

DAMS SLATED FOR REMOVAL IN 2008

TOTAL NUMBER OF DAMS REMOVED: ~748
TOTAL NUMBER OF DAMS REMOVED SINCE 1999: 306

64 DAMS REMOVED OR SLATED TO BE REMOVED IN 2008

Upper York Creek Dam, Upper York Creek, CA: Removal began in August on this St. Helena earthen dam that was built in 1900. The removal is being undertaken by the St. Helena Department of Public Works and others in order to restore access and improve habitat for steelhead trout. Contact Jonathan Goldman, St. Helena Director of Public Works, (707) 968-2658.

Whites Gulch Dam #1, Whites Gulch, CA: The Whites Gulch Dam is located on the Salmon River, a tributary of the Klamath River, in Siskiyou County, California, not far from the Oregon border. Whites Gulch sits in the middle of thick vegetation and tree-lined streams, ideal for spawning salmon. The original dam was constructed on the river in the late 1800s and was replaced by the current dam in the 1980s. The river was originally home to a large salmon population, supporting a salmon cannery and sportfishing, but now the dam blocks salmon from reaching their upstream spawning habitat, and populations are dwindling. With the October removal of the dam, there is now an additional 1.5 miles of habitat available to coho and spring run chinook salmon. Contact Leah Mahan, NOAA Restoration Center, (707) 825-5161, leah.mahan@noaa.gov.

Shasta River Water Association Diversion Dam, Shasta River, CA: This diversion dam is slated for removal this fall in order to provide access to additional spawning habitat for coho and chinook salmon. Contact Andrew Baker, North Coast Regional Water Quality Control Board, (707) 576-2690, abaker@waterboards.ca.gov.

Camp Meeker Summer Dam, Dutch Bill Creek, CA: This 12-foot high dam was originally built in the 1950s as a seasonal swimming hole for the local community. Dutch Bill Creek is one of only five remaining streams in the Russian River system where wild juvenile coho are known to exist for each year of the species' three year reproduction life cycle. The Department of Fish and Game identified Dutch Bill Creek as having the highest possible rank for restoration and management potential in the Central California Coast Coho ESU. Its removal will restore more than 3 miles of habitat for steelhead and coho. Contact Lisa Hulette, Gold Ridge Resource Conservation District, (707) 874-2907, lisa@goldridgercd.org.

East Mill Creek Barrier, East Mill Creek, CA: This 12-foot high barrier is slated for removal in 2008 in order to restore access to spawning habitat for coho and steelhead. Contact Drew Barber, Mattole Salmon Group, (707) 629-3433, drew@mattole.org.

McDowell Grove Dam, West Branch of the DuPage River, IL: The McDowell Grove Dam is slated for removal this fall in order to restore the river's natural flow regime. The restoration includes the removal of contaminated sediments and is expected to benefit some 23 fish and mussel species. Contact John Oldenburg, DuPage County Forest Preserve District, (630) 933-7200.

New Way Dam Dam, Red Brook, MA: The New Way Dam was removed in September of this year as part of a larger restoration project spearheaded by the Massachusetts' Riverways program, the Trustees of Reservations, and others to restore one of the state's last remaining native sea-run brook trout populations. This project was partially funded by the American Rivers-NOAA River Grants program. Contact Tim Purinton, Massachusetts Riverways Program, (617) 626-1542, tim.purinton@state.ma.us.

Union Dam, Patapsco River, MD: Built around 1900, Union Dam historically supplied water power for the J.W. Dickey Textile Mills in Baltimore County, across the Patapsco River from Ellicott City. This 24-foot high by 355-foot long concrete buttress dam was breached during a storm event in 1990. Since then, bank erosion on the right side of the breach has worsened and water velocities have increased. The erosion is threatening a major sewage line and efforts to stabilize the bank with rip-rap have failed. Removal of the dam should occur during either the winter 2008 or 2009 in order to stabilize the banks and minimize the hazards posed by the breached dam. Some fish passage has been possible since the 1990 breach; more can be expected after the total removal. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8269, jthompson@dnr.state.md.us.

Maple Hill Dam, Butternut Creek, MI: This 3.5-foot high concrete dam was built in the 1930s and is used for irrigation by the Maple Hill Cemetery. It is being removed to restore access to high quality habitat in this headwaters stream.

Plainwell Dam #1, Kalamazoo River, MI: This 21-foot high dam was originally built in 1902 for power production. The dam has since fallen out of use and into disrepair and is being removed this year. Contact Paul Bucholtz, Michigan Department of Environmental Quality, (517) 373-8174, bucholtzp@michigan.gov.

Dexter Dam, Mill Creek, MI: This 15-foot high concrete dam was originally built for power production. It is slated for removal this year for safety and ecological reasons. Contact Michael Donahue, URS Corporation, (248) 553-9449.

Rice Creek Dam, Rice Creek (tributary to the Kalamazoo River), MI: This 12-foot high, 500-foot long former mill pond dam was built in 1835. The city of Marshall owns the dam and is working with the Calhoun Conservation District, Trout Unlimited, and the Michigan Department of Natural Resources to remove the structure. The project is slated for 2007. The goal of the project is to enhance the inland fishery and other aquatic resources of Rice Creek by restoring a 0.8 mile millrace and historic channel at Ketchum Park in Marshall. This site is unique in that it is: (1) historically significant, (2) openly visible and in a public park, and (3) the only dam on the creek, thus its removal would

open the entirety of Rice Creek (a cold water trout stream) to fish passage. The dam is currently having preliminary hydraulic work completed. The estimated cost for the project is \$202,858. Contact Chris Freiburger, Michigan Department of Natural Resources, (517) 373-6644, freiburg@michigan.gov.

Chesaning Dam, Shiawassee River, MI: Built in 1863 to power a grist mill, this dam has fallen into disrepair and is being removed for safety and liability reasons. The removal is expected to benefit the local community's recreation and tourism base. Contact Tom Meder, Shiawassee River Restoration Committee.

Milltown Dam, Clark Fork River, MT: This large, privately owned dam is slated for removal in late 2007 as part of a larger effort to remove tons of sediment contaminated with heavy metals from behind this crumbling dam. Removal of the dam and contaminated sediment will eliminate the risk of all of the arsenic and other heavy metals being swept downstream if the dam breached. The removal will also reconnect the Clark Fork and Blackfoot Rivers. Contact Matt Clifford, Clark Fork Coalition, (406) 542-0539.

Steele's Mill, Hitchcock Creek, NC: This 15-foot tall by 100-foot long dam was originally built in the late 1800s as a hydropower dam. The dam ceased generating power in 1999, and FERC issued a license exemption in 2001. NOAA is working with the local community in order to remove this dam and restore access to historic spawning habitat for American shad and American eel. The removal of this dam, slated for fall 2007, will provide these migratory fish access to 15 new river miles. Contact Howard Schnabolk, National Oceanic and Atmospheric Administration, (843) 740-1328.

Maxwell Pond Dam, Black Brook, NH: Maxwell Pond Dam on New Hampshire's Black Brook (a tributary of the Merrimack River), which is slated for removal this fall, is one example of project that will have many benefits for the community. The City of Manchester, the New Hampshire Department of Environmental Services, and other partners are taking innovative steps to remove this outdated dam and restore eight miles of free-flowing river for alewife, blueback herring, Atlantic salmon, and other migratory fish. The city is planning a major park revitalization effort, in anticipating of the new free-flowing stream. The stream restoration project will improve overall water quality and get Black Brook removed from the state's "impaired waters" list. Contact Steve Landry, New Hampshire Department of Environmental Services, (603) 271-2969, Stephen.landry@des.nh.gov.

Ice Pond Dam and Unregistered Dam, Ice Pond Brook, NH: The town of Jackson is slated to remove these two small dams originally built in the 1800s. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Upper IPC Dam, Newfound River, NH: The dam, originally built in 1936, is slated for removal this winter. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Pearl Lake Brook Dam, Pearl Lake Brook, NH: Originally built in 1935, this dam was removed in July 2008. Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Merrimack Village Dam, Souhegan River, NH: The dam, which was originally built in 1907 to power a gristmill, had last served as a source of drinking water supply. However, the dam was structurally deficient and in need of repairs. The dam's owner determined it was more beneficial to remove the dam, restoring the river and eliminating safety and liability concerns. The dam was removed in September 2008 and restored some 14 miles of habitat for migratory fish. This project was partially funded by the American Rivers-NOAA River Grants program. Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Rex Tannery Dam, Unnamed Tributary to the Lamprey River, NH: This unregistered dam was discovered during a Brownfields investigation. New Hampshire Dam Safety was called to the site where they declared it a dam and ordered the private owner to either register it as a dam or remove the structure. The dam is slated to be notched down to the streambed with the potential for removal of the entire structure depending on the makeup of the dam. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Upper Crown Mill Dam, Nine Mile Creek, NY: The Upper Crown Mill Dam on Nine Mile Creek was originally built in 1868 and powered a mill that manufactured uniforms for the Union Army during the Civil War. It is slated for removal in conjunction with a redevelopment of the old mill site. The project is expected to improve fish passage and restore sediment flow. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Crownshield Dam, North Branch Boquet River, NY: This 7-foot high concrete dam was removed this year in order to facilitate fish passage and habitat restoration. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Fort Covington Dam, Salmon River, NY: The Fort Covington Dam in particular is the first barrier on the Salmon River, located five miles from where it meets the St. Lawrence River. The deteriorated and undersized dam is a public safety hazard that also contributes to upstream flooding because it causes high flows to back up more than they naturally would in a free-flowing river. In addition to improving public safety, the dam removal will enhance recreational boating opportunities and reestablish fish access to more than 35 miles of the Salmon River and tributaries. The project will restore sport fisheries and bring significant benefits to this rural community. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Lower Little Pond Dam, Unnamed Tributary to Beaverkill River, NY: This dam was removed in 2008 for safety and ecological reasons. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Wolf Park Dam and Nelson Park Dam, Alum Creek, OH: Friends of Alum Creek & Tributaries have been working to remove the Wolf Park Dam and the Nelson Park Dam, both on Alum Creek, to improve public safety, as at least two deaths have been documented at the Wolf Park Dam. The project will also improve water quality and restore natural stream flows. Contact Joe Bonnell, Friends of Alum Creek, (614) 409-0511.

