

Delta Vision Staff Survey of State Organizational Approaches to Managing Fish, Water, and Watersheds

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(1) Examples where Fish Management and Water Management are Apparently Well Integrated (but not necessarily under the same department)

		Departments		Watershed Approach	Notes
		Fish	Water Supply		
State	Colorado	NR, Division of Wildlife, which has an Engineering Section as well as a Water Section. <u>GW</u>	NR, Division of Water Resources, and the Co. Water Conservation Board.	See entry in Section 2	<p>The Division of Water Resources’ mission includes promoting stewardship of natural resources.</p> <p>The Division of Wildlife has an Engineering Section responsible for 50-100 construction projects a year at an annual cost of about \$5 million. All are meant to be beneficial to wildlife. It also has a Water Section whose goal is to “optimize water use for wildlife” utilizing four water management programs: (1) in-stream flow (with the Co. Water Cons. Board), (2) water rights management (including State Wildlife Areas with associated water rights that are used to enhance wildlife habitat by irrigating food plots, maintaining wetlands, winter range, or wildlife watering features), (3) water resource stewardship, and (4) water quality, which is the basis of the preservation, protection, and management of aquatic wildlife, and involves regularly participation in matters before the state’s Water Quality Control Commission.</p> <p>The Colorado Water Conservation Board (CWCB) was created in 1937 for the purpose of aiding in the protection and development of the waters of the state. The agency is responsible for water project planning and finance, stream and lake protection, flood hazard identification and mitigation, weather modification, river restoration, water conservation and drought planning, water information, and water supply protection.</p>

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Indiana	NR Division of Fish & Wildlife	NR Division of Water	Dept. of Environmental Management's Office of Water Quality's Nonpoint Source/TMDL Section administers Clean Water Act grant programs that provide federal funding for watershed planning, and also supports education and technical assistance.	<p>The Division of Fish & Wildlife's Lake and River Enhancement Section protects and enhances aquatic habitat through measures that reduce non-point sediment and nutrient pollution of surface waters.</p> <p>The Dept. also includes an Engineering Division that serves the entire Department.</p> <p>Division of Water has dual concern for (1) resource evaluation and conservation and (2) public safety in flood prone areas. Its Environmental Unit determines if regulated man-made projects will have an unreasonable detrimental effect upon plant and animal resources.</p> <p>Staff have a commitment that includes "[understanding] that Indiana's natural resources are inter-related and we cooperate with other IDNR Divisions to accomplish our common goals."</p>
Maryland	NR's Fisheries Service	Dept. of Environment's Water Management Administration's Water Supply Program	DNR's Forest Service's Forest Watershed Management Program includes riparian forest buffers, drinking water source protection, watershed-based management & restoration, harvesting best management practices, and Chesapeake Bay Program coordination.	<p>The WMA is charged with protecting public health and the aquatic environment by managing surface and groundwater resources, maintaining safe and reliable drinking water supplies and wastewater treatment systems, and restoring and preserving water and wetlands through pollution control and resource management programs.</p> <p>The WMA's Water Quality Infrastructure Program is also responsible for developing and implementing capital projects that address public health problems, <i>and</i> provides restoration measures that lead to water quality and habitat benefits.</p> <p>The WMA's Water Supply Program implements programs for public drinking water systems and associated planning and conservation for water withdrawal, source protection, and water supply emergencies.</p> <p>The WMA's Wetlands and Waterways Program is responsible for protecting and managing the state's tidal and nontidal wetlands and waters, including the 110-year floodplain.</p>

