COMMONWEALTH OF MASSACHUSETTS

Division of Ecological Restoration

10 Ways Conservation Commissions and Others Can Help Protect Coldwater Streams and Their Inhabitants

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NOTE: *This document is intended for educational purposes only and does not necessarily represent the viewpoint of agencies and commissions having regulatory authority over coldwater streams.]*

(1) ► Find out where the wild trout/coldwater stream reaches are in your community (e.g., consult the "CFR" list on the Mass. Division of Fisheries and Wildlife (DFW)'s **Coldwater Fish Resources (CFR) web page**: http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/what-is-cfr-.html, where you can access a statewide list (sortable by watershed) and interactive map showing the location of all CFR streams
NOTE: the failure of a stream to appear on the CFR list should **not** be interpreted to mean there are no CFR species there; it may be that DFW staff have yet to conduct fish species sampling in that waterway. Conservation Commissioners, Agents, wetland scientists, anglers and others may **know of wild trout streams not** (yet) on DFW's list and can **bring them to DFW's attention** (see page 3).

(2) ► Use the state **Rivers/Wetlands Act law and regulations** and the permitting process to **retain/restore streamside vegetation along "CFR" and similar streams** to enhance the Riverfront Area Resource Area's functions and values (help keep water shaded, cool and clean + fuel the aquatic food chain, e.g.) for the eight Interests of the Act (see the **nine Riparian Area fact sheets** at http://www.mass.gov/eea/agencies/dfg/der/publications/technical-resources for more info).

(3) ► Use the **stormwater provisions in the Rivers/Wetlands regulations** to minimize adverse thermal, sediment or other impacts to coldwater streams. Language relating to stormwater (http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/strmreg.pdf) and effective as of **January 2, 2008** amended **310 CMR 10.04** and the Water Quality Certification (401) regs at 314 CMR 9.02 by adding the following definitions:

"**Cold-water fishery** means waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed **68° F** (20°C) and, when other ecological factors are favorable (such as habitat) are capable of supporting a year round population of cold-water stenothermal aquatic life such as trout. Waters designated as cold-water fisheries by [DEP] in 314 CMR 4.00 **and waters designated as cold-water fishery resources by the Division of Fisheries and Wildlife** are cold-water fisheries. **Waters where there is evidence based on a fish survey that a cold-water fish population and habitat exist are also cold-water fisheries**. Cold-water fish include but are not limited to brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), creek chubsucker (*Erimyzon oblongus*) and fallfish (*Semotilus corporalis*)." [N.B.: **DFW**'s "CFR" species list does not include the creek chubsucker or fallfish, but it does include the slimy sculpin (*Cottus cognatus*) and longnose sucker (*Catostomus catostomus*). DFW has requested that DEP modify its list accordingly.]

"**Critical areas** mean Outstanding Resource Waters as designated in 314 CMR 4.00, Special Resource Waters as designated in 314 CMR 4.00, recharge areas for public water supplies as defined in 310 CMR 22.02 (Zone Is, Zone IIs, and Interim Wellhead Protection Areas for ground water sources and Zone As for surface water sources), bathing beaches as defined in 105 CMR 445.000, **cold-water fisheries**, and shellfish growing areas."

310 CMR 10.05(6)(k) **Standard 4** *(excerpt)*: "Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS)…The required water quality volume, the runoff volume requiring TSS treatment…equals **1.0 inch of runoff** times the total impervious area of the post-development project site for a discharge…**near** or to the following **critical areas**… [which include] **cold-water fisheries** … A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors". This language can be properly interpreted to mean that Standard 4, as well as Standard 6 below, **also apply** to any **tributaries to** cold-water fisheries, perennial **or intermittent**, if sediment-laden, heated or other degraded stormwater runoff entering the tributaries would have a strong likelihood of degrading the cold-water fishery they flow into.

310 CMR 10.05(6)(k) **Standard 6** *(excerpt)*: "Stormwater discharges…near or to **any…critical area** require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by [DEP] to be suitable for managing discharges to such area as provided in the **Massachusetts Stormwater Handbook**… A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors."

DEP Stormwater Standards apply to all new development or redevelopment activities proposed in Wetland Resource Areas or Buffer zones that trigger the filing of a Wetlands Notice of Intent or §401 water quality application. If those factors are met, then the cold water fishery stormwater BMPs are required. In such circumstances, decentralized Low Impact Development (LID) measures to reduce the amount of impervious surfaces must be considered, and source control and pollution prevention measures must be selected, before selecting structural treatment practices. Pretreatment must be provided, prior to discharge of stormwater runoff to a terminal treatment practice, for stormwater discharges to cold water fisheries.

