

**Factual and Policy Basis of  
Chapter 587 - In-stream Flow and Water Level Standards  
(prepared by the Department of Environmental Protection)**

This rule establishes stream flow and lake water level standards and defines, clarifies and quantifies key elements of 38 M.R.S.A. § 470-H including establishment of flows and water levels protective of all uses, in particular aquatic life use. The rule is based on maintaining natural variation of flow and water level, and provides for variation from the natural condition where water quality, including designated uses and characteristics of each freshwater class, is protected (note that agriculture becomes a designated use in 38 M.R.S.A. § 465, 465-A contingent upon passage of this rule as provided in 38 M.R.S.A. § 470-H). The statute was a product of considerable discussions by an assembled stakeholder group (and presented in a report to the Land and Water Resources Council in 2001). This rule has evolved through continuing discussions among State and Federal resource agencies, review of current use as reported to the Department through the reporting requirements of 38 M.R.S.A. § 470-D, review of current literature on the science of flow management, and review of flow standards applied in other jurisdictions. In developing the rule, the Department has posted draft versions of the rule for comment and has worked continuously with various interest groups to bring clarity and understanding of its purpose and how implementation will occur. In 2006, two acts of legislation were passed, LD 1776 and LD 2070, to clarify application of the rule for agricultural water use and public water supplies, respectively. LD 1776 establishes the Maine Agricultural Water Management Board with the duties of overseeing environmentally sound and affordable development of water sources, facilitating permitting, securing funding, and otherwise building a sustainable agriculture water source program for the state. LD 2070 is a resolve that directs the Department along with other involved agencies and interest groups to reconcile in this rule the two objectives of protecting aquatic life and other uses as provided in Section 470-H, and allowing community public water supply systems continue use of their existing water supplies to provide water service. Both acts continue to direct the Board of Environmental Protection to establish rules for water flow and water levels standards.

The rule is designed to accomplish several objectives. First, it provides easily determined and measured criteria that are protective of designated uses of each freshwater class. It is expected that this will provide a reasonable and consistent planning framework for flow and water level management. Maine has ample water for all current and expected demand; however, conflicts have occurred where sufficient water has not been available in a particular area, during certain seasons, or during periods of drought. Dependence on surface waters in these circumstances has been shown to be ineffectual as a dependable and satisfactory source of supply for human use while causing substantial environmental damage. In addition to providing criteria that are protective of water quality standards, the rule is designed to provide necessary time and guidance for implementing water management plans where existing use and potential environmental conflict exists. These plans may include the development of water storage systems that capture the abundant water that the state receives, the development of new sources (surface and groundwater) that partition reliance on any single source, or the incorporation of technology that improves the efficiency of water use.

### **Applicability**

The rule is applicable to all classified non-tidal fresh surface waters, except for the limited circumstances described in section 1. The rule intends to allow the continuance of certain use activities, especially those that benefit the public at large, such as emergency uses, uses which by definition will not adversely affect water quality, and circumstances where reasonable controls

already exist. The rule also recognizes the public's need for safe and dependable drinking water and establishes a procedure that permits existing community water systems to continue to fulfill that need while taking appropriate steps to come into compliance with the rule. Emergency water withdrawal or diversion activities are required to control or avert short-term catastrophic events that threaten life or property, most notably for fire prevention and control, or for the management of hazardous material spills. The criteria in this rule do not apply to tidal freshwaters since the criteria do not consider tidal dynamics. Tidal habitats are naturally exposed to dewatering regimes, and since freshwater estuaries usually can provide large recurring quantities of water even during drought conditions, the application of the criteria in this rule are inappropriate. Section 1 clarifies that the criteria in this rule are not intended for storage ponds. It is expected that this rule will encourage the development of storage ponds to collect water when it is abundant thus providing a dependable source during periods of insufficient supply. Water withdrawals that constitute a nonconsumptive use as defined in 38 M.R.S.A. § 470-A are not expected to measurably affect water quality or to alter downstream habitat. The rule extends the definition in § 470-A to include existing activities where the return flow is greater than ¼ mile. Those existing facilities, such as paper mills, are not known to significantly diminish the wetted habitat of the waters they are presently withdrawing from. Such withdrawals amount to approximately one percent of the 7-day 10-year low flow of a waterbody. This amount is substantially less than the smallest amount found by Freeman and Marcinek (2006) to cause loss of fish species (less than 0.05 of 7Q10). Such a *de minimus* use constitutes an inconsequential removal of water. For return flows the interval between the withdrawal and the return must continue to meet all other water quality standards.