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Rhode Island	Environmental Mgmt., Bureau of Natural Resources, Division of Fish & Wildlife	(1) Environmental Mgmt., Bureau of Environmental Protection, Office of Water Resources, which works closely with (2) the Rhode Island Water Resources Board and (3) Board Corporate (separate state agencies)	Environmental Mgmt., Bureau of Policy & Administration, Sustainable Watersheds Office assists communities plan for sustainable development that minimizes negative impacts to the environment and preserves community character and meaningful open space. Otherwise, there is no statewide watershed management framework.	<p>Office of Water Resources mission includes: (1) “rivers, lakes, and coastal waters will support healthy communities of fish, plants, and other aquatic life, and will support such uses as fishing, swimming, and drinking water quality,” and (2) “wetlands will be protected and rehabilitated to provide wildlife habitat, reduce floods, and to improve water quality.”</p> <p>Water Resources Board administers water supply planning. In 1999, the RI General Assembly granted the agency sole authority to devise a fair and equitable allocation of water resources among users and uses to ensure that long-range considerations of water supply prevail over short-term considerations.</p> <p>The Board Corporate is charged with establishing water supply facilities, leasing those facilities to cities, towns, districts and other municipal, quasi-municipal or private corporations or companies engaged in the water supply business in Rhode Island, contracting for use of such facilities, or selling the water derived from, carried by or processed in such facilities.</p>
Wyoming	Game & Fish	State Engineer’s Office and Water Development Commission. <i>Although not under the same department, integration is achieved through the Instream Flow Law, see notes.</i>	Environmental Quality’s Water Quality Division, Watershed Management Section is responsible for planning, grant-making, and water quality project implementation activities based on watersheds.	The Instream Flow Law was passed by the 1986 Wyoming Legislature which allowed for the maintenance of stream flows to be considered a beneficial use. Unlike other water rights which may be applied for by the general public, only the Water Development Commission (WWDC) may apply for an instream flow water right (all state water rights are administered by the State Engineer’s Office, and instream flow permits are the fifth type of permit). The Wyoming Game and Fish Department completes biological studies of a stream reach to determine what flows are required from a fisheries habitat perspective. The WWDC then completes hydrologic analyses to determine the amount of water available in that particular stream segment. The State Engineer then holds a public hearing prior to making his decision regarding the amount for the instream flow.

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(2) Examples where Watershed Management Efforts include Activities other than Water Quality Coordination, Grantmaking, and Technical Support

	Departments		Watershed Approach	Notes
	Fish	Water Supply		
Colorado	NR, Division of Wildlife, which has an Engineering Section as well as a Water Section. <u>GW</u>	NR, Division of Water Resources, and the Co. Water Conservation Board.	<p>The Co. Water Conservation Board's Watershed Protection & Flood Mitigation Program is directed to prevent flood damages, review and approve floodplain designations prior to adoption by local governmental entities, and provide local jurisdictions with technical assistance and floodplain information.</p> <p>The Watershed Protection & Flood Mitigation Program conducts the following activities:</p> <ul style="list-style-type: none"> * Review and approve new maps and updates and revisions to current maps to designate floodplains. * Produce and review floodplain studies to identify floodplains and clarify flood-related issues for CWCB and other state, federal, and local entities. * Prepare for and respond to flood events including conducting field and technical activities (e.g., documentation of the flood, providing technical guidance and support) in response to significant floods in Colorado. * Provide technical services to support recovery from and mitigation to flood and flood hazards. * Participate in partnering with federal, state, and local entities for the management, marketing, and administration of flood and flood related programs. 	See entry in Section 1

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	Fish	Water Supply		
			<p>* Participate with partners to plan and undertake multi-objective projects designed to reduce flood hazards, stabilize and restore stream channels, provide habitat, reduce erosion, and increase the capacity to utilize water.</p> <p>* Administer the Watershed Protection Fund and the projects approved by the Board and the Colorado Water Quality Control Division.</p> <p>* Serve as the regulatory and permitting agency for weather (yes weather) modification activities in Colorado for commercial projects.</p>	
Kentucky	Fish & Wildlife Resources	Environmental Protection, Division of Water's Watershed Management Branch's Water Quantity Management Section	The Division of Water's Watershed Management Branch provides leadership for comprehensive planning and analysis of water quality and quantity, on a watershed basis (the state has grouped 12 basins into seven management units). The branch coordinates the Watershed Management Framework (WMF), through which watersheds are targeted for planning and implementation. It develops and implements nonpoint source pollution control programs. It inventories water sources and permits water withdrawals. It provides technical support for water management planning, including source water protection. The Watershed Management Branch administers the Water Watch program through which citizens across the state monitor stream and lake conditions.	<p>On watersheds: "basins" refer to large-scale watersheds (avg. 2,500 mi²), followed by "sub-basins" (avg. 750 mi²), "watersheds" (65 mi²), and "sub-watersheds" (4 mi²).</p> <p>The Watershed Management Branch has 3 sections: (1) the Basin Coordination Section provides leadership and technical support to the Statewide WMF Steering Committee, seven Basin Teams, and sub-watershed task forces, and supports citizen involvement; the (2) Nonpoint Source Section develops and implements nonpoint source pollution control programs for surface and groundwaters, including watershed restoration; the (3) Water Quantity Management Section implements water supply planning, drought monitoring, water shortage response, and water withdrawal permitting programs.</p>
Maryland	NR's Fisheries Service	Dept. of Environment's Water Management	DNR's Forest Service's Forest Watershed Management Program	See entry in Section 1.