► See the descriptions of **Best Management Practices (BMPs)** in the **Massachusetts Stormwater Handbook** (http://www.mass.gov/eea/agencies/massdep/water/regulations/massachusetts-stormwater-handbook.html) to find out which specific BMPs **are** and **are not** recommended where **cold water fisheries** are present.

Stormwater BMPs that are recommended for cold water fisheries include:

- Vegetated filter strips – p.17
- Bioretention areas and rain gardens – p.23
- Dry and wet swales (swales must be lined if used for pretreatment) – p.77
- Infiltration basins – p.86
- Leaching catch basins (if pretreatment is provided and pretreatment standards are met) – p.100
- Drainage channels – p.69

Stormwater BMPs that are not recommended for cold water fisheries include:

- Constructed stormwater wetlands – p.36
- Dry detention basins – p.108
- Wet basins (a.k.a. wet retention ponds) - p.63

(4) ► Draft/adopt a **local wetlands bylaw that goes beyond the requirements of the state Rivers/Wetlands Act + regulations**. Examples:

- extend the Riverfront Area's coverage to all streams regardless of whether they "flow throughout the year" [see Note 3 of MACC model local wetlands bylaw - http://www.maccweb.org/documents/MACC_Model_Bylaw.doc]
- require a greater width of vegetated area along a coldwater stream than what the state law/regs call for – DFW is developing BMPs that you could incorporate into local bylaws

► Draft/adopt a **local wetlands or other bylaw** that subject **stormwater discharges into coldwater streams** to a **higher level of scrutiny or mitigation** than under state law/regs/guidance. Examples:

- Require greater than 80% TSS removal and/or treatment of more than 1" of runoff
- Incorporate DFW BMPs for CFR streams (once drafted) into local bylaws

(5) ► **Work with planning and/or other municipal boards** to help adopt **zoning and subdivision bylaws** implementing **smart growth/low impact development (LID)** techniques that **steer new development and other potentially harmful land use practices away from coldwater stream habitats**. Examples:

- **zoning overlay districts** along coldwater stream corridors
- **open space residential development** (a.k.a. updated "cluster") bylaws
- **subdivision regulations limiting lot clearing/lawn creation** where coldwater streams are present

[See the Mass. Smart Growth Toolkit, http://www.mass.gov/envir/smart_growth_toolkit/index.html, for more info.]

(6) ► **Assert jurisdiction over any activities that may "alter" coldwater stream habitat** and/or harm CFR and/or other sensitive aquatic species, such as:

- condition the operation of **flow control points at the outlet of lakes and ponds**, water supply reservoirs, etc. where CFR species and habitat in the stream reach below the flow control point may be harmed (by lake drawdown/refill, e.g.)
- condition the operation of **irrigation withdrawals that may deplete streamflow in CFR streams**

See 310 CMR 10.04 - **definition of "alter"**: "Alter means to change the condition of any Area Subject to Protection Under M.G.L. c. 131, § 40. Examples of alterations include, but are not limited to, the following:
(a) the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, **flow patterns** and flood retention areas;
(b) the **lowering of the water level** or water table;
(c) the destruction of vegetation;
(d) the **changing of water temperature**, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of the receiving water."

(7) ►Use the **MEPA comment process** to get proposed development projects to reduce their adverse impacts on coldwater streams and on CFR and other sensitive aquatic species. If you don't already, subscribe to the **MEPA Environmental Monitor** to keep track of "ENF" (Environmental Notification Form) or other MEPA filings in your community or watershed - http://www.env.state.ma.us/mepa/emonitor.aspx

(8) ► **Be receptive** to proposals by state and federal fish and wildlife agencies, Trout Unlimited, land trusts and others seeking to **restore and enhance coldwater stream habitat and/or continuity** by, e.g., removing dams, fixing dropped and/or undersized culverts, adding or retaining large woody debris, etc.

(9) ► Acquire and/or assist others in **acquiring undeveloped land along coldwater streams** and then manage the lands in a manner that safeguards coldwater species habitat. Examples:

- Westport Land Conservation Trust's acquisition (with DFW's help) of the 50-acre Herb Hadfield Conservation Area, protecting Angeline Brook and its sea-run brook trout population: http://westportlandtrust.org/places-to-walk/herb-hadfield-conservation-area
- Wildlands Trust of Southeastern Mass.'s acquisition of a conservation restriction (CR) preserving nearly 1,000 feet of frontage along Poquoy Brook in Lakeville, one of the few cold water streams draining into the Taunton River and supporting a native trout population: http://www.wildlandstrust.org/Portals/0/Uploads/Documents/Public/WLT07AnnRep.pdf

(10) ► Do **educational outreach to riparian property owners and managers** to raise their awareness of the functions, values and sensitivities of coldwater streams and what they can do to reduce their impacts to coldwater stream organisms and habitats. See the **nine fact sheets underscoring the importance of maintaining natural vegetation along rivers and streams** at http://www.mass.gov/eea/agencies/dfg/der/publications/technical-resources.

