Water Withdrawal Reporting Program
2004-2005 Annual Report

to the
Joint Standing Committee on Natural Resources
of the
122nd Maine Legislature,
Second Regular Session

February 2, 2006

Submitted by
The Maine Department of Environmental Protection
Bureau of Land and Water Quality
17 State House Station
Augusta, Maine 04333-0017
(207)287-3901

Contents

Introduction and Highlights of the Past Year

This is the third annual report of the Water Withdrawal Reporting Program (WWRP). Maine's Water Withdrawal Reporting Program, which is found at Title 38, Sections 470-A through 470-H, requires water users who withdraw quantities in excess of the thresholds contained in the statute to provide information about their annual water withdrawals from public water resources. September 30, 2005, marked the end of the third "water year" subject to reporting under the Water Withdrawal Reporting Program. Reports of withdrawals made from October 1, 2004 to September 30, 2005 were to be submitted to DEP or the Department of Agriculture, Food and Rural Resources by December 1, 2005.

Perhaps the highlight of the past water year was the record setting precipitation experienced across the state. Precipitation levels provide an over-all measure of water availability, and this past year's record precipitation translated into high water levels in rivers, streams and lakes, and recharged groundwater levels. The record high precipitation levels also reduced some water uses, such as irrigation, which are primarily needed to supplement rainfall during dry periods. However, even with record setting conditions for the state as a whole some parts of the state did experience conditions, particularly in July and August, which required irrigation.

In March of 2005 the DEP posted draft water use rules on its Sustainable Water Use Rulemaking website, along with various studies and supporting materials. Presentations explaining the draft were given to interested groups and extensive public comments were received. A subsequent draft was posted on the website in October. The development of water use rules presents a particular challenge, as the implementation of the rule has the potential to affect existing water users as diverse as industrial uses, agricultural irrigation, and public water suppliers. The Department continues to work with other state agencies and stakeholders to fully understand the potential impacts of the proposed rule and to provide reasonable accommodation for existing activities through planning and implementation before commencing the formal rulemaking process with the Board of Environmental Protection.

In 2005 Maine voters approved an environmental bond which included one million dollars to continue the Department of Agriculture's Sustainable Water Source Development Cost Share Program. The funds should assist an additional 50 farms in the next two years. The Department of Agriculture also continued to provide technical assistance to farmers for development of water management plans. One of the main successes of the year was the publishing of a guide for irrigation development and use. This guide will help prospective irrigators and existing irrigators better manage their water sources. The guide was a collaborative effort with many groups, but primarily is the work of the Central Aroostook Soil and Water Conservation District.

Also in 2005, the bottled water industry in Maine continued to make the news. While the Department of Health and Human Services Drinking Water Program (DWP) reported receiving five new applications for Bulk Water Transport permits related to proposals for groundwater extraction for bottled water operations, a citizens group mounted an unsuccessful attempt to place a bottled water tax on next year's ballot. Meanwhile the Maine Geological Survey launched a review of Maine's groundwater regulations as directed by legislature last year in LD 1643, enacted as Public Law chapter 452.

Goals for the Coming Year

In 2006 the DEP will be moving the proposed water use rules through the formal rulemaking process for provisional adoption by the Board of Environmental Protection. The rules will then be submitted to the Joint Standing Committee on Natural Resources in January of 2007 for adoption as major substantive rules.

The DEP will also be partnering with the US Geological Survey to launch a Southern Maine low-flow study which will develop regression equations to estimate flow statistics, including August median streamflow, at any ungaged, unregulated small drainage basin in Southern Maine. This study will address a serious gap in our ability to estimate low flows on a regional basis across the state.

The DEP will continue to work with other state and federal agencies and water users to gain a greater understanding of water use in Maine. Water use data from many types of users (forestry, industrial, and recreational) is being collected, and a concerted effort is being made to expand compliance with the water use reporting requirements. In the coming year we will continue to study two river watersheds which have been identified as potentially stressed by multiple water uses, the Prestile Stream and the Kenduskeag Stream.

Water Availability Data

There are a number of on-going efforts to provide water availability data in Maine. The U.S. Geological Survey (USGS), together with the National Weather Service and the Maine Geological Survey, tracks precipitation, snow pack, groundwater levels, and stream flow conditions at a limited number of sites throughout the State. The USGS, in cooperation with State agencies, has been working to provide better tools to estimate site-specific water availability. To better estimate stream flows in ungaged streams, the USGS has used data from sites where they have operated stream gages for many years to develop regression equations that can be used to estimate the monthly median flow at an ungaged site based on the area of the drainage basin above the point on the river or stream, the mean annual rainfall, how much sand and gravel aquifer is present in the drainage basin, and other factors. These equations are now available for large drainage basins throughout the state, and for small drainage basins in Aroostook County and Downeast. In 2006 DEP will be partnering with USGS to launch a low-flow study for small drainage basins in Southern Maine.

Significant sand and gravel aquifers are capable of yielding 10 gallons per minute or more of water to a well. In many parts of the state they are drawn on heavily for municipal and industrial water supplies. Where they are available in agricultural areas, they are used for irrigation. Furthermore, the percentage of a watershed that is underlain with sand and gravel aquifers is a significant factor in determining low-flow conditions in streams. Because of their value as water resources and concerns for maintaining water quality, the Maine Geological Survey has been directed to map these aquifers statewide. This mapping effort provides a valuable basic data layer for analysis of numerous water resource issues.

In 2004, the Maine Geological Survey completed mapping of significant sand and gravel aquifers for all organized towns in Maine. In 2005, MGS began mapping significant sand and gravel aquifers in Maine's unorganized towns in western Aroostook and northern Piscataquis Counties. The primary mapping area was west of the towns of Ashland/Portage, in the areas around the St John's and Allagash River watersheds. The plan is to continue mapping these sand and gravel aquifers within Maine's unorganized areas, until full aquifer coverage is obtained for the state.