Elk Creek Dam, Elk Creek, OR: The Elk Creek Dam was originally constructed for flood control but was never completed. A trap and haul program was used to move fish upstream of the dam for several years but it caused harm to the fish and was more expensive than dam removal. To restore fish passage, in July a notch was created in the dam and the stream is now free flowing. Bob Hunter, WaterWatch of Oregon, (541) 772-6116.

Gold Hill Dam, Rogue River, OR: Outside of the Savage Rapids Dam, which is scheduled to be removed in 2009, the Gold Hill Dam on the Rogue River was the largest impediment to salmon and steelhead migration. Gold Hill Dam's removal in July 2008 is an essential component of restoring the Wild and Scenic Rogue River by removing outdated infrastructure. Contact Craig Harper, Rogue Valley Council of Governments, (541) 423-1369.

Chiloquin Dam, Sprague River, OR: The Chiloquin Dam on the Williamson River was also removed in July 2008. A diverse group of partners, which included irrigators and the Klamath Tribes, came together to remove the dam and restore 80 miles of habitat for two species of endangered sucker fish. Contact Christine Karas, U.S. Bureau of Reclamation, (541) 883-6935.

Unnamed Dams (2), Bear Run, PA: The two stone dams on Bear Run, originally part of the grounds for the staff of Frank Lloyd Wright's Fallingwater, were removed in August 2008 by the Western Pennsylvania Conservancy, the Pennsylvania Fish and Boat Commission and American Rivers. The restoration will reconnect wild brook trout populations on this state scenic river and has already uncovered natural bedrock features and riffle habitat in the impoundment. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Unnamed (Mixel) Dam, Doubling Gap Creek, PA: The removal of this 7-foot high concrete masonry dam is being done by the Pennsylvania Turnpike Commission as mitigation for a transportation project. The removal is expected to benefit wild brook trout, blacknose dace, creek chub, cutlips minnow, tessellated darter and white sucker. It will also eliminate a public safety hazard. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Unnamed Dam, Johnson Run, PA: This 5-foot high concrete dam was originally built for water supply in 1960. The removal will reduce liability while restoring free-flowing conditions instream and reconnecting the floodplain area in this Susquehanna tributary.

Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Trimet Dam, Jordan Creek, PA: This 3-foot high dam no longer serves a purpose and is being removed to restore fish passage. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Laurel Run Dam #2, Laurel Run, PA: This 37-foot high hazard dam is being removed to improve public safety and liability concerns. The area is currently used as a recreational area and dumping grounds. The site is extremely dangerous for users, due to the dam height and other site conditions. The removal will provide an opportunity for aquatic and significant riparian restoration. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Manners Run Dam, Manners Run, PA: This dam is slated for removal in 2008. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Unnamed Ohiopyle Dam, Meadow Run, PA: This dam is slated for removal in 2008. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Pine Run Dam #1, Pine Run, PA: This 43-foot high hazard dam is being removed to improve public safety and liability concerns. The area is currently used as a recreational area and dumping grounds. The site is extremely dangerous for users, due to the dam height and other site conditions. The removal will provide an opportunity for aquatic and significant riparian restoration. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Rolling Rock Dams (9), Rolling Rock Creek, PA: The removal of these dams is being undertaken for the purposes of ecological restoration and to reduce liability. It is expected to benefit the coldwater resources of Rolling Rock Creek. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Vincent Dam, Schuylkill River, PA: This dam is slated for removal in 2008. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Claysville School Street Dam #1, tributary to Dutch Fork, PA: Originally built to supply water, the dam has fallen into disrepair, and it was found that removal of the structure was the most cost effective way to reduce liability. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Unnamed Dam, tributary to Neshaminy Creek, PA: This 2.5-foot high concrete dam is exacerbating erosion and is being removed by the Pennsylvania Department of Environmental Protection. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Mt. Carmel Dams 1 and 2, Unnamed Headwaters, PA: These two earthen dams are being removed as part of a mitigation package. The dams currently create thermal pollution of these spring seeps. Removal will restore a headwaters tributary to the Susquehanna mainstem. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Green Lane Farms Dam, Yellow Breeches Creek, PA: This removal is slated for this winter. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Spangler Mill Dam, Yellow Breeches Creek, PA: This 8-foot high state-owned dam is being removed to eliminate liability and increase fish passage and recreational opportunities. Contact Sara Strassman, American Rivers, (717) 763-0741, sstrassman@amrivers.org.

Cox Brook Dam, Cox Brook (tributary to the Dog River), VT: This 10-foot high, privately owned dam was originally built in 1932 to provide students at Norwich University with engineering experience. The Vermont Department of Fish and Wildlife identified the Cox Brook Dam as a source of declining rainbow trout populations above the impoundment. Removing Cox Brook Dam will aid one of only three natural trout streams in Vermont, benefiting wild rainbow and brown trout. It will also eliminate liability and restore sediment transport to an unstable downstream reach that is in close proximity to bridges and other infrastructure. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@state.vt.us.

Stevensville Brook Dam, Stevensville Brook, VT: This is an 8-foot high by 30-foot long concrete dam that was constructed around 1930 in order to create a private swimming hole. Over time, sediment collected behind the dam became a maintenance problem that has had ongoing environmental impacts. The owner worked with the Vermont Agency of Natural Resources to develop a plan for complete removal of the structure, which is expected to aid in restoration of stream habitat, fish passage, and sediment transport. The removal is expected to cost \$5,000 and be finished fall 2007. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@state.vt.us.

Woodley Dam, Apple River, WI: This 18-foot high earthen dam is slated for removal in fall 2008. While the decision to remove was made a long time ago, the project has been mired in controversy due the proposed construction of a snowmobile bridge over the pilings of the original dam and the dam removal permit was contested by local river advocates concerned over the associated activities with bridge building. The dam partially failed during a flooding event in April 2001 and was drained for safety reasons. Plans include dam removal, streambank stabilization and the construction of a snowmobile bridge. Removal and restoration costs are estimated at \$120,000, and funds will be provided by a Wisconsin Department of Natural Resources small and abandoned dam grant, the US Fish and Wildlife Service, and Polk County. Benefits include elimination of a safety hazard, improved warm water fish habitat, and passage for

canoeists. Contact: Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424, hsarakinos@wisconsinrivers.org.

Big Spring Dam, Big Spring Creek, WI: Removal of this dam began in July 2008. Big Spring dam is located on a section of Class I brook trout stream. The 18-foot gravity and earthen dam was in poor condition and in 1998, the impoundment was drained for safety reasons. Because the dam is classified as a high hazard dam and has spillway capacity requirements, estimated costs for repair exceeded one million dollars. Removal and restoration costs are estimated at \$120,000. Restoration of the stream will happen in several phases with the involvement of many partners ranging from the landowner, the River Alliance of Wisconsin, Inter-Fluve, Adams County, and the Wisconsin Department of Natural Resources. Benefits of the dam removal include improving water quality and fish passage for native brook and brown trout fisheries. Contact: Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424, hsarakinos@wisconsinrivers.org.

Four Hill Flowage, Big Wiergor Creek, WI: This 13-foot high dam is slated for removal in 2008. Big Wiergor Creek and its tributaries constitute a popular brook trout fishery and it is anticipated that with the dam removal, brook trout populations and fishing opportunities will improve. The estimated project cost, \$40,000, is being shared between Rusk County and the Natural Resources Conservation Service. Contact Paul Teska, Rusk County Forestry Department; (715) 532-2113, pteska@ruskcountywi.us.