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
		Administration's Water Supply Program	includes riparian forest buffers, drinking water source protection, watershed-based management & restoration, timber harvesting best management practices, and Chesapeake Bay Program coordination.	
Massachusetts	Fish & Game; Environmental Mgmt.	Dept. of Conservation & Recreation (formed in 2003 when the legislature merged the Metropolitan District Commission, serving greater Boston, and Department of Environmental Management). Distribution: Mass. Water Resources Authority.	Dept. of Conservation & Recreation, Division of Water Supply Protection, Office of Watershed Management manages and protects the 3 major drinking water supply watersheds for 2.2 million residents – one of the nation's largest unfiltered water supply systems, over 100,000 acres of land. The Division is responsible for collection & safe storage of water, protection of reservoir water & its quality, and management of watershed land. Public access is carefully regulated, and land use regulated (see www.mass.gov/dcr/watersupply/water). The Dept. compensates communities which contain the land & water bodies via a Payment in Lieu of Taxes program (PILOT) that guarantees regular and stable payment to 31 communities.	The Mass. Water Resources Authority distributes the water through an MOU. In 2004 the legislature created a Water Supply Protection Trust to provide a more efficient mechanism for the MWRA to fund the Office's annual \$30 million budget, including costs of land acquisition and PILOT; the Trust has a 5 member board, including the Secretary of the Executive Office of Environmental Affairs and ED of the MWRA.
Minnesota	NR – Division of Fish & Wildlife	NR – Division of Waters does permitting and provides technical capacity. State Board of Water and Soil Resources directs private water conservation programs through local government & watershed districts & water management organizations, links water	1955 Watershed Act permitted the creation of watershed districts that would conserve natural resources through land use planning, flood control, groundwater, erosion, habitat and other conservation projects. Broad authorities include the power to regulate, conserve, and control the use of water resources within the district; contract with units of government and private and public corporations to carry out water resource management	

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		Fish	Water Supply		
			and land use planning, resolves water policy conflicts, and implements comprehensive local water management acts.	projects; hire staff and contract consultants; assess properties and levy taxes to finance district administration; accept public and private grants and encumber debt; acquire property needed for projects; acquire, construct, and operate drainage systems, dams, dikes, reservoirs, and water supply systems; enter upon lands within and without the district to make surveys and conduct investigations. The first responsibility is to prepare a management plan that must be approved by the state Board of Water and Soil Resources before projects can begin. To carry out the plans, watershed management organizations are required to be formed (either as districts, JPAs among municipalities, or under county government). A local board of managers is appointed by the county board of commissioners. Advisory committees are also required.	
Nebraska	Game & Parks Commission		NR	Faced with 500 special purpose districts involved in water and land management issues, each with insufficient authority, jurisdiction and resources to operate effectively, in 1969 the Nebraska legislature divided the state Natural Resources Districts as the "multi-purpose, local unit of Nebraska Government for management, development, and protection of the soil and water resources found in that basin." The 23 districts are delineated along watershed lines with respect to Nebraska's 13 major river basins. Board members, elected by district voters, manage annual budgets ranging from	Established by the Legislature in 1963, the purpose of DNR's Small Watersheds Flood Control Fund is to assist local sponsors with the acquisition of land rights for flood control projects. Local sponsors utilize the Fund to acquire easements or fee title to tracts that are needed to implement a project. If acquired in fee title, a tract must be disposed of within 10 years after it is purchased. Each tract is first offered at appraised value to local subdivisions of government and selected state agencies for public use. If none decide to purchase it, the tract is sold at public auction.

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			\$125,000 to \$16,400,000 and exercise a range of fiscal authorities including taxation and bonding. Districts exercise authority not only over water and soil resources, but over a broader range of environmental areas including solid waste disposal; sanitary systems; drainage; pollution control; management of fish and wildlife habitat and recreation and park facilities; and forest and range management. See Notes too.	
New York	Environmental Conservation, Division of Fish, Wildlife, and Marine Resources, including Bureaus of Habitat and of Fisheries	Environmental Conservation, Division of Water, Bureau of Water Resource Management. <i>There is no clear indication of how the Divisions balance or integrate each other's needs.</i>	The Bureau of Water Resource Management manages the DEC's water quality and watershed protection programs. New York City's historic partnership to protect its drinking water sources and avoid filtration was signed in 1997. MOU stipulated that New York City solicit purchase of 355,000 acres of land in the watershed between 1997 and 2007; this is the foundation of the program. Conservation easements were funded through federal, state, and city strategies including USDA Conservation Reserve Enhancement Program (CREP). Land was to be purchased from willing sellers and full market price. Between 1997 and 2003, City obtained or had under contract over 52,000 acres at a cost of \$131 million. Over 70% of the acreage obtained is in high priority areas, including 1,200 acres of wetlands. The acquisition program will last 15 years. There is a lot more that could be written on this effort!	Legislation that took effect in 1989 added water conservation to the standards for water works required for a public water supply permit.
Oregon	Fish & Wildlife	Water Resources	The Oregon Watershed Enhancement Board (OWEB) is a state agency led by	<i>The Oregon Plan for Salmon and Watersheds, a comprehensive plan for</i>