Summary of water resources conditions for the period October 2004 to October 2005

Wet…. very wet…. very, very, wet is the only way to describe the period from October 2004 through October 2005.

As shown in Figure 1 below, precipitation was above normal everywhere in the state, ranging from slightly over 2 inches above normal in northern Somerset County to over 28 inches above normal in Brunswick (Cumberland County).

Although Maine experienced significant drought conditions several years ago (2001-2002), the U.S. Department of Agriculture's drought monitor did not show Maine to be in a state of drought for any period in the 2005 water year (see Figure 2 below).

Ground-water levels and surface-water runoff also reflected the higher-than-normal precipitation Maine experienced last year, with only scattered instances of low or very low ground water levels or surface water runoff (see Figures 3 and 4 below).

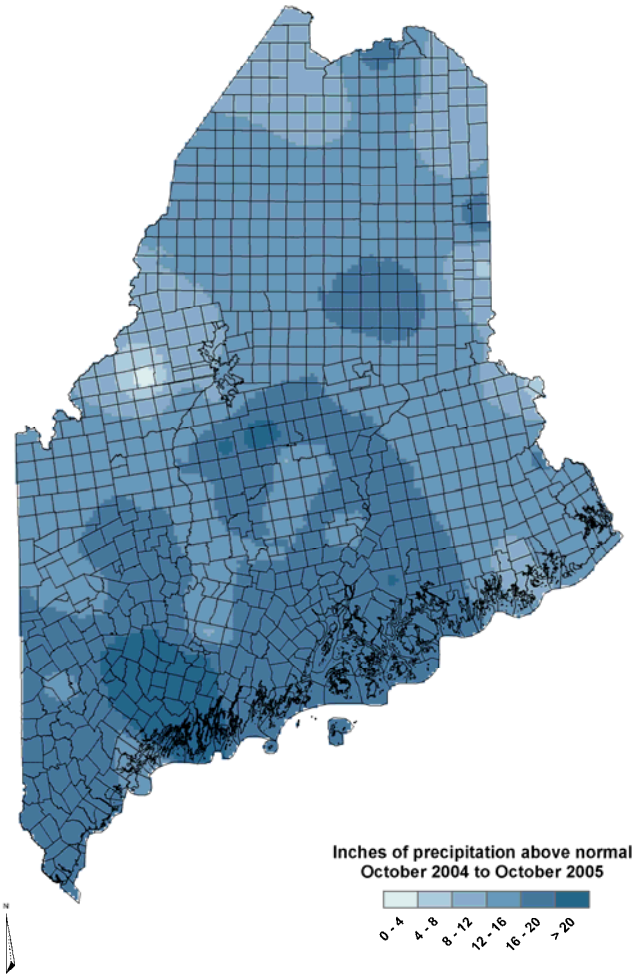


Figure 1: Precipitation Conditions

Inches of precipitation above normal for the period October 2004 through October 2005

Data from National Weather Service stations and the National Weather Service cooperative observer network