Unnamed dams (2), Mukwonago River, WI: The Nature Conservancy will remove two half-century-old dams at its Crooked Creek Preserve. The dams are considered unsafe, and they have impacted the ecological health of the Mukwonago River by altering the river's flow and raising its temperature. The Conservancy will restore the land and water around the dams—including springs that constitute most of the river's headwaters—to their historic natural condition. The Conservancy consulted with the Wisconsin Department of Natural Resources, the U.S. Fish and Wildlife Service and the Natural Resources Conservation Service on the project. The work is expected to cost about \$150,000 and is being paid for with a mix of state and federal grants as well as private money. Contact: Chris Anderson, The Nature Conservancy, (608) 381-0746, canderson@tnc.org.

Wisconsin Lutheran Seminary Dam, Pidgeon Creek, WI: This project is in the final steps of design and is slated for removal this winter. The removal project will cost \$38,000 that will come from the Environmental Damage Compensation Account. The removal of the dam from Pigeon Creek will improve the quality of water and habitat for aquatic life, recreational use, and aesthetic quality as well as eliminate the Seminary's liability, operating, and maintenance costs. Contact: Tanya Meyer, Wisconsin Department of Natural Resources, tanya.meyer@wisconsin.gov.

DAMS SLATED FOR REMOVAL IN 2007 AND DAMS REMOVED FROM 1999-2006

TOTAL NUMBER OF DAM REMOVED: ~715
TOTAL NUMBER OF DAMS REMOVED SINCE 1999: 273

54 DAMS REMOVED OR SLATED TO BE REMOVED IN 2007

Unnamed Dam, Mud Creek, AL: An unnamed dam that was built to illegally capture raw sewage that was leaking from a wastewater treatment plant was removed in August 2007. The removal was one of two options given to the Hanceville Water and Sewer Board. Prior to removal of the dam, the biosolids that had accumulated in the sludge behind it had to be removed. The quality of the water near the site has and will continue to be monitored to assess both the impacts of the structure the water treatment plant. Leslie Durham, P.E., Alabama Dept of Economic & Community Affairs, (334) 242-5506, leslie.durham@adeca.alabama.gov.

Zemko Dam, East Branch of Eightmile River, CT: The Zemko Dam, formerly a privately owned structure recently purchased by The Nature Conservancy, is a 5-foot high stone and earthen fill structure scheduled for removal in fall 2007. The removal is expected to restore migratory fish access to historic spawning and nursery habitat for Atlantic salmon, sea lamprey and American eel. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Laura Wildman, American Rivers, (860) 652-9911, lwildman@amrivers.org.

Raymond Brook Pond Dam, Raymond Brook, CT: This 4-foot high concrete and rubble structure was removed from Raymond Brook, a tributary of the Salmon River in summer 2007. The dam owner, tired of the liability associated with a deteriorating dam and looking to turn a muck-filled pond back into a gently flowing stream, was supportive of the restoration project and the opportunity to partner with local and national groups to ensure its success. The dam's removal is restoring access to more than 16 miles of upstream riverine habitat within the Salmon River Watershed, reconnecting the river for juvenile Atlantic salmon, American eel and native resident riverine species such as brook trout. Funding and technical assistance for the removal was provided through the partnership between NOAA Community-based Restoration Program and American Rivers. Contact Laura Wildman, American Rivers, (860) 652-9911, lwildman@amrivers.org.

PPG Rubble Dam, Potomac River, MD: The PPG Dam, once owned by the Pittsburg Plate & Glass company and now by Allegany County, was originally built to impound water for a pumping station that pumped river water for industrial uses. Today it serves no function and is scheduled for removal in fall 2007. The 10-foot high dam, constructed of boulders, impounds half a mile of the Potomac River and is being removed both to reduce a navigational hazard, thus increasing boating opportunities, and to promote easier passage of American eel. Along with the already-completed Octoraro Dam removal, this removal represents one of the first in Maryland. The project was funded in part through a partnership between NOAA Community-based

AMERICAN RIVERS – DAMS REMOVED FROM 1999-2007

Restoration Program and American Rivers. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8269, jthompson@dnr.state.md.us.

Raven Rock Dam, Raven Rock Creek, MD: The Raven Rock Dam 6.5-foot tall stone and mortar dam was built in the 1920s as a water supply source for the city of Hagerstown. The removal, which occurred in late September 2007, will help restore the natural function of the stream and provide access to quality habitat for brook trout. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8269, jthompson@dnr.state.md.us.

Puckum Branch Dam, Puckum Branch Stream, MD: Built around 1940, Puckum Branch Dam was an earthen dam approximately 8 feet high and 200 feet long and has a pipe culvert. It was built to accommodate a logging road and was removed to allow for fish passage and stream restoration. Alewife, blueback herring and perch are among the fish species expected to benefit most significantly from the removal. Removal of Puckum Branch Dam occurred in January 2007. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8269, jthompson@dnr.state.md.us.

Union Dam, Patapsco River, MD: Built around 1900, Union Dam historically supplied water power for the J.W. Dickey Textile Mills in Baltimore County, across the Patapsco River from Ellicott City. This 24-foot high by 355-foot long concrete buttress dam was breached during a storm event in 1990. Since then, bank erosion on the right side of the breach has worsened and water velocities have increased. The erosion is threatening a major sewage line and efforts to stabilize the bank with rip-rap have failed. Removal of the dam should occur during either the winter 2007 or 2008 in order to stabilize the banks and minimize the hazards posed by the breached dam. Some fish passage has been possible since the 1990 breach; more can be expected after the total removal. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8269, jthompson@dnr.state.md.us.

Unnamed Dam, Green River, MI: Removal of this 8-foot dam was shepherded by Conservation Resource Alliance and a series of partners in order to enhance fish migration between the Green and Jordan Rivers and potentially trout spawning habitat. The dam, originally built as a water diversion for the Green River Trout Farm, was removed in late summer 2007. Because a minimum water elevation needed to be maintained for the diversion, the project design involved installing a series of rocky step pools. Contact Mark Johnson, Conservation Resource Alliance, (231) 946-6817.

Rice Creek Dam, Rice Creek (tributary to the Kalamazoo River), MI: This 12-foot high, 500-foot long former mill pond dam was built in 1835. The city of Marshall owns the dam and is working with the Calhoun Conservation District, Trout Unlimited, and the Michigan Department of Natural Resources to remove the structure. The project is slated for 2007. The goal of the project is to enhance the inland fishery and other aquatic resources of Rice Creek by restoring a 0.8 mile millrace and historic channel at Ketchum Park in Marshall. This site is unique in that it is: (1) historically significant, (2) openly visible and in a public park, and (3) the only dam on the creek, thus its removal would open the entirety of Rice Creek (a cold water trout stream) to fish passage. The dam is currently having preliminary hydraulic work completed. The estimated cost for the project is \$202,858. Contact Chris Freiburger, Michigan Department of Natural Resources, (517) 373-6644, freiburg@michigan.gov.

AMERICAN RIVERS – DAMS REMOVED FROM 1999-2007

Milltown Dam, Clark Fork River, MT: This large, privately owned dam is slated for removal in late 2007 as part of a larger effort to remove tons of sediment contaminated with heavy metals from behind this crumbling dam. Removal of the dam and contaminated sediment will eliminate the risk of all of the arsenic and other heavy metals being swept downstream if the dam breached. The removal will also reconnect the Clark Fork and Blackfoot Rivers. Contact Matt Clifford, Clark Fork Coalition, (406) 542-0539.

Steele's Mill, Hitchcock Creek, NC: This 15-foot tall by 100-foot long dam was originally built in the late 1800s as a hydropower dam. The dam ceased generating power in 1999, and FERC issued a license exemption in 2001. NOAA is working with the local community in order to remove this dam and restore access to historic spawning habitat for American shad and American eel. The removal of this dam, slated for fall 2007, will provide these migratory fish access to 15 new river miles. Contact Howard Schnabolk, National Oceanic and Atmospheric Administration, (843) 740-1328.

Unnamed Dam, Unnamed Tributary, Raymond, NH: This unregistered dam was discovered during a Brownfields investigation. New Hampshire Dam Safety was called to the site where they declared it a dam and ordered the private owner to either register it as a dam or remove the structure. The dam is slated to be notched down to the streambed with the potential for removal of the entire structure depending on the makeup of the dam. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Plainsboro/Cranbury Dam, Cranberry Brook, a tributary of the Millstone River, NJ: This 8-foot high and 650-foot long earthen embankment dam as built in the 1930s to create an irrigation withdrawal point for the surrounding agricultural lands. This dam, owned by a local condominium association, contributes to degraded water quality and blocks the movement of resident fishes such as smallmouth bass. The total project is expected to cost approximately \$150,000 with funding provided through private grant and the association general funds. Removal of the dam will also allow the regeneration of a 30 acre riparian forest that pre-dated the dam, and create a corridor connection between the upstream and downstream existing forested corridors. Contact Dewey Lima, New Jersey Department of Environmental Protection, (609) 984-0859, dewey.lima@dep.state.nj.us.

Lower Kakeout Dam, Stone House Brook, NJ: This 16.8-foot high earthen dam was built in 1926 as an early water supply source. This publicly owned structure is currently serving no purpose and is being removed to eliminate the current liability. Contact Dewey Lima, New Jersey Department of Environmental Protection, (609) 984-0859, dewey.lima@dep.state.nj.us.