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	Fish	Water Supply		
			a 17-member policy oversight board. The Board fosters the collaboration of citizens, agencies, and local interests. OWEB administers a grant program funded from the Oregon Lottery as a result of a 1998 referendum. It is also responsible for coordinating monitoring for the Oregon Plan for Salmon and Watersheds (see next cell).	<i>the conservation of salmon and the protection of their habitat which coordinates the actions of all state agencies that affect aquatic resources. It involves a core agency team for coordination and oversight that focuses on issues which transcend the authority of any single agency; and implementation, outreach, monitoring, regional, and independent multidisciplinary science teams.</i> http://www.oregon.gov/OPSW/teams/team.shtml
Vermont	Fish and Wildlife	Environmental Conservation, Water Supply Division	Environmental Conservation's Water Quality Division's Planning Section prepares watershed plans for 17 major planning basins through a public-private collaboration that identifies water quality problems and develops and implements corrective strategies that draw on existing state regulatory and funding programs (BMPs, funding/technical assistant, waterbody priority lists, TMDLs, regional/municipal plans, and water quality permitting).	Here's what's special: The Water Quality Division's River Management Program promotes the planning, designing, and protecting of river corridors that will accommodate stream meander and floodplain processes as the most economically and environmentally sustainable river management alternative. The River Management Program provides technical assistance to restoration projects that establish or encourage natural river stability. (Stability is defined as the ability of a stream, over time and in the present climate, to transport the flow and sediment of its watershed in such a manner that it maintains its dimension, pattern, and profile without aggrading or degrading.) A commitment to riparian corridor protection is an essential component of any river restoration project. The River Management Program envisions a time when the protection and wise management of river corridors will diminish the need for river restoration projects. This

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		Fish	Water Supply		
					includes (1) corridor planning (resolving conflicts between human investments and ecology), (2) protection (funding to purchase river channel management rights), and (3) restoration (natural channel design). http://www.vtwaterquality.org/rivers/htm/rv_restoration.htm

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(3) Examples where Fish Management and Water Management are within the Same Department, but Show No Evidence of Integration

	Departments		Watershed Approach	Notes
	Fish	Water Supply		
Connecticut	Environmental Protection (poorly organized website)	The Inland Water Resources Division's Water Diversion Program regulates withdrawals or modifications of ground and surface water. <i>There is no clear indication of how the Branches, Divisions, and Bureaus balance or integrate each other's needs.</i>	The Department created the Watershed Management Program to more effectively address water resources issues from a watershed perspective. For purposes of water management, the state has been divided into five areas along natural watershed boundaries. A Watershed Coordinator has been assigned to each of these areas, each of whose primary mission is to facilitate management efforts that improve and maintain water quality within their assigned areas. This includes assisting in the development of comprehensive watershed management plans to protect and restore water quality, conserve resources, enhance pollution control and prevention, and guide local land use decision-making.	Has two branches: Environmental Quality Branch includes Water Protection and Land Reuse that does permitting and monitoring, and an Environmental Conservation Branch that includes a Bureau of Natural Resources that manages fish and wildlife as well as "water resources" like wetlands, streams, rivers, lakes, and estuaries.
Delaware	NR and Environmental Control, Division of Fish & Wildlife <u>GW?</u>	DNREC Division of Water Resources Water Supply Section. <i>There is no clear indication of how the two Divisions balance or integrate each other's needs.</i>	DNREC has been implementing a different type of approach to assess, manage, and protect Delaware's natural resources. This approach, known as Whole Basin Management, encourages the various programs from throughout the Department to work in an integrated manner to assess different geographic areas of the state defined on the basis of drainage patterns. The Division of Water Resources also has a Watershed Assessment Section.	
Georgia	NR, Wildlife Resources Division	DNR Environmental Protection Division's Watershed Protection Branch (somewhat of a misnomer and distinct from the state's river basin management	Georgia uses a river basin planning approach to watershed protection, which provides the framework for identifying, assessing, and prioritizing water resource issues, developing implementation strategies, and providing opportunities for targeted, cooperative actions to reduce pollution, enhance aquatic habitat, and provide a dependable water supply. River Basin	The Watershed Protection Branch manages water resources in Georgia through permits to local governments and industry to discharge treated wastewater and to local governments, industry, farmers and subdivisions for surface