Balancing the need to provide safe and dependable public water supplies and to protect aquatic life and other water quality standards has been the most challenging aspect of developing this rule. The water supply industry provides a critical public service that cannot be disrupted. Water withdrawal for public water supplies amounts to about 90% of all water withdrawals in the state, and is necessary for a variety of uses including domestic consumption, supply for industry, fire protection, and the overall economic well-being of a community. Maine is fortunate in both the quality and quantity of public water supplies in the state. The majority of facilities are able to manage their surface water supplies in a way that has little or no impact on water quality standards, including these flow and water level standards. There are 53 community water systems that utilize surface water supplies in the state. Some, such as Portland Water District which uses Sebago Lake and Biddeford and Saco Water Company which uses the Saco River, have large high quality supplies, well in excess of their demand. Others, such as Kennebec Water District on China Lake, already operate within a water level order that provides protection for water quality of the lake while allowing sufficient supply to the district for public use. However, there are some communities, notably along the coast where population growth is high and water supplies limiting, where conflicts between the protection of water quality standards and the need for a sufficient and dependable supply of water creates a conflict. This rule seeks to recognize public water demand and the public decisions and investments directed toward meeting that demand. The rule protects the expected use of surface water supplies for community water systems, while incorporating water quality standards into the planning process of each community water system. The rule recognizes a level of use, defined in the rule as the "system design capacity." Where system design capacity can attain water quality standards, any future expansions and modifications are required to maintain water quality standards, including the flow and water level standards in this rule. Where system design capacity causes, or is expected to cause, impairment of water quality standards, the water supply system can continue to operate. However, that facility will be required to obtain a Community Water System Withdrawal Certificate that may include conditions that require efficient use of water and operation that minimizes effects on water quality. The certificate will be issued by the Department, with review from the Drinking Water Program at the Department of Health and Human Services and the

Public Utilities Commission, to insure that any conditions do not disrupt the service or the financial viability of the community water system. The certificate will require the facility to implement reasonable, cost-effective steps to manage its system to reduce water quality impacts, however, it will not require a water system to reduce service. Specifically, the rule provides that the standards established in the rule will not apply in any enforcement action if a community water system is operating within the conditions of the certificate, thus protecting a community water system while long term planning and management changes lead to water quality improvement. As any of these systems makes modification or expansions, they will be required to plan, in a financially responsible manner, to make water quality improvements. Thus over time, water quality can improve and may eventually attain the standards in this rule. Presently, it is expected that approximately 20 facilities may need to receive a withdrawal certificate.

### **Definitions and Calculations**

Sections 2 and 3 are used to define key terms and methods specific to this rule.

“Natural drought condition” is used to provide a consistent means to identify drought conditions that may affect activities regulated by this rule. A number of drought indices are available, each using different characteristics. The Palmer Drought Severity Index is a widely used index published by NOAA that uses precipitation and temperature to assess a cumulative pattern of drought condition. Values of -2.0 or less on the index indicate a condition of moderate to extreme drought.

“Natural variation of flow” is an important concept used in 38 M.R.S.A. § 470-H. In its 2001 report to the Legislature, the Land and Water Resources Council identified that in assigning water flow criteria, the numerous qualities and benefits provided by our waters require a need to maintain much of the dynamic nature of these waters. The Instream Flow Council (IFC, 2004), following the direction provided by recent publications (e.g. Poff et al., 1997; Richter et al., 1997), “asserts that instream flow standards should provide intra- and inter-annual variability in a manner that maintains or restores riverine form and function to the greatest extent possible.” The IFC refers to such variability as “eco-system based standards.” The general shape, volume, area, composition, and quality of the physical habitat is a direct product of the variability of flow - seasonally, annually, and longer duration - that a waterbody encounters (Doyle et al., 2005). Additionally, the biological communities in these waters are also directly dependent on and adapted to these variations, both in magnitude and timing of these variable flows (Powers et al., 1995; Richter et al., 2001). Flow variability, including flood and drought events, provide important life cycle cues, determine availability and mediate competition for resources, and determine successional changes (Allen, 1995; Postel and Richter, 2003). While withdrawal can occur from rivers and streams, attention must be placed on preserving to a reasonable extent the natural flow regime on a seasonal, annual, and longer basis. The criteria in sections 4 and 5 of the rule provide the basis for such variation to be maintained based on classification. It is important, too, that the negotiation of alternative water flow regimes provided in sections 7 and 8 also include provision for natural flood and drought events as well as applicable seasonal-based flows.