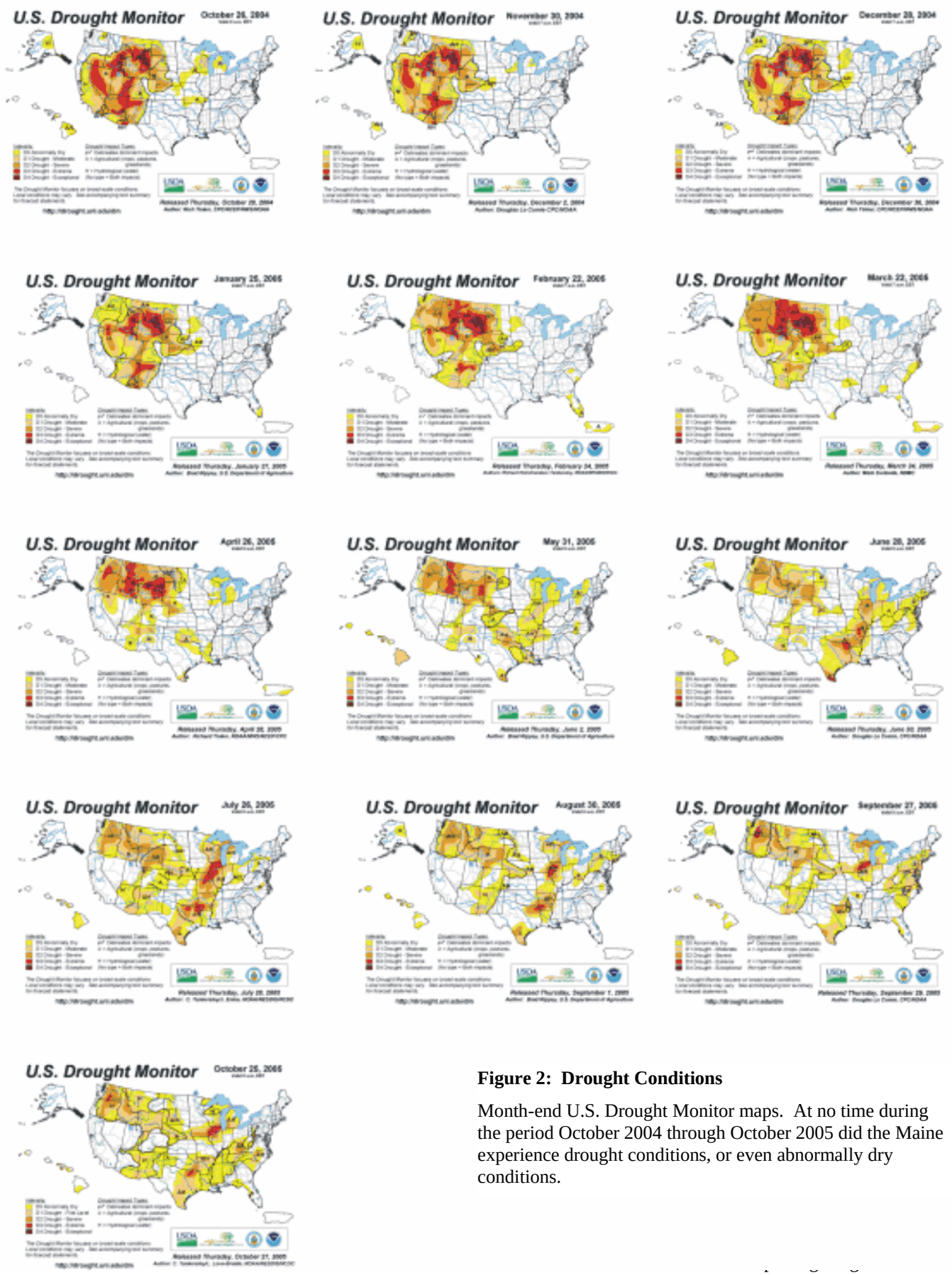


Figure 2: Drought Conditions

Month-end U.S. Drought Monitor maps. At no time during the period October 2004 through October 2005 did the Maine experience drought conditions, or even abnormally dry conditions.

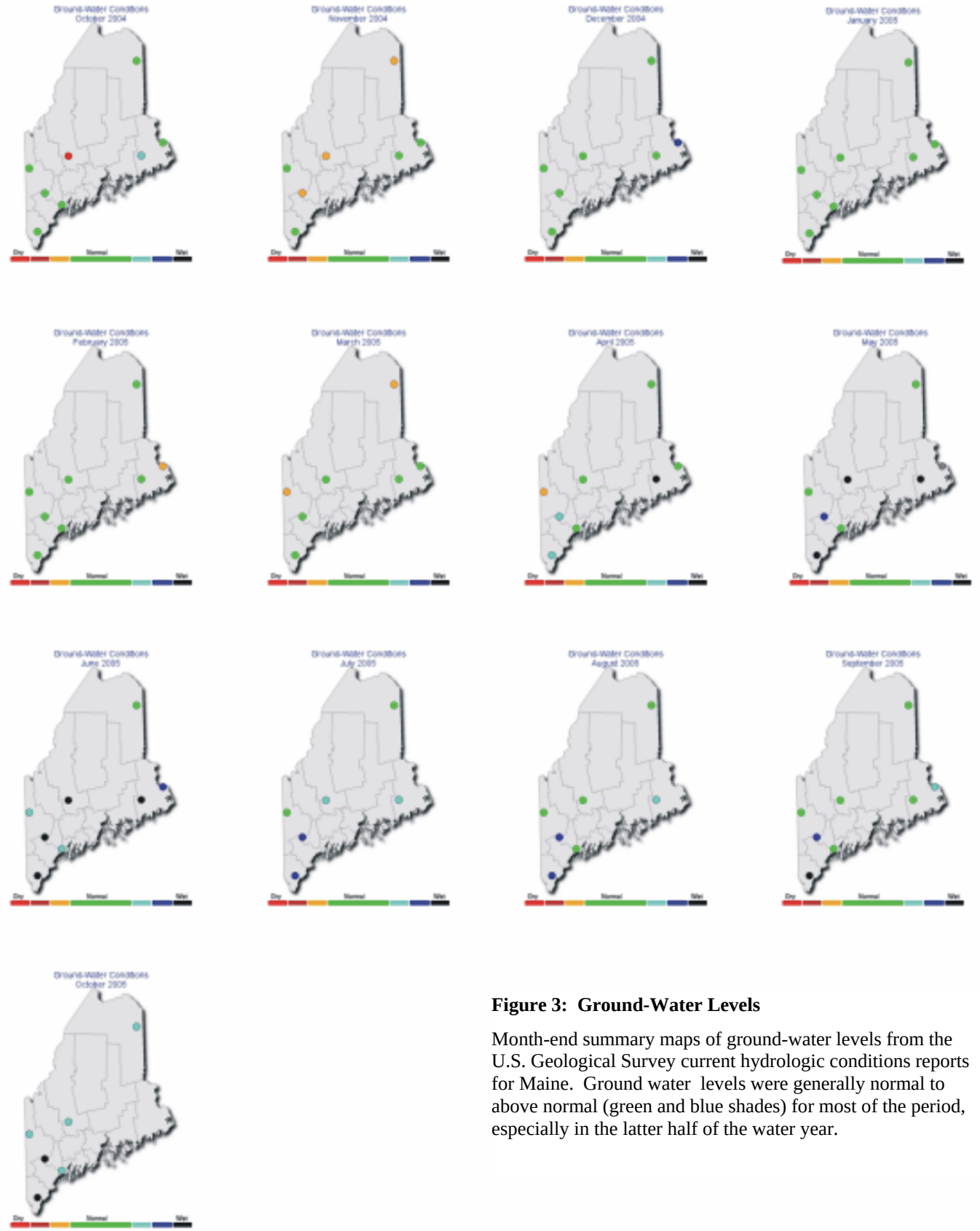


Figure 3: Ground-Water Levels

Month-end summary maps of ground-water levels from the U.S. Geological Survey current hydrologic conditions reports for Maine. Ground water levels were generally normal to above normal (green and blue shades) for most of the period, especially in the latter half of the water year.