West Milford Lake Dam, Long House Creek, NJ: This 16-foot high earthen dam was built in 1929 for the purposes of recreation. The privately owned dam is in a state of disrepair and is being removed by the state for safety reasons. Contact Dewey Lima, New Jersey Department of Environmental Protection, (609) 984-0859, dewey.lima@dep.state.nj.us.

Gruendyke Mill Dam, Musconetcong River, NJ: This 7-foot high and 150-foot long concrete/masonry dam was built in the 19th century and reconstructed several times in the early

AMERICAN RIVERS – DAMS REMOVED FROM 1999-2007

1900s to service a mill and also enable ice harvesting. The dam experienced flood damage in 2000 and is severely deteriorated. It also contributes to degraded water quality and blocks the movement of resident fishes such as brown trout. The dam owners, who operate a restaurant near the dam, are donating a parcel of river frontage to be available for public access once the dam, a public safety hazard, is removed. The total project is expected to cost approximately \$200,000 with funding provided by federal, state, county, and private partners. The Musconetcong Watershed Association, which is leading the project, considers the remaining 19 dams on the river to be candidates for dam removal as well. Contact Beth Styler Barry, Musconetcong Watershed Association, (908) 537-7060, beth@musconetcong.org.

American Legion Pool Dam, Canasawacta Creek Dam, NY: This 4-foot high dam in the City of Norwich was removed during the summer to reduce localized flooding exacerbated by the structure. The dam, originally built to create a children's swimming area, had outlived its usefulness. City Alderman also expressed concerns that the dam caused a safety hazard because of the number of children playing on or around it every summer. Contact Alon Dominitz, New York State Department of Environmental Conservation, (518) 402-8130, axdomini@gw.dec.state.ny.us.

Unnamed Dam, Bear Creek, OR: Information pending. Craig Harper, Rogue Valley Council of Governments.

Brownsville Dam, Calapooia River, OR: This 5-foot high dam, originally built in 1858 to divert water for a millrace, was removed in August 2007 in order to restore access to critical habitat for spring Chinook and steelhead. With the dam gone, these migratory fish will now have access to more than 40 miles of spawning habitat. This project is one of the first projects funded under NOAA's Open Rivers Initiative, providing funding for community-driven small dam and barrier removal projects. Contact Kerry Griffin, National Oceanic and Atmospheric Administration, (503) 872-2738, kerry.griffin@noaa.gov.

Marmot Dam, Sandy River, OR: Removal began on the 47-foot high Marmot Dam, built in 1912 as part of PGE's Bull Run Hydroelectric project, in July 2007. In recent years it became clear that addressing the harm the dams caused to salmon and bringing the project up to date with modern environmental protections would be very costly. In 2002, PGE signed an agreement with 22 organizations to decommission the project. Once the Little Sandy Dam, the second dam in the settlement, is removed next year, the project will open more than 100 miles of high quality habitat for threatened salmon and steelhead and increase recreational opportunities for boaters. Contact Amy Kober, American Rivers, (206) 213-0330 x23, akober@amrivers.org.

South Fork Klaskanine Dam, South Fork Klaskanine River, OR: The South Fork Klaskanine Dam was originally built in 1980 to divert water to a commercial hatchery in Youngs Bay. The removal of this structure occurred in August 2007 in order to provide fish passage for migrating salmonids with fish screens and an intake being installed to fulfill the water diversion obligations. This removal will result in access to 2.25 miles of spawning and rearing habitat for coho, cutthroat, and steelhead and allow for natural stream processes to occur, such as sediment and woody debris transport. The project was funded in part through a partnership between

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NOAA Community-based Restoration Program and American Rivers. Contact Catie Fernandez, CREST, (503) 325-0435, cfernandez@columbiaestuary.org.

Glenburn Pond Dam, Ackerly Creek, PA: The Natural Lands Trust is removing this dam on Ackerly Creek in Lackawanna County, PA over a series of phases that will take several years in order to assess, contain and mitigate the movement of contaminated sediment from a former upstream industrial input. The project will ultimately remove a liability and expense and restore approximately 20 acres of natural wetland and riparian area that has been inundated. Contact Scott Wendle, Natural Lands Trust, (610) 353-5587, swendle@natlands.org.

Bear Rock 1 and 2 Dams, Bear Rock Run, PA: These 30-foot high dams were built from 1903 to 1904 by the Mountain Springs Water Co., later the Summit Water Supply Co. (a predecessor to Highland Sewer and Water Authority) to provide a water supply to the Pennsylvania Rail Road in the Cresson/Gallitzin areas. The dams no longer serve their function and are a liability for the owner, the Highland Sewer and Water Authority. The removal of these dams will complete a series of 4 dam removal projects in the greater Johnstown area. The dams are slated for removal in late summer 2007. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Ed Englehart, Highland Water and Sewer Authority, (814) 266-3146, eenglehart@highlandwater.net

Smith Dam, Unnamed tributary to Cedar Run, PA: This dam was built in 1916 to create a duck pond. It is 3 feet high by 34 feet long and made out of concrete with a wooden flow control. Removal, expected to cost \$17,200 and slated for fall 2007, should improve water quality and fish habitat and passage. The project is funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Unnamed Dam, Unnamed tributary to Cedar Run, PA: Built in 1911 to create a duck pond, this dam is 3 feet high by 30 feet long and made out of concrete with a 2-foot wooden plank opening. Combined with other restoration work on the same tributary, removal of this dam will open fish passage and improve water quality. It is expected to be taken out in 2007 for the cost of \$17,200. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741; sdeuling@amrivers.org.

Crabapple Dam, Crabapple Run, PA: In July 2007, the Pennsylvania Department of Environmental Protection removed this high hazard dam in Fayette County, PA. The earthen dam was 30-foot tall and 720-foot long and dated from 1906, when it was used to supply water to the Washington Coal and Coke Co. mines and ovens, though its more recent use was recreational. Contact Tom Bold, Pennsylvania Department of Environmental Protection, tbold@state.pa.us.

Unnamed dam, Fishing Creek, PA: This dam in Columbia County was built by PennDOT in 1968. It consists of sheet-piling and is approximately 5 feet high and 380 feet long. The dam serves no useful purpose and its removal will restore free-flowing dynamics and fish passage and

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will include the removal of floodplain obstructions and an abandoned RR trestle bridge. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Behrend Capped Waterfall Dam, Fourmile Creek, PA: Fourmile Creek is designated as a warmwater and migratory fishery and features natural ledges on its lower mainstem as it heads for Lake Erie. The Behrend Capped Waterfall dam was a 2.5-foot tall, 40-foot long concrete-capped natural ledge. Its original purpose and date of construction are unknown. The dam was in a state of disrepair and the owner wished to restore the natural waterfall and stream channel. The dam was removed for less than \$10,000 in August 2007. Contact Dave Skellie, Pennsylvania Sea Grant, (814) 217-9014, dus18@psu.edu.

Spring Creek Inc. Dam, Fourmile Creek, PA: This removal is a companion project to the Behrend Capped Waterfall Dam removal and will take place in August 2007. The dam is approximately 2-foot tall and served formerly as a concrete-encased sewer line. The dam is being removed to restore a natural waterfall and will cost less than \$10,000. Contact Dave Skellie, Pennsylvania Sea Grant, (814) 217-9014, dus18@psu.edu.

Unnamed dam, tributary to Glade Run, PA: Owned by PA Game Commission, this 3-foot tall, 30-foot long concrete and stone run-of-the-river dam is located in Northumberland County. The dam is no longer serving a useful purpose and will be removed in late 2007 to restore connectivity to this warmwater fishery and rid the Commonwealth of a potential liability. The removal is expected to cost less than \$10,000. Contact Dave Kristine, Pennsylvania Fish and Boat Commission, (814) 353-2225, dkristine@state.pa.us.

Unnamed dam, Indian Run, PA: A dam will be removed on Indian Run, a warmwater tributary of the South Branch Conewago Creek for the purpose of eliminating a threat to public safety and restoring the stream to a free flowing condition. The project will restore approximately 550 lineal feet of stream channel. The dam is located in York County, PA.

Dauberville Dam, Irish Creek, PA: The removal of the remnants of the Dauberville dam across the warmwater fishery, Irish Creek, is expected in 2007. The dam was previously breached and the full removal will eliminate a threat to public safety and restore the stream to a free flowing condition. Contact Dave Kristine, Pennsylvania Fish & Boat Commission, (814) 353-2237, dkristine@state.pa.us.

Girl Scout Dam, Laurel Run, PA: The Girl Scout Dam is a 6-foot high by 50-foot long structure that is in an advanced state of disrepair and presents a safety hazard to the public. In addition to liability concerns, the dam is causing significant bank erosion and blocks fish from accessing historic spawning habitat. The small river that it impounds supports a Class-A wild trout fishery, and removal of the dam, which is slated for 2007, will expand available habitat for the species. Contact Scott Carney, Pennsylvania Boat and Fish Commission, (814) 353-2225, rscarney@state.pa.us.