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
		planning; see notes for details). <i>There is no clear indication of how the Divisions balance or integrate each other's needs.</i>	Management Plans are prepared in accordance with legislation passed by the Georgia General Assembly that calls for the Environmental Protection Division to prepare plans for each major river basin in Georgia. (How much the state actively engages in watershed management is unclear on the website.)	water and groundwater withdrawals. The Branch ensures that Georgia's public water systems are operating properly to supply safe drinking water to citizens, works to control nonpoint sources of pollution, including erosion and sedimentation, and manages storm water discharges. This Branch also conducts water quality monitoring and modeling of Georgia's waterways.
Hawaii	Land and NR Aquatic Resources Division, and Division of Forestry & Wildlife	Land & NR Commission on Water Resource Management. <i>There is no clear indication of how the Divisions balance or integrate each other's needs.</i>	LNR's Division of Forestry & Wildlife's Watershed Protection & Management Program that aims to ensure water yields by protecting and enhancing the condition of Hawaii's forested watersheds to retard rapid run-off of storm flows, prevent and reduce soil erosion, and improve infiltration rates. This includes management activities like preventing and suppressing forest and range fires, surveying and controlling invasives, reforestation, controlling livestock, and working with private landowners.	The Commission has jurisdiction over land-based surface water and ground water resources, but not coastal waters. The protection and management of these water resources is carried out through resource assessments, planning, and regulation. Generally, the Commission is responsible for addressing water quantity issues, while water quality issues are under the purview of the State Department of Health.
Illinois	NR, Division of Wildlife	NR, Office of Water Resources. <i>There is no clear indication of how the Division and Office balance or integrate each other's needs, even though the office has "stream maintenance" and "stream preservation" programs</i>	Illinois EPA's Bureau of Water's Watershed Management Program; the Planning Unit conducts activities and implements programs for the protection and restoration of water resources, including water pollution control and drinking water issues, and surface and groundwater issues. The Program includes a Targeted Watershed Approach for directing resources to watersheds where the greatest environmental benefit can be realized, and a Unified Water Assessment approach (which seeks to combine state, federal,	

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	Fish	Water Supply		
		(which focus on floods).	and private assessments and identify common priorities).	
Iowa	NR Fish & Fishing Program	NR's Water Quality Bureau's Water Supply Program. <i>There is no clear indication of how the Program and Bureau balance or integrate each other's needs.</i>	Dept. of Agriculture and Land Stewardship's Water Resource Bureau's Watershed Protection Program provides technical and financial assistance for the development of local watershed initiatives.	
New Jersey	Environmental Protection, Division of Fish & Wildlife	Environmental Protection, Division of Water Supply. <i>There is no clear indication of how the Divisions balance or integrate each other's needs.</i>	DEP, Division of Watershed Management runs a variety of programs associated with cleaning up the coastline and coastal water monitoring; grants for planning and water quality projects; coordinating watershed partnerships associated with nonpoint source pollution management; coordinating volunteer monitoring; and determining consistency between proposed projects and regional, county, and the statewide Water Quality Management Plan(s).	
New York	Environmental Conservation, Division of Fish, Wildlife, and Marine Resources, including Bureaus of Habitat and of Fisheries	Environmental Conservation, Division of Water, Bureau of Water Resource Management. <i>There is no clear indication of how the Divisions balance or integrate each other's needs.</i>	The Bureau of Water Resource Management manages the DEC's water quality and watershed protection programs. New York City's historic partnership to protect its drinking water sources and avoid filtration was signed in 1997. MOU stipulated that New York City solicit purchase of 355,000 acres of land in the watershed between 1997 and 2007; this is the foundation of the program. Conservation easements were funded through federal, state, and city strategies including USDA Conservation Reserve Enhancement Program (CREP). Land was to be purchased from willing sellers and full market price. Between 1997 and 2003, City obtained or had under contract over 52,000 acres at a cost of \$131 million. Over 70% of the acreage obtained is in high priority areas, including 1,200 acres of wetlands. The acquisition program will last 15 years. There is a lot more that could be written	Legislation that took effect in 1989 added water conservation to the standards for water works required for a public water supply permit.