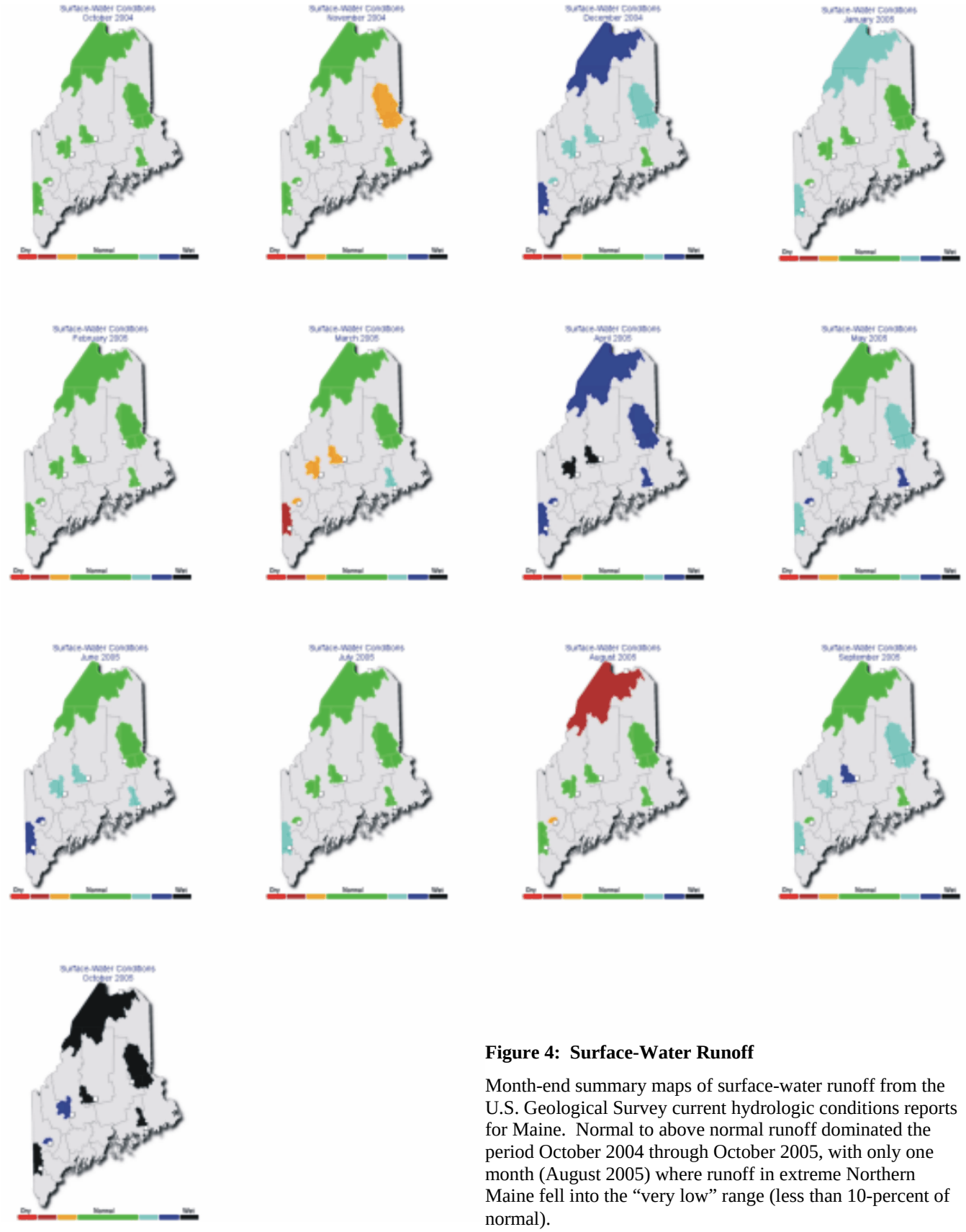


Figure 4: Surface-Water Runoff

Month-end summary maps of surface-water runoff from the U.S. Geological Survey current hydrologic conditions reports for Maine. Normal to above normal runoff dominated the period October 2004 through October 2005, with only one month (August 2005) where runoff in extreme Northern Maine fell into the "very low" range (less than 10-percent of normal).

Conditions Observed by the Maine Drinking Water Program

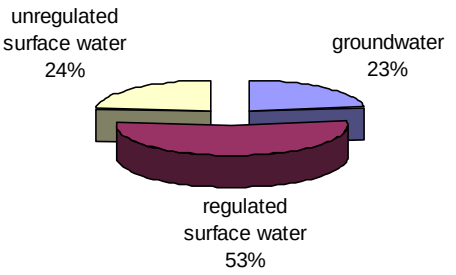
The Department of Health and Human Services Drinking Water Program (DWP) reports that public water supplies observed conditions in 2005 that continued a trend of generally normal water availability. The easing of the drought in 2003 reduced the number of systems that had to seek supplemental sources or restrict water use significantly.

A significant portion of the water use for large public water systems is for commercial and industrial uses which can represent a substantial component of local economies. An adequate supply of high quality water is important to these industries. Domestic drinking and sanitary water represent the largest portion of the use in most of the smaller systems.

A number of coastal public water systems annually experience late-summer demand peaks, which coincide with seasonal ground and surface water lows. Despite the above average precipitation this year, conservation was still required in some communities. These systems continue to work to develop supplemental sources. This is often difficult along Maine's rocky coast and can be complicated by regulatory constraints.