Mann dams, West Branch Little Conestoga Creek, PA: Two dams on the West Branch of Little Conestoga Creek are expected to be removed in late 2007 or early 2008. These projects will include extensive riparian restoration for approximately 2,500 lineal stream feet. The

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projects will benefit water quality and resident fishes. One dam is a small remnant approximately 1-foot tall and 10-foot long that had an unknown use, the other is approximately 4-foot and 25-foot long that was originally a stream crossing that was built upon over time and eventually functioned as a dam. The dam removals are estimated to cost approximately \$70,000, which includes significant costs to stabilize a span bridge crossing over the larger dam structure. Contact Dave Kristine, Pennsylvania Fish & Boat Commission, (814) 353-2237, dkristine@state.pa.us.

Heilman Dam, Mahoning Creek, PA: The 15-foot high municipally-owned Heilman Dam was removed in August 2007. Built in 1914 to supply water for steam-powered locomotives, the dam no longer served a purpose yet posed a public safety hazard and liability for Lehighon Borough. Removal of the dam restores fishery access to 18 miles of river upstream and provides safer conditions for the borough to establish a riverfront park. Removal of the dam and resulting water quality improvements will provide additional habitat for trout, as well as migratory fishes such as American shad and herring that are the focus of a long-term restoration effort in the Lehigh River Watershed. The total project is expected to cost \$120,000, including grants from the American Rivers-NOAA Community-based Restoration Partnership grant program and the American Rivers' Free Flowing Pennsylvania grant program. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Beiler Dam, tributary to Muddy Run, PA: The Beiler dam is a 2.5-foot tall former power supply to an Amish farm. The dam is no longer serving a functional purpose and has negative ecological impacts to the freshwater ecosystem of this tributary to Muddy Run. The 2007 removal will restore 150-foot of stream and will be funded in part by the Natural Resource Conservation Service. Contact Jack Hill, Pennsylvania Department of Environmental Protection, (717) 772-5988, jahill@state.pa.us.

Okehocking Dam, Ridley Creek, PA: The third dam to be removed from Ridley Creek since 2004, the Okehocking Dam, located in a township preserve, will improve water quality and restore free-flowing dynamics to this section of Ridley Creek. The concrete dam of unknown age is approximately 5-foot tall and 90-foot long serving an upstream drainage area of 9.5 square miles. Its original purpose was water supply to a power plant. The dam removal is part of a larger effort to remove invasive plants and restore the riparian areas along the creek and will benefit the high-quality coldwater fishery of this section of Ridley Creek. The removal is expected in fall 2007. Contact Mary McLoughlin, Willistown Township, (610) 640-1669, mhm@willistown.pa.us.

McCoy-Linn Dam, Spring Creek, PA: Approximately 25-foot high and 101-foot long, McCoy-Linn Dam was originally built in 1774 as a source for water power and was subsequently rebuilt several times, most recently in 1936. A run-of-the-river dam, the present McCoy-Linn Dam was breached several times in storm events and is in bad condition. At an estimated cost for removal of \$406,600, taking out McCoy-Linn Dam will remove a safety hazard, create a riverfront recreational area, improve downstream water quality and open the creek for fish passage. Although the site has significant historical relevance, the dam's condition was unsustainable and it was removed in fall 2007. The project was funded in part through an

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American Rivers' Free Flowing Pennsylvania grant. Contact Dave Kristine, Pennsylvania Fish and Boat Commission, (814) 353-2237, dkristine@state.pa.us.

Alameda Park Dam, Sullivan Run, PA: Built in 1900, this dam is 9 feet tall and 180 feet long. Originally intended for recreational use at an amusement park, the dam is partially breached. Removing it, for an estimated cost of \$52,500, should restore park land, reduce a safety hazard, improve water quality and open fish passage by restoring the stream to a free-flowing condition. It is slated for removal in fall 2007. The project is funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org

Cheltenham Dam, Tacony/Tookany Creek, PA: This former flour mill dam is expected to be removed in 2007 or early 2008. The dam is 9-foot tall and 60-foot long and is constructed of stone and concrete. The dam currently serves no functional purpose, is deteriorating, poses a significant liability and safety concern, degrades aquatic habitat and water quality, and contributes to localized flooding. The estimated cost of removal and associated restoration is \$187,000. Funding is provided in part by the National Fish & Wildlife Foundation. Contact Dave Kristine, Pennsylvania Fish & Boat Commission, (814) 353-2237, dkristine@state.pa.us.

Bailey Dam, tributary to Turtle Creek, PA: This small project in Union County, PA will restore fish passage and natural stream dynamics. The dam was removed in summer 2007. Contact Dave Kristine, Pennsylvania Fish & Boat Commission, (814) 353-2237, dkristine@state.pa.us.

Wanamie Dam, Wanamie Run, PA: The Wanamie Dam, in Luzerne County, was a high-hazard dam 26-foot tall and 255-foot long. The dam was constructed in 1850 and updated in 1884 and built of earth and stone masonry. The original purpose was as a water storage facility for a downstream intake dam which supplied municipal water and water to a colliery. A dam inspection from November 1914 recorded that while failure of the storage dam may not cause failure of the intake dam, it would submerge the entrances to several coal mines belonging to the Lehigh & Wilkes Barre Coal Company, "resulting, no doubt, in considerable loss of life." The dam was removed in early 2007 by the Earth Conservancy, who owns the property and dam. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, vhumenay@state.pa.us.

Berwinsdale Dam, North Witmer Run, PA: The Berwinsdale Dam was removed in June 2007 to avoid environmental impacts of imminent failure of this earth & concrete dam. The dam was 7-foot tall and 70-foot long and is believed to have been built in the early 1900s as a timber splash dam or for ice harvesting. The removal will provide positive ecological benefits to the coldwater fishery of North Witmer Run in Clearfield County. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (814) 342-8146, vhumenay@state.pa.us.

Wittlinger Dam, Yellow Breeches Creek, PA: The remainder of this 8-foot high concrete dam lies upstream from Hoffman Dam on the Yellow Breeches in South Middleton Township. The township chose to remove the dam to eliminate liability and avoid repair costs to a deteriorating breached dam that no longer served an economic purpose. The removal will also improve habitat

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for resident trout. Partners are working with the township to ensure that a historic raceway built with the dam to serve a mill will be preserved. Post-removal plans may include a water trail or improved fishing and boating access at the former dam site. Anticipated cost of removal is \$90,000. The dam was removed in early fall 2007. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Brian O'Neill, South Middleton Township, (717) 258-5324.

Woolen Mills Dam, Rivanna River, VA: Originally built in 1830 to provide water power to a mill and as part of a series of dams and locks, the Woolen Mills Dam was removed in August 2007 as part of an effort by the local community and state of Virginia to remove an aging dam and restore access to more than 16 miles of spawning habitat for migratory fish such as American shad. Original design work for this project was funded in part through a grant from the American Rivers-NOAA Community-based Restoration Partnership grant program. Contact Jason Halbert, Rivanna River Restoration Committee, (804) 347-5337.

Quinn Dam, Tye River, VA: The removal of the Quinn Dam in summer 2007 marked the removal of an aging dam that served no purpose other than to prevent migratory fish such as alewife and blueback herring from reaching historic spawning habitat. With the dam removed, more than 20 miles of the river will run free again. Contact Jason Halbert, Virginia Organizing Project, (804) 347-5337.

Pinney Hollow Brook Dam, Pinney Hollow Brook, VT: This 12-foot by 67-foot concrete dam was originally built in 1933 to create a state park swimming hole. The dam was removed in summer 2007. However, because the dam is on the National Register of Historic Places and part of the Coolidge State Park Historic District, remnants of the dam will be left in place as "stable ruins" and interpretive signage will be erected. The removal is expected to benefit wild brook trout. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@state.vt.us.

Stevensville Brook Dam, Stevensville Brook, VT: This is an 8-foot high by 30-foot long concrete dam that was constructed around 1930 in order to create a private swimming hole. Over time, sediment collected behind the dam became a maintenance problem that has had ongoing environmental impacts. The owner worked with the Vermont Agency of Natural Resources to develop a plan for complete removal of the structure, which is expected to aid in restoration of stream habitat, fish passage, and sediment transport. The removal is expected to cost \$5,000 and be finished fall 2007. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@state.vt.us.

Pott Diversion Dam, Lower Currier Creek, WA: This 12-foot high dam is actually formed by checkboards that have been placed across two eight-foot culverts. Originally used as an agricultural diversion, this blockage is being removed to restore access to steelhead rearing habitat. Removal is expected to be completed in fall/winter 2007. Contact David Gerth, Kittitas Conservation Trust, (509) 649-2951.