Similarly, the definition for “natural variation of lake level” provides for dynamic maintenance of lake and pond levels. Lake and pond level naturally change with the season but as a more time-integrated response over the course of weeks or months rather than in response to single precipitation events. Attention is given to protection of the littoral zone since this production zone of a lake is most affected by water level change.

“Normal high water” is established as a means of determining a point of reference against which water loss is measured. This is done by observation of the specific water body using a definition similar to that found in the Natural Resources Protection Act (38 M.R.S.A. § 480-B.6).

“Seasonal aquatic base flow” defines the general template upon which flow management is determined in this rule and provides the basis for determining the allowable withdrawal for a specific waterbody. Previous methods using one or a few flow thresholds has been shown to be

inadequate for the purposes of protecting key attributes contained natural variation of flow (Apse, 2000). The aquatic base flow approach (Larsen, 1981; Lang, 1999) is based on using hydrology as a surrogate for habitat. Each seasonal aquatic base flow is defined by a median monthly flow in that season. Six seasons are defined which represent significant periods in the annual hydrograph of a Maine river or stream: two representing seasonal low flow conditions (summer, winter), two defining high flow conditions (spring, early winter) and two defining transitional flow periods (early summer, fall). This provides an improved representation of a natural Maine hydrograph compared to the New England aquatic base flow method which had often been used in regulating flows in New England rivers, and streams and previously used in Maine for hydropower regulation. The New England ABF method identifies only 4 seasons (and 3 flow regimes) and uses multiples of a summer aquatic base flow (ABF) rather than statistically derived flows to establish each seasonal flow. Each of the six hydrologic seasons identified in this rule provides unique conditions and important ecological values (an example of a natural Maine hydrograph with seasonal ABF values is presented at the end of this document). The seasonal low flow periods (summer, winter) provide the most stressful periods of the annual life cycle for fish as well as other organisms. Summer low flow conditions limit available aquatic habitat, compressing the aquatic community into smaller and smaller space. Temperatures increase relative to flow conditions and oxygen content declines conversely to increasing temperature. Low flows also cause a concentration of dissolved substances. Likewise, winter low flow causes a compression of space, destruction of eggs and other dormant stage organisms, and temperature stress due to super cooling of the water, ice formation including anchor ice and crystallization to frazzle. High flow conditions in spring and early winter perform the important role of scouring, sorting and flushing the stream substrate, cycling of organic materials, hydration of riparian habitats, and provide important cues for fish migration, spawning, and allow ingress and egress to habitat. The two transition periods (early summer, fall) are critical times especially for salmonid fish species. Early summer is the critical “swim-up” stage for young fry that need to seek crucial refuge habitats to escape predators and find immediate food resources. This is also the peak emergence period of aquatic insects and peak period of oviposition (egg-laying). The fall period is the spawning season for our native salmonids. Both seasonal periods normally provide optimal temperature conditions and are the peak growth seasons for cold water species.

“System design capacity” is a term created for this rule to establish an expected withdrawal rate for existing community water supplies. As stated earlier, one objective of this rule is to provide compliance with flow and water level standards through a long term planning process. “System design capacity” establishes an existing capacity for withdrawal which can be compared to attainment of water quality standards. As system design capacity changes over time through source modification or development, it provides the base of operation above which systems will be expected to make water quality improvements. “System design capacity” will be determined considering present and historic demand, system infrastructure capacity and investment as well as safe yield for the system to assure both system and financial viability. “System design capacity” will be determined by the Drinking Water Program at Department of Health and Human Services since they have the information and expertise to make this determination.

Calculations of aquatic base flow (ABF) values are provided in section 3 of the rule. This paragraph provides two general approaches to calculating seasonal ABF in a hierarchy of preferred methods. The preferred approach recommends the use of flow records taken directly from the specific waterbody, extensions of flow records if such are incomplete, or the construction of flow records if suitable records exist elsewhere in a watershed. The requirement of a ten year flow record follows methods recommended by the U.S. Geological Survey (USGS) and is expected to capture both high and low events from a representative period of time. The second approach calculates seasonal ABF from state and region-specific equations developed by the USGS. The three documents presented in the rule are the product of studies directed and

funded by the State in cooperation with the USGS as a result of information needs identified by agricultural interests as this rule has been in development (a fourth study estimating flows for southern Maine streams is in development). They provide considerable improvement over previous flow estimates provided by the U.S. Fish and Wildlife Service for New England. The rule also specifies how other region-based flow studies can be used to derive or modify seasonal ABF equations.