As a part of inter-agency coordination on the DEP's water use rulemaking effort, the Drinking Water Program has been reviewing the adequacy of Public Water Supply (PWS) sources. Three quarters of all PWS surface water withdrawals, by volume, are from sources where the levels and flows are regulated by existing programs and permits. More than 20% of all PWS reported withdrawals are from groundwater sources. Of the total withdrawn by Public Water Supplies, less than 25% is from surface sources with no current water level or flow regulation (see Figure 5, below). The DWP found that all Public Water Systems withdraw water at a rate that has been shown over the years to be sustainable. Most large systems utilize a very small fraction of their source's potential yield. In all cases, the withdrawals are less than the estimated sustainable yield of the water body.

FIGURE 5: WHERE PUBLIC WATER SYSTEMS OBTAIN THEIR SUPPLIES



percent of use by volume

Conditions Observed by the Maine Department of Agriculture, Food and Rural Resources

Despite the record precipitation in the past year, the Department of Agriculture reports that agricultural drought continues to be the number one farm production risk. Soil moisture levels in some areas of Aroostook County and Southern Maine in mid-to-late summer created dry enough conditions that some crops suffered and limited irrigation occurred. All other areas of the state received adequate rainfall and therefore little irrigation was required.

The following are the agricultural regions in Maine and their major reasons for needing irrigation.

DownEast: Maintain consistent wild blueberry yields and quality. Value of irrigation for frost control, first year growth, and consistent year-to-year yields. The majority of high quality acreage will need to be irrigated.

Aroostook County: Preserve high quality processing market for potatoes. A 35% increase in irrigated acreage is necessary.

Central Maine: Preserve high quality processing market for chipping potatoes. All potato acreage will need to be irrigated.

Southern Maine: Saving farmland in a high development region will become critical. Only irrigated acreage of high value crops will be profitable in the future.

Water Withdrawal Data

Figure 6: Reported Water Withdrawals by Type			
Type of Use	**Withdrawals Reported (gallons)**		
	2003	**2004**	**2005**
Water Utilities	33.8 billion	34.4 billion	33.5 billion
Paper Mills	70 billion	66 billion	63 billion
Agriculture	861 million	719 million	622 million
Snow Making	590 million	559 million	606 million
Bottled Water	365 million	448 million	440 million

Public Water Supplies

There are approximately 2,000 Public Water Systems (PWS) in Maine, of these, 400 are community water systems with 25 or more users. Data for these systems, including location, source, and population served, is maintained in a GIS database by the Department of Health & Human Services, Division of Health Engineering as part of their Drinking Water Program.

Production/consumption data for 151 of the larger water utilities comes from an existing reporting program of the Public Utilities Commission (PUC). The water utilities report to the PUC on an annual (Jan. - Dec.) basis, with data due by April of the following year. The production/ withdrawal data is broken down into monthly segments, and is also further divided into source, either ground-water or surface water. For calendar year 2004, there were 151 water utilities and of those, 106 have reported to the PUC. Of those reporting, annual production for 2004 was 33.5 billion gallons, or 2.8 billion gallons a month, or 92 million gallons per day. Residential consumption was 11.3 billion gallons, or 33.7% of the total. As noted elsewhere, 23% of Maine's Public Water Systems obtain their water from groundwater, and 77% from surface water.

Bottled Water

There were 31 Maine bottled water facilities, either proposed or operational, in 2004. Of these, 18 actually produced bottled water during 2004. Total bottled water production for 2004 was 440 million gallons, or 37 million gallons per month. This represented a slight decrease from 2003 when total production was 448 million gallons.

The Bulk Water Transport permitting program administered by the DWP showed a significant surge of activity. Prior to this year there were eleven existing bulk water transport permits, which are valid for three years. This year the program received five additional permit applications for new bulk water transport operations. These are generally for the collection of spring water and transport to a bottling plant. If the source wishes to be labeled as spring water, it is required to meet the U.S. Food and Drug Administration's definition, which includes a provision that the extraction cannot cause the spring to cease flowing or change its chemistry. Permits are reviewed by the DWP, MGS, DEP, and the Public Utilities Commission (PUC), for their compliance with applicable laws and environmental impact.

Agricultural Water Use

In 2005, natural rainfall limited the need for irrigation. In general, the number of irrigations declined this year, due to the very substantial rainfall in the spring and early summer. The amount of water used also declined compared to 2004, to approximately 622 million gallons. Blueberry irrigation in Washington County is still the highest user of water in the agricultural sector. Large dairy operations in Kennebec County still account for the majority of water used in that county while turf operations still account for the majority of use in York, Oxford and Cumberland counties. The greatest use of water for irrigation occurs in the months of July and August. Some water is also used in May for frost control, and in November and December for cranberry flooding.

Figure 7: Agricultural Water Use Reported

	Gallons Used		
County	**2005**	**2004**	**2003**
Washington	558,124,014	549,439,022	581,965,980
Kennebec		105,136,500	27,760,122
York		48,455,600	77,547,100
Aroostook	37,542,431	8,693,100	69,615,943
Oxford	16,788,000	4,800,000	7,554,094
Cumberland		2,137,200	49,486,200
Franklin	584,410	683,760	377,730
Penobscot			23,004,000
Androscoggin	8,848,000		14,502,796
Lincoln			8,116,000
Sagadahoc			462,500
Waldo			445,350
Somerset			251,000
Hancock			128,000
Total All Counties	**621,886,855**	**719,345,182**	**861,216,815**

Golf Courses

In 2005, to determine the extent of water usage by an industry sector that had little existing information, reporting forms were sent out to golf courses across the state. There are over 100 golf courses in Maine, many of which irrigate to maintain their greens and fairways. The DEP now has water use information on 80 golf courses. The average acreage size of the courses reporting is 103 acres, with a maximum total water usage of 8.8 million gallons per week for the 44 golf courses reporting water volumes. This calculates out to an average maximum usage of 44,364 gallons per week for 9 hole courses and 265,468 gallons per week for 18 hole golf courses. These levels would only be reached when irrigation was occurring throughout a course, on both fairways and greens. Many courses irrigate only their greens, which requires much less water on a regular basis.