Big Spring Dam, Big Spring Creek, WI: This dam removal and 7-acre wetland restoration is slated to begin in the fall of 2007 and is located on a section of Class I brook trout stream. The

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18-foot high gravity and earthen dam was in poor condition and in 1998, the impoundment was drained for safety reasons. Because the dam is classified as a high hazard dam and has spillway capacity requirements, estimated costs for repair exceeded one million dollars. Removal and restoration costs are estimated at \$300,000. Over \$225,000 has been secured for both physical restoration and a public participation process regarding what the local community would like to see at the former impoundment. Funding sources include hydropower settlement funds, state dam abandonment and river restoration grants, NRCS and U.S. Fish and Wildlife Service grants. Restoration of the stream will happen in several phases with the involvement of many partners ranging from the dam owner, surrounding landowners, the River Alliance of Wisconsin, Inter-Fluve, Adams County, the Wisconsin Department of Natural Resources, the Town of New Haven, NRCS and U.S. Fish and Wildlife Service. Benefits of the dam removal include improving water quality and the native brook and brown trout fisheries. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424, hsarakinos@wisconsinrivers.org.

Four Hill Flowage, Big Wiergor Creek, WI: This 13-foot high dam is slated for removal in 2007. Big Wiergor Creek and its tributaries constitute a popular brook trout fishery and it is anticipated that with the dam removal, brook trout populations and fishing opportunities will improve. The estimated project cost is \$40,000, and there is partner cost sharing between Rusk County and the Natural Resources Conservation Service. Contact Paul Teska, Rusk County Forestry Department; (715) 532-2113, pteska@ruskcountywi.us.

Wisconsin Lutheran Seminary Dam, Pigeon Creek, WI: The removal of a crumbling 4-foot high dam owned by the Wisconsin Lutheran Seminary is slated for sometime in 2007. The dam, which has seen better days, is in an advanced state of disrepair. Removal of the structure will provide steelhead and salmon in Lake Michigan access to habitat in Pigeon Creek for the first time in 80 years. Contact Will Wawryzn, Wisconsin Department of Natural Resources, (414) 263-8699.

33 Dams Removed in 2006

Niles and Sunol Dams, Alameda Creek, CA: The Niles and Sunol Dams were removed in late summer 2006 by the San Francisco Public Utilities Commission. Originally built in 1880 and 1900 respectively for the purposes of supporting the local water system, the dams had been offline since the 1930s and were only serving to impede upstream passage for Central California Coastal steelhead. Removal of these dams will enhance native fish habitat and improve flow on Alameda Creek. Contact Jeff Miller, Alameda Creek Alliance, (510) 499-9185, alamedacreek@hotmail.com.

Horse Creek Dam, Horse Creek, CA: This 12-foot dam is located in the Sisquoc Wild and Scenic River corridor of the Los Padres National Forest. The dam is a complete barrier to the endangered southern steelhead and is being removed to restore access to approximately 13 miles of habitat. The structure was removed in October 2006. This project was funded in part through the partnership between NOAA Community-based Restoration Program and American Rivers. Contact Steve Rothert, American Rivers, (530) 478-5672, srothert@amrivers.org.

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Tucker Road Ford, Soquel Creek, CA: This 5-foot high concrete ford on Soquel Creek was removed in 2006 and replaced with a 120-foot bridge. Removal of the ford, which originally blocked steelhead and coho salmon habitat, is expected to provide access to 2.5 miles of salmonid spawning and rearing habitat, decrease sedimentation and pollution of Soquel Creek, and increase native riparian vegetation at the project site. This project was funded in part through the partnership between NOAA Community-based Restoration Program and American Rivers. Contact Steve Rothert, American Rivers, (530) 478-5672, srothert@amrivers.org.

Unnamed Dam, Ward Creek, CA: This unnamed concrete dam on Ward Creek was originally built as a private water system that is no longer in use. Removal of this dilapidated structure occurred in fall 2006. The project is part of a larger watershed effort known as the Ward Creek Watershed Restoration Project and is expected to benefit erosion problems and migratory fish habitat. Contact Peter Maholland, California Tahoe Conservancy, (530) 542-5580.

Cove Dam, Bear River, ID: The Cove Dam, an 89 year old former hydropower dam, was removed in September 2006 by Pacificorp, the dam's owner. The removal was a collaborative effort that came as a result of the hydropower relicensing process this aging dam was undergoing. Once complete, this restored stream will benefit native fish populations and recreational interests. The project cost is estimated to be around \$3 million. Contact (pending)

Ballou Dam, Yokum Brook, MA: This 10-foot tall by 50-foot long concrete dam was originally part of a now closed mill complex. The dam was no longer used for its original purpose and blocked an Atlantic salmon restoration stream with high quality habitat for coldwater species. Ballou Dam was removed by the Town of Becket and funded by a partnership developed by the Massachusetts Riverways Program. Removal was completed in December 2006. Contact Tim Purinton, Massachusetts Riverways, (617) 626-1542, tim.purinton@state.ma.us.

Upper Cook's Canyon Dam, Galloway Brook, MA: Upper Cooks Canyon Dam was a low-hazard 9.5-foot high and 84-foot long earthen berm dam with a concrete and wood control structure. It served no current purpose and was removed because of the owner's liability concerns and restore habitat for resident species. The dam was removed in June 2006. Contact Tim Purinton, Massachusetts Riverways, (617) 626-1542, tim.purinton@state.ma.us.

Robbins Dike Dam, Red Brook, MA: This was an earthen berm dam with a wood control structure, estimated to be 5.5 feet high and 100 feet long. Built in the early 1900s, the dam was meant to promote trout spawning in a fishery created by the impoundment, as well as preserve water levels for a defunct cranberry operation. As understanding of fish behavior and spawning habits has improved since those times, the dam was removed in fall 2006, because it inundated salter brook trout spawning habitat with excessive sediment. Contact Tim Purinton, Massachusetts Riverways, (617) 626-1542, tim.purinton@state.ma.us.

Madison Electric Works Dam, Sandy River, ME: The Madison Electric Works Dam is a small hydropower dam that was removed in 2006. The dam was removed as part of a license surrender by Madison Electric Works, the dam's owner, and is expected to open more than 30 miles of historic spawning habitat for Atlantic salmon, American shad and other migratory fish. Contact Laura Wildman, American Rivers, (860) 652-9911, lwildman@amrivers.org.

Dimondale Dam, Grand River, MI: The two structures of this earthen dam were built in 1880 and, together, were 5 feet high and 300 feet long. They were originally constructed for recreational and mill use, but over time have substantially failed and will be partially removed and replaced with a “W” weir to restore fish passage and prevent migration of accumulated sediments. The project will also allow for the improved use of the park and the river. The Lansing Board of Power and Light, the dam’s owner, is collaborating with the Michigan Department of Natural Resources and the Village of Dimondale on the removal. Originally expected to be taken out in 2005, the removal was delayed due to permitting issues. Removal occurred in July 2006. The project is expected to cost \$442,400. Contact Chris Freiburger, Michigan Department of Natural Resources, (517) 373-6644, freiburg@michigan.gov.

Hersey Dam, Hersey River, Tributary to the Muskegon River, MI: The Hersey Dam was removed in September 2006 in order to restore this premier coldwater trout stream. Removing the dam and sediment that has accumulated behind it will restore the Hersey's natural flow and water temperature, improve fish habitat and increase recreational opportunities. Contact Sharon Hanshew, Michigan DNR, (517) 335-4058, hanshus1@michigan.gov.

City of Charlotte Dam, Battle Creek River, MI: Built near the turn of the century and used to provide cooling water for turbines of a public water facility, the dam was about 6 feet tall and made of concrete. It was removed to allow for natural river function and fish passage and also to return the degraded stream back to a viable river within the City of Charlotte’s park system. This project involves not only the dam removal, but also restoration of a mile-long section of river that is being re-meandered (from a straight ditch). Removal occurred in October 2006 for a cost of \$180,000. Contact Chris Freiburger, Michigan Department of Natural Resources, (517) 373-6644, freiburg@michigan.gov.

Potagannissing Dam, Potagannissing River, MI: The state-owned Potagannissing Dam was approximately 6-feet tall and 75-feet wide. The dam was removed in 2006 to improve fish passage, primarily northern pike. In order to maintain water levels in the impoundment and still allow for the passage of fish, approximately 4-foot of head of the dam was removed and a series of three rock weirs were built below the dam to construct rapids that will allow all fish species to have unimpeded fish passage. Contact Byron Lane, Michigan Department of Environmental Quality, (517) 241-9862.

Stimson Dam, Blackfoot River, MT: The removal of the Stimson Dam on the Blackfoot River served as the lead-in for the Milltown Dam removal, which is expected to occur in 2007. Built in 1884 to power a local sawmill, the dam had suffered severe ice damage in 1996. Once Milltown is removed and riverine habitat starts to restore itself, native fish will have access to habitat up past the former Stimson site. Contact Matt Clifford, Clark Fork Coalition, (406) 542-0539.