[The following section was prepared with the help of Glenn Krevosky of EBT Environmental Consultants, (508) 987-0979]

As you (may) know, development projects adjacent to streams supporting naturally-reproducing populations of wild trout can seriously degrade trout and other sensitive coldwater species habitat by contributing excessive levels of sediment, thermal and other pollution to the receiving water. While the full implementation of best management practices (BMPs) at these developments can substantially reduce (if not completely eliminate) these adverse impacts, **this is frequently not done** because the developer's environmental consultant(s) and/or the project's environmental reviewers at the local or state level **are not aware that a stream affected by the project supports a wild trout population that is in danger of serious harm** from the project.

One way to help increase awareness of the location of wild trout streams to developers, landowners, environmental consultants and reviewers is to propose that they be added to the **Mass. Division of Fisheries and Wildlife (DFW)'s "CFR" (coldwater fisheries resources) list**, maintained by Todd Richards [todd.richards@state.ma.us,(508) 389-6336]. This list includes all the waterways for which DFW has documented the presence of naturally-reproducing populations of trout or other "coldwater" fish species (i.e., fish species that generally cannot tolerate water temperatures in excess of **68°F**). There are other streams deserving CFR status that are not yet on DFW's CFR list simply because DFW has yet to evaluate them. Here's the link to the on-line version of the CFR list and map: http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/what-is-cfr-.html.

Throughout the course of field consultant work, wetland scientists encounter cold water fisheries that are not found on DFW's CFR list. Conservation Commissioners and Agents, Volunteer water quality monitors, Stream Team members, anglers and others may also become aware of the presence of wild trout and/or other coldwater species that have yet to be documented by the state. DFW staff are interested in hearing about these streams and evaluating them for possible inclusion on their CFR list. As you (may) know, confirmation of a stream as a "cold water fishery" affords the stream "**Critical Area**" status under state wetlands and water quality regulations and requires a **more rigorous implementation of stormwater BMPs** to help ensure development projects don't harm sensitive trout populations and habitats.

EBT Environmental has been involved in cold water fisheries projects since 1979. The company asks that you consider contacting Rich Hartley [(508) 389-6330, Richard.hartley@state.ma.us] or Todd Richards (contact info above) at the Mass. Division of Fisheries and Wildlife's Field Headquarters in Westboro when you encounter unlisted trout streams. A USGS locus map should be sufficient to initiate the process for stream assessment.

Unfortunately, even if a stream **is** listed on the DFW's "CFR" (coldwater fisheries resource) list, it may **fail** to get full recognition and protection if the stream segment in question is not also listed as a **"cold water fishery"** in DEP's **Massachusetts Surface Water Quality Standards** Regulations (314 CMR 4.00 et seq., http://www.mass.gov/eea/agencies/massdep/water/regulations/314-cmr-4-00-mass-surface-water-quality-standards.html) The DEP's list of stream segments classified as "cold water fisheries" is much less extensive than DFW's CFR list.

Some developers and/or their consultants erroneously believe that the failure of a stream to be officially classified as a cold water fishery by DEP means that there is no obligation on their part to implement rigorous BMPs as required for "critical areas" under the DEP Stormwater Policy. In fact, **either** the **inclusion of a stream on DFW's CFR list**, **or** where a **fish survey confirms** that a **cold-water fish population and habitat exists, is enough to qualify a stream for "critical area" status** and trigger the increased level of protection called for in the stormwater regulations.

Also – **the 2008 revision of the regulations** articulating the Mass. Surface Water Quality Standards **increased the recognition and protection of coldwater streams and their inhabitants under those Standards**. Here's the language of the most relevant excerpt (at 314 CMR 4.06(1)(d)7):

> 7. Cold Water - in these waters dissolved oxygen and temperature criteria for cold water fisheries apply. Certain waters not designated as cold water in 314 CMR 4.00 may contain habitat that supports a cold water fish population and, in such cases, **the cold water fish population and habitat shall be protected and maintained as existing uses**. The Massachusetts Division of Fisheries and Wildlife is responsible for identifying cold water fish populations that meet their protocol regardless of whether or not the water meets the cold water criteria in 314 CMR 4.00. Where a cold water fish population has been identified by the Division of Fisheries and Wildlife as meeting their protocol, but the water has not been documented to meet the cold water criteria in 314 CMR 4.00, the Department **will** protect the existing cold water fish population and its habitat as an existing use

In other words, if a stream is classified as a "cold water" or "CFR" stream by DEP **or** DFW, **the coldwater fishery is deemed an "existing use"**, and stormwater discharges and other DEP-regulated activities that impair that use (cause excessive thermal or sediment loading to the waterway, e.g.) are in violation of the state water quality standards.