Based on the data obtained, most golf courses are exempt from the Water Withdrawal Reporting Program due to their water source, such as man-made ponds, large lakes, and even in a few cases

municipal water utilities. Only a relative few courses have the potential to generate reportable withdrawals under heavy irrigation conditions, when fairways and greens are being irrigated. During a summer with abundant natural precipitation such as 2005, there appear to have been no reportable withdrawals at golf courses.

Commercial and Industrial Uses

As noted last year, many commercial and industrial facilities are exempt from the reporting requirements of the WWRP. Many are exempt because they receive their water from a public water system. Others are exempt because they are located on Maine's larger rivers, and their daily withdrawals are less than one-percent of 7Q10 at the point of withdrawal. This reflects the fact that availability of an abundant, dependable water supply has long been a siting criteria for some of Maine's most important industries. Other major water users, such as Maine's pulp and paper manufacturers, do not report directly to the WWRP because they report their waste water discharges to the DEP and the volume of withdrawal can be calculated from the discharge volume. Analysis of waste water discharge volumes from ten paper mills indicates that they used approximately 63 billion gallons of water in 2005. This is down from approximately 66 billion gallons in 2003, due largely to water conservation efforts. Most of this water is discharged back to the rivers after use and treatment.

Other Water Users

Water use data from many other sources are collected and compiled in Maine's Water Use Database, demonstrating the varying types and amounts of water use taking place in Maine.

Of the total 18 Maine ski areas and snow tube parks, 16 had snowmaking capabilities during the 2004 - 2005 ski season. These 16 ski areas derive their water supplies from multiple sources: ponds, wells, streams, and rivers. Data is collected on both an annual (Jan. - Dec.) and ski season (Nov. - Mar.) basis. Of the five ski areas reporting, a total volume of 606 million gallons of water was used for snowmaking for the winter ski season of 2004 - 2005. This is up from the 590 million gallons reported by six areas in 2003-2004.

Watersheds Potentially at Risk from Multiple Water Withdrawals

This year an attempt was made to look at watersheds with multiple water users, and determine if actual water use exceeded thresholds being considered in the draft water use rules for defining watersheds at risk from multiple water withdrawals. Two river watersheds with multiple withdrawals were selected to study the application of possible thresholds for Class A waters and Class B or C waters. One lake watershed, Schoodic Lake, was selected to review the application to GPA waters and that study is summarized separately below.

Preliminary Analysis of Prestile Stream and Kenduskeag Stream

The first river watershed selected was the Prestile Stream in the Mars Hill area (Class A), where both agricultural irrigation and public water supply use occur. The other river watershed selected was the Kenduskeag Stream (Class B/C), in Penobscot County, where agricultural irrigation and golf course irrigation use occur. The possible thresholds under consideration for rivers and streams at risk are:

Class AA Watersheds which have withdrawals with capacity that, individually or in combination, amount to 10% or more of any seasonal median when withdrawal is intended.

Class A Watersheds which have withdrawals with capacity that, individually or in combination, amount to 10% or more of any seasonal median when withdrawal is intended.

Class B/C Watersheds which have withdrawals with capacity that, individually or in combination, amount to 20% or more of any seasonal median when withdrawal is intended.

(Note: These are only the threshold values to define streams at risk for planning purposes as required in 38 M.R.S.A. 470-H. These do not constitute the allowable withdrawals, which are expected to exceed these values.)

Drainage basin areas, mean elevations, distance from coast, and percent aquifers were calculated for the two selected river watersheds. These values were then used to calculate seasonal median stream flow for the two basins at or below the furthest downstream extraction location. Both the Prestile Stream and Kenduskeag Stream drainage basin areas were approximately 69 sq mi in area, so seasonal withdrawal threshold equations from the USGS for basins greater than 10 acres were used to calculate the median flows. See Figure 8 below.

For the Class A Prestile Stream, 10% of the August monthly median was used as the comparative threshold, and for the Class B/C Kenduskeag Stream 20% of August median was used. These results were then compared to actual cumulative water use numbers collected from Maine's Water Use Reporting Program. Since there are still gaps in the water use data collected under the reporting program, the comparisons give only a broad generalized look at the application of the thresholds. A more accurate determination would require further study to identify exempt or otherwise unreported withdrawals.

Figure 8: Prestile Stream and Kenduskeag Stream

Prestile Stream (Class A)

Seasonal Time Frame	Median(Cfs)	10% of Median Cfs	10% of Median Gpd	Maximum Withdrawal * Gpd
July 1 to Sept 15	18.42	1.84	1,190,259	250,157
Sept 16 to March 15	36.83	3.68	2,380,518	250,157
March 16 to May 15	73.66	7.37	4,761,036	250,157
May 16 to June 30	36.83	3.68	2,380,518	250,157

Kenduskeag Stream (Class B/C)

Seasonal Time Frame	Median(Cfs)	20% of Median Cfs	20% of Median Gpd	Maximum Withdrawal * Gpd
July 1 to Sept 15	18.66	3.73	2,412,379	700,000
Sept 16 to March 15	37.33	7.47	4,824,758	700,000
March 16 to May 15	74.65	14.93	9,649,515	700,000
May 16 to June 30	37.33	7.47	4,824,758	700,000

*= Actual water use numbers plus estimated averages of water use by golf courses and irrigators where we have no collected data.

Cfs = Cubic feet per second

Gpd = Gallons per day

The estimated/calculated average daily water use never exceeded the 10% threshold for Prestile Stream or the 20% threshold for Kenduskeag Stream, and actually was much less for both streams, even during the lowest flow period of July 1 to September 15. So based on these thresholds, there would appear to be no risk of over-withdrawal. This suggests either that these watersheds are not at risk, or that the risk threshold under consideration is inappropriate.