Harry Pursel Dam, Lopatcong Creek, NJ: (Phillipsburg County) This 15-foot high dam was originally built in 1925 to provide water for a working mill owned by Henry Pursel. By 1945, the mill was converted into a local Agway store. More recently, the mill dam was in a state of disrepair, having been listed as a significant hazard by New Jersey dam safety officials. Because the dam had outlived its original purpose and was a liability, the owner agreed to remove most of

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the structure and it was taken out in the spring of 2006. The dam was the only blockage on Lopatcong Creek and its removal has opened up 10 miles of additional spawning habitat for American shad and other migratory species. Benefits of the removal have already begun to be realized. During the spring floods of 2006, adjacent property and the local Agway store escaped the flooding they have seen in years past. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Stephanie Lindloff, American Rivers, (518) 482-2631, slindloff@amrivers.org.

Buck & Jones Dam, Little Applegate River, OR: Originally constructed in 1900 for the purposes of flood irrigation, the Buck & Jones Irrigation Dam is slated for removal in fall 2006. The irrigators are converting to a sprinkler irrigation system. Removal of this dam should improve fish passage, stream flow and reduce the temperature of the river. Steelhead (rainbow trout) and cutthroat trout regularly use this section of river. Contact Brent Crowe, Oregon Department of Fish and Wildlife, (541) 826-8774, Brent.D.Crowe@state.or.us.

Shissler Dam, Tributary to Bennett Run, PA: This privately owned dam was originally built for recreation/aesthetic purposes and was removed in late summer 2006. The removal was ordered by the PA Department of Environmental Protection because the dam overtopped and had structural damage. The removal opened up 1.1 miles of stream, reducing thermal impacts on the stream. Contact Vince Humenay, Bureau of Waterways Engineering, (717) 783-7482, vhumenay@state.pa.us.

Old Furnace Dam, Black Log Creek, PA: A concrete, run-of-the-river dam, Old Furnace Dam was 8 feet in height by 150 feet in length. The dam was built in 1918, likely for water power. Old Furnace Dam was partially breached, and removed to eliminate a safety hazard, prevent further deepening of the plunge pool, reduce streambank erosion considerably, and restore a high quality riffle. Full removal occurred in late 2006. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Palmerton Dam, Lehigh River, PA: This 2.5-foot high, 300-foot long dam across the Lehigh River is considered an “orphaned” dam with no owner and is therefore a ward of the state. Its original purpose was industrial water supply. Its removal is part of an effort to restore migratory fish runs to the Lehigh River and improve fish habitat. Palmerton Dam was taken out in April 2006 at a cost of \$83,000. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Chip Shafer, Pennsylvania Department of Environmental Protection, (717) 783-7950, fschaffer@state.pa.us.

Graceland Dam, tributary to Neshannock Creek, PA: Originally 17 feet in height and 30 feet in length, the dam was breached to 4 feet in height by several storms and high water events. Built in the 1930s out of earth and stone with concrete, the dam was originally meant to create an ornamental pool. The dam has exacerbated localized flooding and erosion, causing degradation of the streambank near the dam. At an estimated cost of \$30,000 for removal, taking out the dam will eliminate a public safety hazard caused by the highly unstable and partially breached structure as well as open several miles of habitat to fish and other aquatic species. Removal occurred in fall 2006. The project is funded in part through an American Rivers’ Free Flowing

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Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org

Millmont Dam, Penns Creek, PA: Millmont Dam was a low-head dam removed in June 2006. The removal is expected to open more than nine miles of habitat to migratory fish, as well as reducing the occurrence and severity of flooding on upstream properties. Contact Vince Humenay, Bureau of Waterways Engineering, (717) 783-7482, vhumenay@state.pa.us.

Frankford Dam, Pennypack Creek, PA: (City of Philadelphia) Frankford Dam, owned by the City of Philadelphia, was approximately 10 to 15 feet high and about 150 feet long. Although storms have created breaches in the dam, the remaining debris was continuing to impede fish migration. A plan was developed to allow for the partial removal of the obstructions while preserving the historical integrity of the remaining infrastructure. This will allow for fish passage and help restore the ecological health of Pennypack Creek. Removal occurred in October 2006. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Jason Cruz, Philadelphia Water Department, (215) 685-4946, Jason.e.cruz@phila.gov.

Rhawn Street Dam, Pennypack Creek, PA: (City of Philadelphia) The third blockage on Pennypack Creek, a tributary of the Delaware River that flows through Fairmount Park in downtown Philadelphia, was removed in November 2006. Owned by Fairmount Park, Rhawn Street Dam was constructed of stone blocks and was partially damaged by floods. It was one of eight blockages on Pennypack Creek through the park and was removed to promote passage of migratory fish species and to improve fish habitat. All eight blockages on the creek will be addressed over the next few years. Historical interpretive signage at the site explaining the original uses of the mill dam will be part of the project. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

James Ford's Dam, Pequea Creek, PA: This dam was originally used for water power and was constructed diagonally across the creek to divert water into a headrace. It was 5 feet high and 300 feet long and consists of dry masonry and some timber. It was a low hazard dam and was built in the overflow style that intentionally permitted some water to cross the structure. Its age is unknown, but it was first inspected and photographed by the state in 1919. The impoundment was 4 acres, with a maximum depth of 4 feet. A stream restoration project was being planned through a local sportsmen's group when removal was suggested as a means to restore a larger section of the river. This dam was removed in April 2006, at a cost of \$46,000. The removal of this dam along with the other restoration work will restore over 2 miles of Pequea Creek, reduce localized flooding, improve water quality and allow passage for fish and other aquatic organisms. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Silver Spring Dam, Trindle Spring Run, PA: This 9-foot high dam, built of hand-cut stone, was the first blockage on Trindle Spring Run approximately ¼ mile from its confluence with Conodoguinet Creek, a major tributary of the Susquehanna River near Harrisburg. The creek

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supports a reproducing population of rainbow trout, and the dam was removed to improve fishing habitat as well as to remove a liability to the new dam owner. The dam is over 150 years old and was originally built to power a grist mill, but it has not been used for this purpose for many decades. The Pennsylvania Fish and Boat Commission oversaw the removal to ensure that it does not harm resident trout. Anticipated costs of removal are unknown as they will be carried by the new owners. Removal was completed in July 2006. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Ward and Lochner Dams, Smithtown Creek, PA: (Bucks County) These two small dams on Smithtown Creek, a tributary of the Delaware River, were removed in April 2006. Lochner Dam was a 7-foot high stone dam built to provide a swimming hole and was owned by a private owner who wants to improve the creek's water quality and fisheries habitat and eliminate a liability. Ward Dam, a 8-foot high, 50-foot wide concrete dam downstream of Lochner Dam, was also privately owned and removed to restore the creek and eliminate a liability. Because there is still one dam downstream of these two, there are no immediate benefits to migratory fish. The approximate cost of both removals is \$50,000. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Hackenberg Dam, Strodes Run, tributary to Juniata River, PA: Hackenberg Dam was a small 4-foot by 35-foot concrete dam in a severely deteriorated condition. It was an impediment to passage of fish, caused severe erosion, and contributed to localized flooding issues. The removal, which took place in April 2006 and cost approximately \$6,000, should reduce erosion and flooding while restoring a high quality cold water fishery. Contact Dave Kristine, Pennsylvania Fish and Boat Commission, (814) 353-2225, dkristine@state.pa.us.

Iron Stone Mine Dam, Swatara Creek, PA: This 4-foot high, 500-foot wide dam was the first blockage across Swatara Creek approximately ½ mile from the creek's confluence with the Susquehanna River and was removed in February 2006 at a cost of \$83,000 to eliminate a liability and to promote migratory fish passage. The dam was owned by a private trust, but its removal was coordinated closely with the borough of Middletown, just upriver from Three Mile Island. The borough hopes to improve access for boaters and for hikers with a greenway along the creek. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Mohnton Dam, Wyomissing Creek, PA: (Town of Mohnton) Mohnton Dam was constructed in the mid 1800s to power an iron works mill. In the early 1900s the mill was decommissioned and the dam was converted for use as a public water supply. This second use ended in the 1970s, and the dam has remained unused since this time. The dam has caused severe sedimentation of the impoundment; dam removal will help restore the creek and allow for the passage of fish. Removal occurred sometime in fall 2006. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

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Dalewood Dam, unnamed tributary of Ball Mountain Brook, VT: This was an 18-foot high by 190-foot wide earthen dam. It was built in 1977 for recreational and aesthetic purposes. Recently, the outlet structure was failing so the owner drained the pond. Rather than reconstructing the outlet, the owner opted to replace the outlet structure with a fish-friendly box culvert. A public road crosses the top of the dam, so it cannot be completely removed. The replacement should restore stream habitat in the former impoundment and enable fish passage. Removal was completed in October 2006. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@state.vt.us.

Iron Run Dam, Iron Run Creek, WI: Removed in 2006. Contact: Dan Koich, Wisconsin Department of Natural Resources, (715) 839-3769, Daniel.Koich@dnr.state.wi.us.

