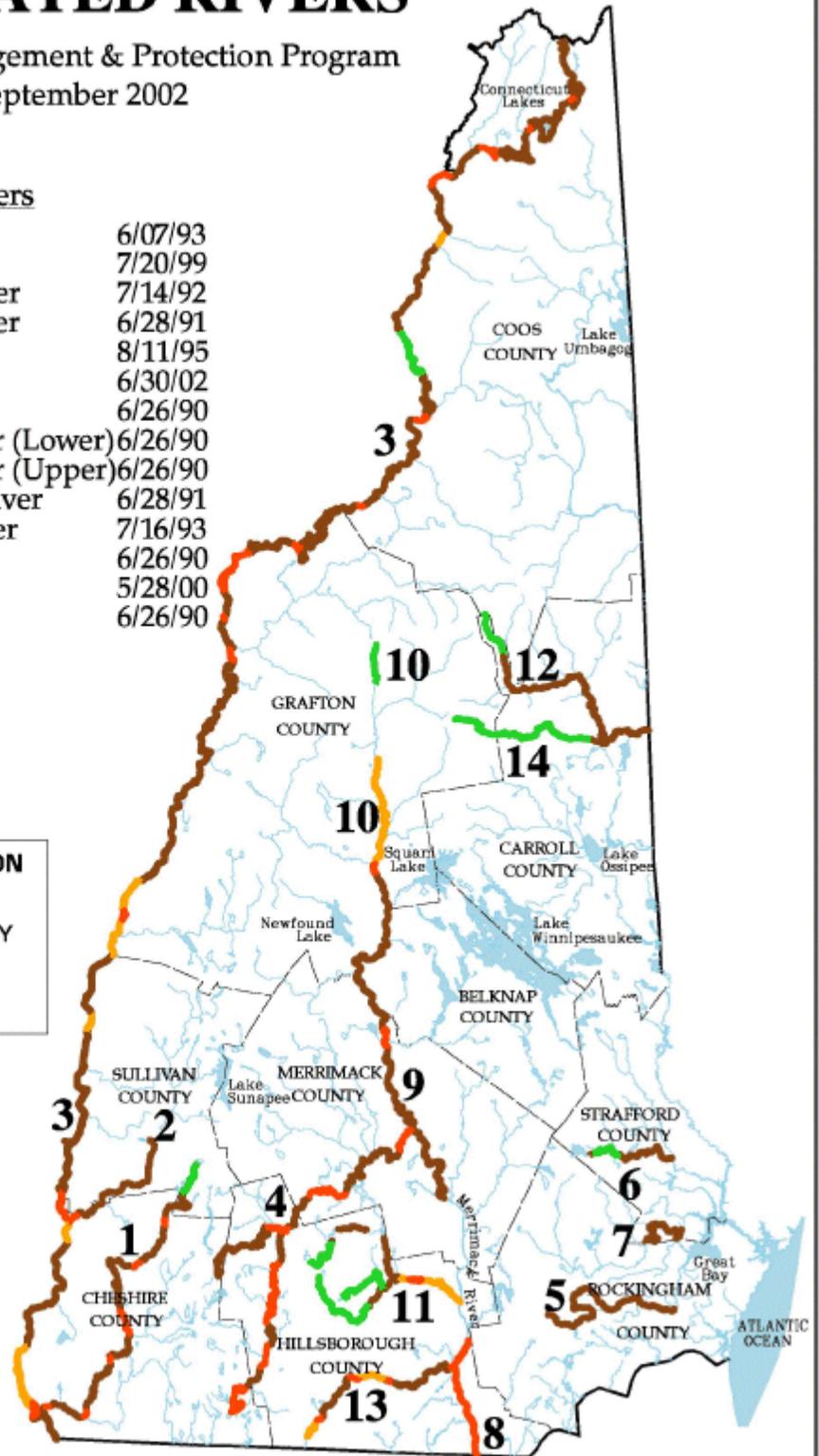
NH Rivers Management & Protection Program
September 2002

Designated Rivers

- | | | |
|-----|-------------------------|---------|
| 1. | Ashuelot River | 6/07/93 |
| 2. | Cold River | 7/20/99 |
| 3. | Connecticut River | 7/14/92 |
| 4. | Contoocook River | 6/28/91 |
| 5. | Exeter River | 8/11/95 |
| 6. | Isinglass River | 6/30/02 |
| 7. | Lamprey River | 6/26/90 |
| 8. | Merrimack River (Lower) | 6/26/90 |
| 9. | Merrimack River (Upper) | 6/26/90 |
| 10. | Pemigewasset River | 6/28/91 |
| 11. | Piscataquog River | 7/16/93 |
| 12. | Saco River | 6/26/90 |
| 13. | Souhegan River | 5/28/00 |
| 14. | Swift River | 6/26/90 |

RIVER CLASSIFICATION

- COMMUNITY
- RURAL-COMMUNITY
- RURAL
- NATURAL



NHDES Watershed Management Bureau

(3) The average monthly aggregate water use exceeds 0.04 cfsm when average monthly stream flow is greater than 1.0 cfsm and less than or equal to 4 cfsm; or

(4) The average monthly aggregate water use exceeds 0.16 cfsm when average monthly stream flow is greater than 4 cfsm.

This report includes individual Watershed Management Planning Area (WMPA) reports with the results of the assessment for each of the fourteen Designated Rivers and two reports for branches of Designated Rivers. Each WMPA report identifies the gages used, water users in the WMPA, and includes a narrative description of the times and locations where the General Standard was not met during 2003. The WMPA reports are divided into the following sections:

1) DR WMPA map showing the Watershed Management Planning Area for the Designated River with locations of stream flow gages and water use sources and discharges.

2) Table of Water Use - A listing of monthly water use in cfs by source and discharge for each AWU in the WMPA. These sources and discharges are sorted by the drainage areas of their impact points on the Designated River beginning at the most upstream point.

3) Table of Aggregate Water Use - Aggregate water use is estimated by summing all upstream water withdrawals(+) and returns(-) at each impact point.

4) Table of Estimated Monthly Stream Flow and General Standard - Monthly values for monthly streamflow and the General Standard are described as flow per unit area (cfsm) for the gages used in the assessment.

5) Table of Estimated Monthly General Standard at Each Impact Point - The gages' monthly values for the General Standard in cfsm are transposed to each impact point.

6) Table of Estimated Margin of Aggregate Water Use below the General Standard - At each impact point and for each month, the difference between the aggregate water use and the General Standard is determined. A negative value indicates that water use exceeds the General Standard at the impact point.

8) Graphs of incremental and aggregate water use versus the General Standard - Monthly graphs show the General Standard compared to the water use and aggregate water use at each impact point.