### **Setting instream flow and water level standards**

Flows are established through one of two general methods, standard or site-specific, for any of the water classes. (1) A standard alteration of flow for rivers and streams (Sections 4 and 5 of this rule) and a standard alteration of water level (Section 6) provides an easily determined set of seasonal flows and water levels that are protective of aquatic life and all other designated uses and characteristics of a waterbody. These alternative flows and water levels are hydrologically-based by establishing seasonal standards that maintain critical hydrologic conditions above which withdrawal or other flow alteration can occur. (2) Flows and water levels may also be determined by a site-specific evaluation of flows and water levels necessary to protect aquatic life and other water quality standards and adopted in a water flow or water level plan (Section 7 of this rule), or site-specific flows or water levels established within a permit or water level order issued by the Department or the Land Use Regulation Commission (Section 8 of this rule). These flows and water levels established in a plan or permit are usually habitat-based by establishing seasonal standards for maintaining a sufficient amount of usable aquatic habitat considering the available types of habitat that occur to protect aquatic life and other uses.

The standard alteration allows water to be withdrawn from all waterbodies and can provide water for immediate use or storage when there is ample supply within a waterbody. The standard alteration provides a conservative supply of water that does not require further determination by the Department to assure protection of water quality standards. The standard alteration is based on maintaining threshold flows in all river and stream classes below which withdrawal is not allowed (except as otherwise determined through a site-specific water flow plan). Freeman and Marcinek (2006) found that even small withdrawals (amounts as little as 0.05 of 7Q10 flow up to 13 times 7Q10 flows depending on the waterbody) can cause loss of fish species if these withdrawals are occurring during low flow conditions or during low water years, and especially if other flow altering activities (instream impoundments) are present. The standard allocation differs by water classification with Class AA allowing the most limiting standard alteration and Classes B and C having the most liberal standard allocation.

Class AA waters have been recognized by the Legislature for their unique and outstanding qualities and are presently afforded the highest level of protection under Maine's Water Classification Law. This rule likewise provides the highest level of protection with respect to allowable withdrawal and manipulation of flow. It is also recognized that these waters provide a valuable resource, of the highest quality, and that these waters may be safely utilized if responsible limits are placed on use. Section 4 provides flow criteria that can be applied to Class AA waters. The most protective flows that should be applied to these waters are "as naturally occurs." The habitat characteristic for Class AA waters provided in 38 M.R.S.A. § 465.1 is "free flowing and natural." Free-flowing is not defined in law, however, natural is defined as "living in, or as if in, a state of nature not measurably affected by human activity." This definition implies that certain human use of the water (designated uses are identified in § 465.1.A) may occur, but that such uses should not measurably alter the condition from that expected in a truly natural setting. Some withdrawal can occur on Class AA waters and still provide full protection of aquatic life and other resources of those waters. The rule employs a percent-of-flow approach for Class AA, allowing a percentage of water withdrawal whenever flows are above specified thresholds. Percent-of-flow is a preferred method since, if reasonably small percentages are allowed, it can fully preserve the variability and natural shape of the hydrograph. Subparagraph