However, further study of these watersheds will be necessary to assess the level of risk actually present. It must be noted that the maximum withdrawal numbers shown may not represent all withdrawals in the watershed due to exempt or otherwise unreported withdrawals. Furthermore, the withdrawal point from which the basin area is calculated is the farthest downstream, which maximizes the basin area, producing higher seasonal flow numbers and possibly overestimating available flows. If more water use numbers and accurate withdrawal location were obtainable for these basins, it would lead to a more accurate risk assessment.

Though other multiple water use basins may exist, it should also be noted that small drainage basins with a single large withdrawal are probably more common in Maine and can present just as much of a risk . To address the small basin risk assessment properly, evaluation needs to be performed basin-by-basin. This process has been begun, but will require much more work.

In 2005, the Maine Geological Survey continued to delineate and calculate drainage basin areas on an as-needed basis for Public Water Suppliers within Maine, agricultural water users, and industry. These numbers are an integral part of the USGS's withdrawal threshold equations, both for small and large basins in Maine.

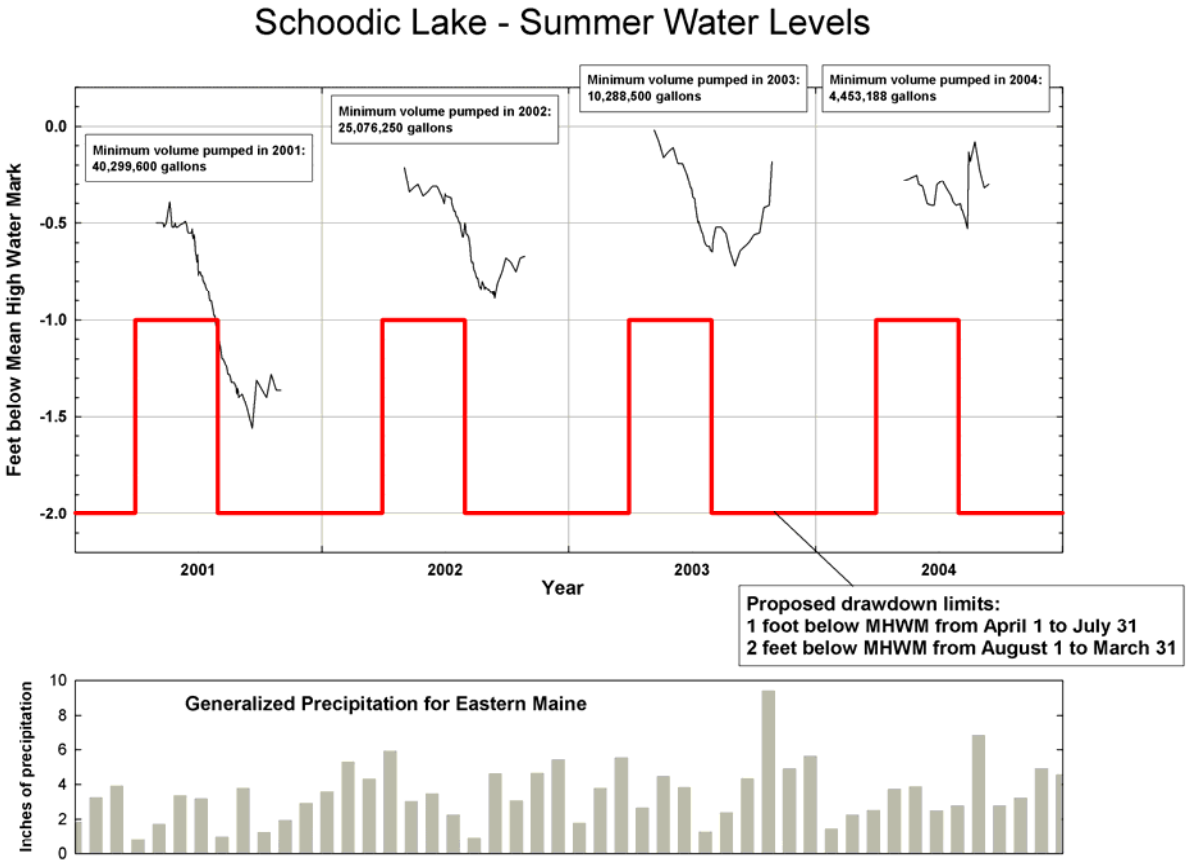
Impact of Multiple Withdrawals on Schoodic Lake Water Levels

Schoodic Lake has been used as an irrigation water source by several blueberry growers in Washington County. The lake is recharged by direct precipitation and ground water flow from a relatively small drainage basin. As a result, it is a good candidate to evaluate the impact of multiple withdrawals on lake water levels and whether past withdrawals have exceeded the proposed lake level limits.

The upper graph in Figure 9 below shows lake level relative to the mean high water mark (MHWM) for the summers of 2001 through 2004. Cherryfield Foods is required to measure the lake level as condition for their water withdrawal permit from the Land Use Regulation Commission. Lake levels were measured for several weeks prior to when withdrawals started, during the period of active withdrawal, and for several weeks after pumping stopped. The red lines are the proposed drawdown limits in the DEP's draft rules for a lake with a natural outlet: 1 foot below MHWM from April 1 through July 31, and 2 feet below MHWM from August 1 through March 31.

The lower bar graph is generalized precipitation for eastern Maine for the years 2001 through 2004. The data come from various National Weather Service stations and cooperators. The purpose of the graph is to show the generally higher precipitation in 2003 and 2004 as Maine came out a period of moderate to severe drought experienced in 2001 and 2002.