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	Fish	Water Supply		
			on this effort!	
Ohio	NR Division of Wildlife	NR Division of Water. <i>There is no clear indication of how the Divisions balance or integrate each other's needs</i>	Five regional water plans were developed in the 1960s and 70s, which included land and soil management. Division of Water provides planning assistance to voluntary local watershed planning groups in the development of watershed plans. However, watershed approaches are not mandated in the State of Ohio and would seem to be complicated by the State Constitution's allocation of primary land management responsibility to local units of government.	
South Carolina	NR Wildlife and Freshwater Fisheries Division, and Land, Water, and Conservation Division's Habitat Protection section	NR Land, Water, and Conservation Division's Hydrology Section is responsible for technical assistance and planning. <i>There is no clear indication of how water supply and fish – despite coming partly under the same Divisions – are balanced, probably because the state has a permitting system for groundwater but NOT for surface water! (except where this falls under the Interbasin Transfer statute)</i>	DNR's River Conservation Program supports, to the extent possible (which seems minimal), community-based river and watershed planning that address riparian management, water quality, recreation, wildlife management, agricultural and forestry practices, and economic development.	
Utah	NR, Division of Wildlife Resources	NR, Division of Water Resources, with a Board of Water Resources that makes policy. <i>There is no clear indication of how the Divisions balance or integrate each other's</i>	The State Water Plan provides detailed planning at the hydrologic river basin level, and subsequent plans for each of the state's 11 basin plan areas have been completed. These inventory water supplies, provide present and future water use information, and address problems and issues facing local water resources stakeholders. Administratively, however, the Division and	The Division of Water Resources' mission includes "implementing water education/conservation programs that encourage wise municipal, industrial, agricultural, and environmental water use."

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		<i>needs</i>	Board use 8 river districts that do not correspond with watersheds.	Notably, the Division of Water Resources has a Water Related Land Use Program that collects data on the extent of irrigated crops, phreatophytes (deep-rooted plants that obtain water from the table or layer of soil just above them), wet/open areas, dry land agriculture, and residential/industrial areas for planning purposes – which, however, do NOT include fish or habitat protection (rather cropland water use, land conversation, new water development, and water budgets etc).
Wisconsin	NR, Division of Land (in terms of fisheries habitat)	NR, Division of Water (including fish permitting), Bureau of Drinking Water and Groundwater. <i>Despite having fisheries mixed among different Divisions, there is no clear indication of how fisheries and water supply needs are balanced or integrated.</i>	Division of Water, Bureau of Watershed Management has had water quality management plans based on basins since the 1970s. In the 1980s it implemented a Priority Watershed Program, and in the 1990s expanded to subsume sewer management. In 1999 the water quality program worked with lands and fisheries to develop “integrated basin plans” statewide (23 geographic management units), to link water quality with water-based ecological resources. However, in terms of structure, the Bureau’s programs do not include anything that specifically addresses habitat – instead they are limited to floodplain management (with no ecological emphasis), runoff management, sediment management, and water quality standards and permits.	

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(4) Remaining States – Fish Management and Water Management are Neither in the Same Department nor Integrated, and have No Remarkable Watershed Approach

		Departments		Watershed Approach	Notes
		Fish	Water Supply		
State	Alabama	Conservation & Natural Resources	Economic & Community Affairs, Office of Water Resources	Hydrologic regions (2) and sub-regions (6) are identified, latter correspond to drainage areas of major rivers. Alabama uses the USGS 8-digit Cataloging Unit (CU) watersheds as the spatial framework for defining its watershed assessment categories and for targeting the watersheds it views as its highest restoration priority.	The Office of Water Resources administers programs for river basin management, river assessment, water supply assistance, water conservation, flood mapping, the National Flood Insurance Program and water resources development.
	Alaska	Fish & Game	Natural Resources, Division of Mining, Land & Water, Water Resources Section	USDA Natural Resources Conservation Service watershed activities in Alaska are voluntary efforts requested through conservation districts and units of government and/or tribes. The watershed activities are lead locally by a "watershed management committee" that is comprised of local interest groups, local units of government, local tribal representatives and any organization that has a vested interest in the watershed planning activity. This committee provides direction to the process as well as provides the decision-making necessary to implement the process. Technical assistance is provided to the watershed management committee through a "technical advisory committee" comprised of local, state and federal technical specialists.	In Alaska's Constitution, water was declared a public resource belonging to the people of the state to be managed by the state for maximum benefit to the public. All surface and subsurface waters on all lands in Alaska are reserved to the people for common use and are subject to appropriation in accordance with the Alaska Water Use Act. The Water Resources Section adjudicates water rights, provides technical hydrologic support, and assures dam safety.
	Arizona	Game & Fish	Water Resources	Watershed management strategies adopted by Arizona Dept. of Environmental Quality's Water Quality	