4-B describes how a 10% removal of flow can be applied in three different seasonal conditions. Subparagraph 4-B(1) allows removal of 10% of the total flow whenever natural flow exceeds the spring ABF. This withdrawal is also allowed any time of year that spring ABF threshold flows are exceeded, such as high storm runoff events (see example hydrograph at the end of this document). In effect, this subparagraph also allows withdrawal to take the water flow below seasonal ABF by as much as 10%, thus focusing the greatest opportunity for withdrawal during the spring peak flow period to be used for storage. Withdrawal cannot occur in the spring when natural flow is less than spring ABF. Similarly during the winter season, 10% of total flow can be withdrawn whenever winter ABF is exceeded. During other seasons, a maximum of 10% of seasonal ABF flow may be removed whenever natural flow exceeds 1.1 times the seasonal ABF (1.5 times the seasonal ABF if the equations in paragraph 3-B are used to estimate seasonal ABF). The factor of 1.5 is used as an approximation of the standard error expressed in the flow equations provided by the USGS, thus providing better assurance that the true seasonal ABF is within the threshold flow). These withdrawal limits assure that withdrawal is unlikely to cause a waterbody to fall below seasonal ABF except due to natural conditions, or to cause prolonged sub-ABF flows except due to natural conditions. A ten percent reduction in flow is expected to reduce volume and area of a waterbody in an amount up to that value depending on the shape and other characteristics of the waterbody. This is offered as a tolerable ecosystem loss and a small, if not immeasurable, change from “natural”. Richter et al. (undated manuscript) propose that changes in flow of less than 10% may be allowed if protection of a “natural, undeveloped” flow regime is desired. Since many Class AA waters are assigned to that classification because they support populations of Atlantic salmon or other flow dependent species (e.g. Tomah mayfly), maintenance of a high proportion of available habitat on a seasonal basis is essential to ecosystem protection. Water withdrawals and the accompanying loss of habitat and habitat quality have been identified as stress factors that may impair the recovery of Atlantic salmon for certain waterbodies (NMFS and USFWS, 2005). Flow management is a component of the Atlantic salmon recovery plan to which the State of Maine is committed. These Class AA waters also support populations of native self-sustaining brook trout and other “species of concern” of high importance to the State. A percent-of-flow regulation has been instituted for the Southwest Florida Water Management District (Flannery et al., 2002) using a regulatory criteria of 10% reduction of flow. The authors assessed effects of flow reduction on downstream ecosystems and water quality parameters, and determined that a percent-of-flow method using a 10% removal provided sufficient protection. The authors further suggest that a “percent-of-flow method lends itself to a process of adaptive management in which continued data collection can be used to refine management strategies.” Monitoring programs are required on certain waters with the prospect of modifying withdrawal requirements. Section 7 of this rule allows for similar development of alternative flows through the implementation of a water use plan.

Section 5 of the rule establishes a standard allocation for Class A, B and C waters. Each of these classes has somewhat different habitat and aquatic life use requirements. The habitat characteristic for Class A waters provided in 38 M.R.S.A. § 465.2 is “natural” and the expectation for the aquatic community is that it should be “as naturally occurs.” Natural is defined as “living in, or as if in, a state of nature not measurably affected by human activity.” This definition implies that certain human use of the water (designated uses are identified in 38 M.R.S.A. § 465.2.A) is expected to occur, but that such uses should not alter the condition from that expected in an actual natural setting. The habitat characteristic of Class B is unimpaired, defined as “without diminished capacity to support aquatic life,” cannot cause detrimental changes in the aquatic community, and shall support all indigenous aquatic organisms (38 M.R.S.A. § 465.3 and 38 M.R.S.A. § 466.11). Class C is less rigorous but still requires maintaining the structure and function of the aquatic community and support of all indigenous fish species. The standard alteration of Class A, B, and C waters is based on maintaining the seasonal ABF for these waters. The use of a seasonal ABF threshold provides a simpler means for users to measure and manage

flow and withdrawal. When flows exceed seasonal ABF, that amount of flow above the seasonal ABF can be withdrawn. Paragraph 5-B places an additional restriction for Class A waters, requiring that flows cannot be reduced to the seasonal ABF for more than 2 consecutive seasons. This allows the natural variation of flow to occur for four seasons of each year thus providing opportunity for “effective” high flow and flood flow events to occur (with the exception of some public water supplies). With the exception of public water supplies, water withdrawal practice in Maine typically does not occur in more than a few seasons of each year – winter and spring for storage purposes, early summer and summer season for irrigation (agriculture, golf, etc.) and early winter and winter for snowmaking. It is also expected that small and large flood flows will continue to occur at similar frequency and magnitude since water withdrawal practices are not designed to capture such large infrequent events. Similarly, naturally occurring low flows and drought flows, less than seasonal ABF, will also occur with similar frequency and magnitude. The objective of these withdrawal thresholds is to prevent unnaturally and repeatedly occurring low flow events.

Section 6 provides the standard alteration for water levels in Class GPA waters. The habitat characteristic for Class GPA waters provided in 38 M.R.S.A. § 465.1 is “natural.” Natural is defined as “living in, or as if in, a state of nature not measurably affected by human activity” (38 M.R.S.A. § 466-9). This definition implies that certain human use of the water is expected to occur, but that such uses should not alter the condition from that expected in a truly natural setting.