Figure 9:



From these graphs we can see that Schoodic Lake water levels have been in compliance with the standard proposed in the DEP's draft water use rules. The draft rules also contain a threshold for defining lake watersheds most at risk from cumulative withdrawals. The proposed threshold for Class GPA waters most at risk is as follows:

> Class GPA Waters which have consumptive withdrawals with capacity that, in combination, amount to 80% or more of the available water as provided by the standard alteration.

To determine if Schoodic Lake falls into this category we first calculate the volume of one foot of water across the surface of the lake, then multiply this number by 325,851 gallons per acre foot to find the volume of the top foot of the lake. With a surface area of 882 acres, this gives us 287 million gallons. Then looking at the available data on water withdrawals from Schoodic Lake we find that the highest reported withdrawals occurred in 2003 when approximately 23 million gallons were reported for the entire irrigation season, from May to September. These reported withdrawals would amount to eight percent of the water available in April through July, and four percent of the water available for the entire irrigation season. So just based on these figures we can find either that this lake is not at risk, or that the risk threshold under consideration is inappropriate. However, further study would be necessary to assess the level of risk actually present.

It must be noted that the maximum withdrawal numbers used may not represent all the actual withdrawals from the lake, as some withdrawals may be exempt or otherwise unreported. If more water use data were obtainable for this basin, it would lead to a more accurate risk assessment.

Sustainable Water Use Rulemaking

In March of 2005 the DEP released draft rules in response to Title 38, Section 470-H. This statute directs the Department to develop water use standards for maintaining in-stream flows and lake or pond water levels that are protective of aquatic life and other uses and that establish criteria for designating watersheds most at risk from cumulative water use. 470-H also requires these standards to be based on the natural variation of flows and water levels, allowing variances if use will still be protective of water quality within that classification.

With the release of the March draft, a new webpage was established to provide access to the draft as well as various supporting and explanatory materials. Over the past year that website has continued to be updated and expanded with additional materials relating to the proposed rules. That webpage can be found at: http://www.maine.gov/dep/blwq/topic/flow/index.htm

In the two-year process of developing the draft rules, the Department worked closely with other interested state agencies, including the Department of Agriculture, the Department of Health & Human Services Drinking Water Program, the Department of Inland Fisheries and Wildlife, and the Department of Conservation, Land Use Regulatory Commission and Maine Geological Survey. The DEP also relied on recent work done by the US Geological Survey.

Recognizing the complexity of this issue and the many interested parties across the state, the March 2005 draft was released for public comment before the beginning of formal rulemaking. The Department was particularly hoping that those having experience with these issues would submit technical comments that would assist us in improving the draft. In fact over a hundred pages of comments were received from stakeholders involved in various water dependant industries as well as from environmental organizations and state and federal agencies.

The DEP also developed a presentation to explain the draft rule and DEP staff delivered this presentation to various interested groups across the state. This presentation was also delivered to the Board of Environmental Protection on September 8, 2005, and can be downloaded from the Sustainable Water Use Rulemaking webpage at the address noted above.

Since last summer the Department has been considering the comments received from the public, and making appropriate changes to the draft document. A second draft was prepared and made available on the Sustainable Water Use Rulemaking webpage in October.

These proposed rules would be major substantive rules as defined in Title 5, chapter 375, subchapter II-A. These means that after being provisionally adopted by the BEP they will be submitted for consideration to the joint standing committee of the Legislature having jurisdiction over natural resources matters next winter.

Agricultural Water Source Development Cost Share Program

The Department of Agriculture is continuing to help farmers put in new sustainable water sources. Bond funds from 2002 and 2003 have provided 75% cost share up to $60,000 to fund new wells or ponds. Currently the Department has distributed just over $1.9 million dollars for over 94 projects located throughout the state. Over 4000 acres of farmland will be protected from drought, representing about 12 million dollars in annual crop value.

A substantial number of these projects have helped farmers reduce use of streams by building ponds or wells. Forty-seven (47) farms have reduced use of direct withdrawals by putting in a new pond or well, while 18 farms have eliminated use of streams altogether.

The continued bond funding for the cost share program for new source development is of highest priority. In 2005 the voters authorized an additional one million dollar bond to help continue this program. The funds should assist an additional 50 farms in the next two years.

As an example of the new sources helping reduce surface water use, the picture above is of a pond completed this summer at Flaherty's Family Farm in Scarborough. This pond is approximately one acre and holds about 3 million gallons of water. The pond will provide up to 9 irrigations per summer for approximately 15 acres of high value corn and vegetables. Mr. Flaherty started the pond project in 1996 with the local NRCS office. He needed to irrigate and the small brook on the property was not adequate to provide the water he needed in August. He also faced the prospect of new low-flow regulations further limiting his ability to withdraw from the stream. Mr. Flaherty felt that if he could not get a pond for this field, it would be too risky to put crops on it, and it would have to be sold for development.

Mr. Flaherty did his site planning and, because of some wetlands and nearness to a stream, it took a number of years to get the required permits from the Army Corps of Engineers and DEP. NRCS technical assistance was very helpful in designing the pond and working with the federal agencies. By June of 2003 Mr. Flaherty was ready to go. He received a $57,000 grant from the

Department of Agriculture to help cost share the total cost of about $104,000. Spread over 20 years, the cost of the project represents an investment of about $353 per acre per year. With gross corn returns per acre of around $7,000, the investment is only 5% of the gross. Now, with the drought risk eliminated, he can look forward to many years of profitable crops on this land. The state can now look forward to another piece of farmland being protected, not by the cost of a conservation easement, but by keeping the land profitable for farming. And the environment will be a winner too, as Flaherty's Family Farm will not dry up the stream in August.