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			Division include many methods to protect and restore water quality. Whether assessing Arizona's waters, developing plans, or funding grant projects to improve water quality, the Water Quality Division is committed to helping Arizona's citizens achieve the goals of the Clean Water Act and ensure that Arizona's waters are fishable and swimmable.	
Arkansas	Game & Fish Commission	apparently none (the Department of Environmental Quality has a Water Division, but this focuses on water pollution, not quantity/supply issues)	Arkansas Dept. of Environmental Quality's Watershed Outreach and Education section helps engage the public in the Department's mission by developing and promoting local watershed groups that take responsibility for environmental protection in their community. The Watershed Coordinator offers assistance to citizens interested in voluntary approaches to watershed management and conservation.	
California	Fish & Game; Conservation; Fish & Game Comm.	Water Resources	The purpose of the Dept. of Conservation, Division of Land Resource Protection's Watershed Program is to advance sustainable watershed-based management of California's natural resources through community-based strategies. The new statewide watershed program is an extension of the previous CALFED Bay-Delta Watershed Program. The Secretary of the Resources Agency has appointed a 24-member Statewide Watershed Program Advisory Committee to advise on the development and conduct of a new State Watershed Program. There are two committee members representing	DWR Mission: To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
			each of the state's ten hydrologic regions and four at-large members with a particular emphasis on tribal, environmental justice and regional geographic focus.	
Florida	Fish & Wildlife Conservation Comm.	Department of Environmental Protection's (DEP) Office of Water Policy addresses statewide water management issues in coordination with water management districts (see notes) and other agencies (<i>decentralized model</i>).	Watershed Management Program created to implement the Fl. Watershed Restoration Act of 1999, but encompasses other legal authorities, voluntary programs, public education, and financial assistance. The state has identified 29 major watersheds, and the Program is divided into 6 areas that implement water quality protection and restoration activities either directly or in coordination with other programs. Areas include monitoring & data management; assessment; planning & coordination; nonpoint source management; NPDES stormwater regulation; and groundwater protection.	The DEP is involved in managing the quality and quantity of water through its relationship with the state's five water management districts, and the adoption and implementation of The Florida Water Policy and The Florida Water Plan. Chapter 373, Florida Statutes, gives the Department "general supervisory authority" over the districts and directs the Department to delegate water resources programs to them where possible. Pursuant to these delegations, the districts are authorized to administer flood protection programs and to perform technical investigations into water resources. The districts are also authorized to develop water management plans for water shortages in times of drought and to acquire and manage lands for water management purposes under the Save Our Rivers program. Regulatory programs delegated to the districts include programs to manage the consumptive use of water, aquifer recharge, well construction and surface water management.
Idaho	Fish & Game	Water Resources, which includes a Water Resource Board	Water Resource Board is charged with basin planning; completed plans are included in the State Water Plan.	
Kansas	Wildlife & Parks	Agriculture, Division of Water Resources, Water Appropriate and Water Structures Programs	Division of Water Resources includes Subbasin Water Resource Management Program that works with stakeholders to develop water management strategies	

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
			within basins identified in State Water Plan. The Program focuses on groundwater decline and streamflow depletion. The Program helps implement approved management strategies in coordination with the Division's Water Appropriation staff.	
Louisiana	Wildlife & Fisheries	Natural Resources' Office of Conservation's Ground Water Resources. Despite extensive searching, no state surface water/water supply management body could be found (although surface water quality standards exist), which may not be surprising given that the 20% of the state is covered by water and the Mississippi probably will not run dry.	Watershed activities exist but not as part of any state program.	
Maine	Inland Fisheries and Wildlife	Apparently no water supply management body exists (though the Dept. of Health and Human Services does have a Drinking Water Program).	Dept. of Environmental Protection's Bureau of Land & Water Quality does offer education and training and technical assistance, and administers grant programs. It also organizes monitoring and assessment of water quality around major river basins and issues wastewater licenses accordingly. Lastly, it administers the state Nonpoint Source Water Pollution Management Program.	
Michigan	NR – Wildlife & Habitat	NR – Water Management. <i>There is no clear indication of how the Divisions</i>	Dept. of Environmental Quality provides educational materials.	