Some withdrawal may occur on Class GPA waters and still provide full protection of aquatic life and other resources of those waters. The standard alteration generally allows a 2-foot drawdown in two seasonal increments to lessen the effect of an abrupt water level change. This is an extent of lake level reduction often observed in Maine lakes that is expected to protect the littoral community and would not be expected to interfere with recreation uses. The rule identifies 3 different types of Class GPA waters and assigns different criteria or criteria-setting procedures for each:

1. Aquifer lakes are those waters without a surface outlet. Criteria for water levels are set in 1-foot increments through each of 2 time periods; April through July, July through April. This not only limits the extent of drawdown but also moderates the rate of change. Other water level regimes may be instituted either where there is waterbody-specific data showing that the natural regime is different, or through development of a water use plan.
2. Class GPA lakes with a natural surface water outlet are maintained similar to (1) above in 1 foot increments of drawdown. The primary concern with these waters is the effect of withdrawal on downstream outlet flows. These waters have no ability to maintain natural flow if waters are taken to a level below the natural sill that establishes the lake or pond. While outlet streams may naturally go dry, dewatering of the pond should not be allowed to extend the dewatered period by a significant amount of time. Alternative water level regimes may be adopted through a water use plan.
3. Class GPA lakes, where water level (and normal high water) is established and controlled by a dam structure (and the lake is not used for hydropower purposes). Standard alteration is defined by a volumetric withdrawal limit in two seasonal increments of 1 acre-foot times the area of the pond since the operation of the dam and/or the withdrawal of water will affect water level. Additional water may be withdrawn as refill occurs. Lakes with dams may provide opportunity for withdrawal greater than the amount allowed above, provided that downstream flows are managed by releases at the dam to provide applicable seasonal ABF flows. Water levels or different volume limits of withdrawal may be established that through a water use plan, or by a water level order of the commissioner

### **Instream flows and water levels established by a Water Flow Plan or Water Level Plan.**

Section 7 provides methods to set site-specific flows or water levels that are protective of aquatic life. As stated previously, the standard alterations provided in Sections 4, 5, and 6 are conservative and meant to be applied to any waterbody with assurance that all water quality standards can be attained. Many waters can be expected to attain water quality standards even when withdrawal in excess of the standard alteration occurs, however, how much additional water can be taken needs to be determined on a site-specific basis. Additionally, a water flow or water level plan can be used to alter the seasons established in this rule to more closely coincide with differences in the seasonal hydrograph in different geographic areas of the state. In practice, a water flow or water level plan may be used to simply establish a different protective flow for a portion (specific season) of the standard alteration to accommodate a specific use. Additionally, methods of monitoring and adjustment may be placed in a water flow or water level plan that allow for adaptive management approaches as recommended by Richter, et al. (2003).

The Department has been involved with numerous flow and water level evaluations (e.g. various NRPA permits, water use management plans for Pleasant River, Narraguagus River and Mopang Stream) and a variety of analytical methods (Instream Flow Incremental Methodology, percent wetted habitat, base flow analysis) to establish seasonal flows and water levels. Maine is fortunate since most all water withdrawals involve only a single user, so the difficulties of assessing multiple demands for different purposes or demand for multiple season withdrawal are very few. Community Water Systems comprise the only significant group of users where demand is year-round. Flows or water levels established in the plan would protect a sufficient portion of the habitat and take into account critical flow components expressed in the definition for natural variation of flow or water level. All water quality standards would be protected considering the morphometry of the waterbody, organism occurrence, or other site specific information that can be used to set a more precise flow or water level that is fully protective of the classification standards. Paragraphs 7-A and 7-B specify the necessary components of a water flow or water level plan and the process to establish site-specific flows through this method. Adoption of such a plan by the Commissioner would constitute adoption of a waterbody specific flow standard enforceable within this rule.

### **Instream flows and water levels established through a regulatory permit or water level order.**

In practice, the flows or water levels determined through the rule would be incorporated in any required regulatory permit as a condition of the permit. Section 8.A provides that instream flows and water levels established in an existing permit or water level order issued by the Department of Environmental Protection, the Land Use Regulation Commission or the Cobbossee Watershed District will remain in effect for the term of the permit or order, provided they are protective of all water quality standards, and taking into account the need for natural variation of flow and natural variation of water level. Any reissuance of a permit or order (except hydropower) would be subject to the standards in this rule.