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
		<i>balance or integrate each other's needs.</i>		
Mississippi	Wildlife, Fisheries, & Parks	Environmental Quality, Office of Land and Water Resources	DEQ has a statewide Basin Management Approach (involving 9 basins) based on collaboration and a five-step Basin Management Cycle (planning, data gathering, evaluation, mgmt plan development and implementation) repeated every five years. Each "team" includes water experts from state and federal agencies, and interested stakeholders. Each basin has designated uses that are designed to meet water quality standards.	
Missouri	Conservation	NR, Office of the Director, Water Resources Center	Nonpoint Source Management Plan (fulfilling the Clean Water Act) is based on watersheds	
Montana	Fish, Wildlife, & Parks	NR & Conservation, Water Resources Division	Conservation & Resource Development Division provides Watershed Planning Assistance Grants to assist Conservation Districts, which are organized by county.	
Nevada	Wildlife	Conservation & NR, Division of Water Planning	C&NR Division of Environmental Protection, Bureau of Water Quality Planning uses watersheds as the basis for Nonpoint Source Pollution Management.	
New Hampshire	Fish & Game	Environmental Services, Water Division	DES Water Division's Watershed Management Bureau (est. 1999) runs 21 "programs" that deal primarily with water quality issues but include watershed protection and restoration. These programs provide financial and technical assistance, and investigate contamination problems, but are not regulatory.	The DES's responsibilities include managing water resources and quality for supplies but also ecological balance.
New Mexico	Game & Fish	Environment (including a Drinking Water Bureau	Environment, Watershed Protection Section is responsible for implementing the (federal) Nonpoint Source	

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
		that deals with water system construction, and Ground Water Quality Bureau)	Management Program, which basically means education, planning grants, and coordination.	
North Carolina	Wildlife Resources Commission	Environment & NR, Division of Water Resources	Following the state's first Water Supply Plan (2001), the Division of Water Resources adopted river basin water supply planning, began developing fifty-year (yes 50) plans for 17 major basins in the state. In addition to aiding planning, the associated models will guide state regulatory decisions on water resource management.	
North Dakota	Game & Fish	State Water Commission	The State has two special projects focused on river basins, one on the Missouri River and the other on the Red River Basin.	
Oklahoma	Wildlife Conservation	Water Resources Board	For water use and administration, the Red River Basin is divided in 18 stream systems, while the Arkansas River Basin is divided into 17 systems, depending upon the watersheds of streams and rivers that contribute precipitation run-off to those streams.	
Pennsylvania	Game Commission	Environmental Protection	The Bureau of Watershed Management's mission is to restore and protect Pennsylvania's watersheds through: proper planning and management of water resources and their uses; reducing the impacts of nonpoint sources of pollution on water resources; regulating activities for soil conservation and waterway and wetlands protection; forming partnerships and building local capacity to restore and protect water resources, including drinking water sources; and educating Pennsylvania citizens about watersheds and watershed management.	

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
South Dakota	Game, Fish & Parks	Environment and NR, Water Rights Program	Environment and NR's Watershed Protection Program provides info, planning and technical assistance to local groups and resource management agencies for watershed and water quality protection-related activities.	
Tennessee	Wildlife Resources Agency	Environment and Conservation, Divisions of Ground Water Protection, Water Pollution Control, and Water Supply	Environment and Conservation's Division of Water Pollution Control uses the state's 54 watersheds as water quality management units. The state follows the classic five-year planning and implementation cycle.	
Texas	Parks & Wildlife	Commission on Environmental Quality, Office of Permitting, Remediation & Registration	The State Soil & Water Conservation Board and Commission on Environmental Quality provide technical and financial assistance to stakeholder groups to develop and implement Watershed Protection Plans, which prioritize and integrate water quality protection and restoration strategies, solicit funding, and coordinate education and communication.	
Virginia	Game & Inland Fisheries	Environmental Quality, Water Resources Program. The Program is committed to meeting current water needs and ensuring future availability for people, fish and the natural environment.	Environmental Quality implements a range of programs that affect watershed management, but does not organize these on the basis of/for the express purpose of watershed management (e.g., agriculture stewardship, erosion & sediment control, pesticides, stormwater).	
Washington	Fish & Wildlife	Ecology, Water Resources Program	The 1998 Watershed Planning Act provides funding and technical guidance for citizens in a watershed to join together to assess the status of the water resources in their watershed and determine how best to manage them.	

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	Departments		Watershed Approach	Notes
	Fish	Water Supply		
			<p>The plans must balance competing resource demands. They are required to address water quantity by undertaking an assessment of water supply and use within the watershed. This includes recommending long term strategies to provide water in sufficient quantities to satisfy minimum instream flows and to provide water for future out-of-stream needs. Optional elements that may be addressed in the plan include instream flow, water quality, and habitat.</p> <p>Twelve state agencies have an MOU identifying roles and responsibilities for coordination.</p>	
West Virginia	Commerce, Division of Natural Resources	Environmental Protection, Division of Water & Waste Management. Water Development Authority coordinates financing and provides oversight.	Division of Water & Waste Management has divided the state into 32 major hydrologic regions/watersheds, each of which is managed under the five-year cycle of the Watershed Management Framework.	