Hydropower is already regulated through Section 401 of the Clean Water Act which directs states to assure that a federally licensed activity will attain all water quality standards of the state. Maine has made substantial use of Section 401 in licensing and relicensing of hydropower facilities to set flow and water level standards, balancing use with the need to maintain water quality standards and designated uses. Two recent court decisions affirm the state's authority to set flows and water levels for hydropower facilities [S.D. Warren Company v. Board of Environmental Protection, 868 A.2d. 210 (Me. 2005), affirmed by the US Supreme Court, May 15, 2006.] The U.S. Supreme Court decision states, "(b)ecause the alteration of water quality is a risk inherent in limiting water flow and releasing water through turbines, changes in the river's flow, movement and circulation fall within a State's legitimate legislative business."

The State's experience with setting flows through the existing regulatory process finds that where new flows have been established downstream of hydropower facilities, the result has been improved aquatic life conditions and attainment of aquatic life standards (Davies et al; 1999). Section 8.B establishes that this program of hydropower licensing and relicensing should continue as presently occurs. For facilities not requiring federal permits, the state has similar jurisdiction to set flow and water level standards through the Maine Waterway Conservation and Development Act.

#### **Drought variance for community water systems.**

The Department recognizes that Community Water Systems are required to maintain a safe and dependable supply of water for the public. During periods of drought, the combined effects of the drought and continued withdrawal of water for public need can be expected to cause some water quality standards to not be maintained. In such circumstances, Community Water Systems may continue to withdraw water. The Department has authority to issue a variance to water quality standards as provided in federal regulations (40 CFR 131), and may use this authority at its discretion during a drought period to relax water quality standards if necessary. The variance may include reasonable conditions on the withdrawal of water that limit to the extent possible any reduction in water quality.

#### **Implementation of instream flow and water level standards**

Paragraphs 10-A and B provide an implementation period for existing agricultural users and existing community water systems, respectively. It is understood that both of these users often have complex water use needs and may already have substantial investment in water system infrastructure that may require significant planning, facility modification, environmental permitting, and reinvestment to bring their facility into compliance with these rules. The rule allows for up to a five year implementation period to come into compliance with these flow and water level rules. This implementation period may be extended by the Commissioner if the facility is making substantial progress but is constrained by necessary support (e.g. available public funding, permits).

#### **Watersheds most at risk.**

38 M.R.S.A. § 470-H specifies that the Department shall identify watersheds most at risk from cumulative water use in this rule. Any water is determined to be a "watershed most at risk" if it is impaired due at least in part to water withdrawal or other activities where flow or water level change has caused the water quality impairment, and is listed in Category 4 or 5 of the Maine's Integrated Water Quality Monitoring and Assessment Report. Additionally, waters where the cumulative water withdrawal capacity of all users approaches the limits provided by the standard alteration (10% of seasonal ABF for Class AA waters, 50% of seasonal ABF for Class A, B, or C waters, 80% of volume reduction for Class GPA waters) are also listed as "most at risk". The purpose of this section is to identify to the Department waters that require priority attention for monitoring and/or development of water flow or water level plans, and where other water management plans may be helpful to provide supply and efficiencies for all users.

#### **Regulated activities related to water flow and water levels.**

Sections 12 and 13 clarify that any new activity that affects flows or water levels and that requires a regulatory permit from the Department or the Land Use Regulation Commission (except hydropower) will be permitted according to the standards in this rule. This section clarifies that this rule is to be used statewide for all regulated activities to assure that there is consistent application of water quality standards. The two agencies are presently drafting a Memoranda of Agreement to cooperate in the implementation of water flow and water level standards contained in this rule.

### **Legal Water Rights not affected**

This rule is not intended to provide any legal water rights to any user, nor is it a determination of a reasonable use for any user. The purpose of the rule is to establish flow and water level standards that are protective of all pertinent water quality standards and designated uses, in particular “habitat for fish and other aquatic life”, of classified fresh surface waters.

### **Enforcement**

Because the proposed rules will become part of Maine’s Water Quality Standards program, enforcement of the flow and water level standards will be through existing enforcement mechanisms under that program. Violations may also be subject to enforcement under the Natural Resources Protection Act, for dewatering a resource.

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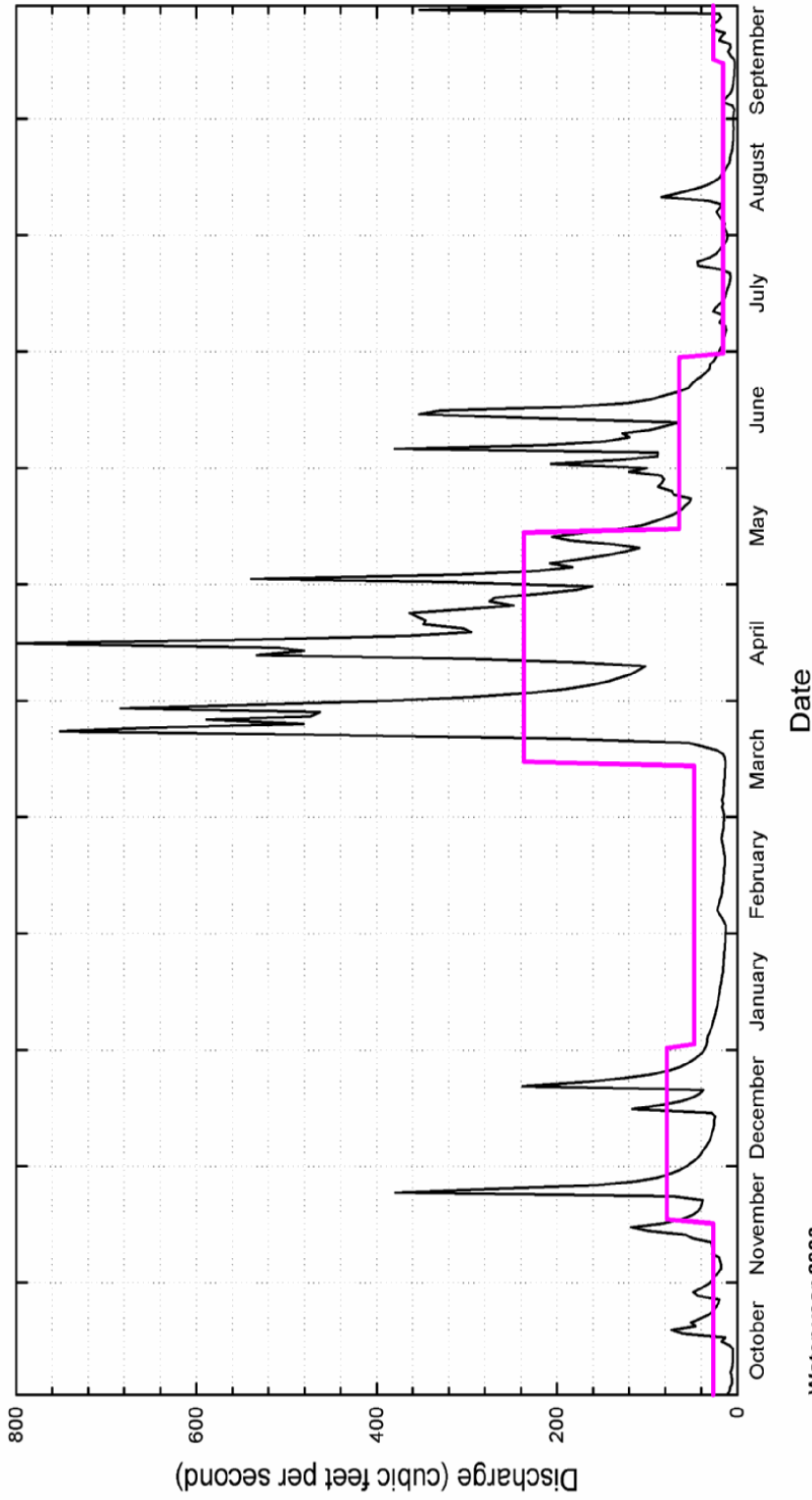
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# Grower 37



**Water year 2003**  
 Drainage area: 64 sq mi  
 Mean annual precipitation: 42.7 inches  
 Fraction aquifer: 0.0  
 Distance from coast: 86 mi  
 Withdrawal thresholds: from Dudley (2003)  
 Hydrograph: Kingsbury Stream near Abbot Village - 94.5 sq mi