Manchester Mill Dam, Grand River, WI: Built in 1854 as a source of water power for a grist mill, this 12-foot earthen and concrete run of the river dam was removed in February 2006. The dam was a safety liability and had been under orders for repair since the early 1980s and there was concern that the structure might fail entirely. The cost of removal was approximately \$20,000 and was funded by two grants: the Wisconsin Department of Natural Resources Abandoned Dams Program, and the USDA Wildlife Habitat Incentives Program. Costs are pending for minor stream bank stabilization and aquatic habitat restoration. In addition to eliminating safety concerns, dam removal opened up 12 miles of habitat and fish passage to warm water fish species. Contact Derek Kavanaugh, Green Lake County, (920) 294-4051, dkavanaugh@co.green-lake.wi.us.

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Pizzini Dam, Eight Mile River, CT: This 4.5-foot stone masonry dam was removed in July 2005. This structure was removed as part of a larger restoration effort on the Eight Mile River and opened the remaining historical habitat to fish and restore natural riverine functions of the river. Contact Laura Wildman, American Rivers, (860) 652-9911, lwildman@amrivers.org.

South Batavia Dam, Fox River, IL: The Kane County Forest Preserve District owned this 7-foot high and 700-foot long 87-year old dam. It was scheduled for removal in September 2002 to eliminate the public safety hazard presented by its poor condition and to allow for the passage of fish. However, a review process carried out by the state and federal regulatory agencies delayed removal. While the plans were being reviewed, storms created significant breaches that now enable fish to move past the dam. Because of these breaches, the removal was delayed throughout 2004 and the full dam was not removed until 2005. Contact Drew Ullberg, Kane County Forest Preserve, (630) 232-5980.

Octoraro Rubble Dam, Octoraro Creek, MD: Removed in October of 2005, the Octoraro Rubble Dam previously was the only blockage on Octoraro Creek, a tributary of the Susquehanna River just below the Pennsylvania line in Maryland. The dam was blocking an estimated annual run of 600,000 blueback herring, as well as hickory shad, from entering the creek's 19 miles of high quality habitat. The removal cleared the way for these fish to utilize upstream spawning grounds. The project was funded in part through a partnership between

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NOAA Community-based Restoration Program and American Rivers. Contact Jim Thompson, Maryland Department of Natural Resources, (410) 260-8279, jthompson@dnr.state.md.us.

Grayling Dam, AuSable River, MI: Built in 1933 and owned by the city of Grayling, the Grayling Dam was 9 feet high with an 85 acre pond. The community chose a partial removal in order to promote healthy stream ecosystem function by restoring free movement of aquatic organisms and restoring water quality to nearly pre-dam conditions while managing instream sediments. A partial removal also retains a local point of interest that is important to the community. The breach, which occurred in 2005, was funded in part by Sport Fish Restoration Act funds and cost \$391,925. Contact Jessica Mistak, Michigan Department of Natural Resources, (906) 249-1611, mistakjl@michigan.gov.

Otter Tail Power Dam, Red Lake River, MN: Originally built to provide power to the town of Crookston, the 10-foot high Otter Tail Power Dam was removed in 2005 because of safety and bank stability issues. Since the 1950s, some 18 deaths have occurred at the site and erosion had become a real threat to the homes and hospital along its bank. The removal is part of a larger project aimed at shoring up stream banks, widening the downstream channel for flood control, and restoring a park near the removal site. Because the dam pool provided stability, counterbalancing upstream dikes, a series of rapids were designed into the removal to maintain water levels and provide a recreational opportunity for interested kayakers. The removal of the Otter Tail Power Dam also allows sturgeon access to upstream spawning habitat. Total cost for the removal phase of the project was \$1.4 million. Contact Keith Mykleseth, City of Crookston (Alderman)/The Nature Conservancy, (218) 637-2146, kmykleseth@tnc.org.

Lowell Dam, tributary of the Nuese River, NC: A company named Restoration Systems purchased the 10 foot high concrete gravity dam for the purpose of mitigation credits and removed it in the fall of 2005. The dam had been built about 100 years ago and used as a mill. Its removal opens about 39 miles of spawning habitat and there are already reports of shad migrating past the former dam. Contact Jim MacBroom, Milone & MacBroom, (203) 271-1773, jimm@miloneandmacbroom.com.

Carbonpin Dam, tributary to the Nuese River, NC: Restoration Systems, LLC purchased the dam (along with the Lowell Dam) for the purpose of mitigation credits and removed the structure in the fall of 2005. The dam was 25 feet high, topped by an inactive FERC power house. The removal went as planned, except for uncovering a large amount of debris in the dam's pool. This material, consisting largely of a submerged log jam, was also removed. Contact Jim MacBroom, Milone & MacBroom, (203) 271-1773, jimm@miloneandmacbroom.com.

Champlin Pond Dams, Clark Brook, NH: These two dams were removed in 2005, with final inspection occurring in June 2006. The removal was part of a mitigation package for the Skyhaven Airport project. This restoration includes the transfer of 184 acres of land to the Society for the Protection of New Hampshire Forests. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

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Munroe Falls Dam, Cuyahoga River, OH: This 11-foot high dam was removed in 2005 by the Summit County Department of Environmental Services as part of an effort to improve water quality on the Cuyahoga River.

Benscreek Intake, Ben's Creek (a tributary to the Little Conemaugh River), PA: Built around 1900 to 1905, the Ben's Creek Intake was approximately 6 feet high by 60 feet wide. The Intake was originally constructed to provide a water source to the steam locomotives along the mainline of the Pennsylvania Rail Road in the Portage and Wilmore areas. Removal reduces liability concerns and eliminates the financial burden of maintaining the dam. The removal, which occurred in 2005, allows for habitat restoration on the Little Conemaugh River. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Ed Englehart, Highland Water and Sewer Authority, (814) 266-3146, eenglehart@highlandwater.net

Birch Run Dam, Birch Run, PA: This 60-foot earthen water supply dam was located on Birch Run, which flows into the Conococheague Creek. The city of Chambersburg owns this now obsolete dam and decided to remove it due to the dam's failure to meet dam safety standards. It was removed in 2005. Contact Bruce Mcnew, City of Chambersburg, (717) 261-3288, bmcnew@chbgboro.com.

Lower Lloydell Dam, South Fork of the Little Conemaugh River, PA: Built around 1900 to 1910, the Lower Lloydell Intake when built was 5 feet high by 70 feet wide. The dam was originally constructed to create a water reservoir to be used by its owner, Lloydell Water Co. (a predecessor to Highland Sewer and Water Authority) to supply water, via pumping, to the coal-mining community of Dunlo/Llanfair. Removal reduces liability concerns and eliminates the financial burden of maintaining the dam. The project, which resulted in a January 2005 removal, allows for habitat restoration on the Little Conemaugh River. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Ed Englehart, Highland Water and Sewer Authority, (814) 266-3146, eenglehart@highlandwater.net.

Sharrer's Mill Dam, Conewago Creek, PA: (Adams County) Sharrer's Mill Dam was originally constructed for use by a flour mill. The dam is no longer in operation, but the mill building is still used to mix livestock feed. The dam is 6.5 feet high and 260 feet long. Recently, Conewago Creek breached the south side of the dam and created a new creek, causing safety and ecological concerns that prompted the proposal to remove the dam. The project removed the portion of the dam that lies across the stream channel, leaving the abutments in place on either side of the bank for stability and posterity. This took place in 2005. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org

Siloam Dam, Conococheague Creek, PA: (Chambersburg County) Siloam Dam is owned by the City of Chambersburg and was one of two blockages on the Pennsylvania portion of this creek, which drains into the Potomac River in Maryland. The dam had not been used by the city for decades and was considered a liability and an impediment to water quality and resident fish species. It was removed in June 2005, and a local watershed group—the Conococheague Watershed Association—is actively monitoring this site and the downstream dam at Wilson

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College (also slated for removal) to record pre- and post-removal changes in water quality and benthic life. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Bruce Mcnew, City of Chambersburg, (717) 261-3288, bmcnew@chbgboro.com.

Goldsboro Dam, Fishing Creek, PA: This 4-foot high dam, constructed out of utility poles and corrugated metal, was the only blockage on this 19-mile creek, a tributary of the Susquehanna River. It was removed in June 2005 as part of an experimental project designed to promote fish passage while also preserving the scour hole below the dam and the small impoundment above the dam to accommodate Goldsboro borough's interest in maintaining a water supply for its fire trucks and a spring fishing derby site. The dam was replaced with two large W-shaped rock crossveins that create two step-pools that recreate deep-water habitat for the fishing derby but still allow migratory and resident fish passage to the upstream portions of the creek. A dry hydrant built along the edge of the creek as part of the project allows the borough's fire trucks improved access to fill up their tanker trucks. Total cost of the removal and construction of weirs was \$45,000. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers, as well as an American Rivers' Free Flowing Pennsylvania grant. Contact Bill Weihbrecht, URS Corporation, (717) 620-2277.

Kohut Pond Dam, Hess Run, PA: This 12-foot high earthen water-supply dam on private property is part of an emergency action led by the PA Department of Environmental Protection to protect downstream property when heavy rains undercut this dam. The dam failed and was partially rebuilt earlier in 2005, but as a high-hazard dam with potential to cause downstream loss of life or property it has been required to be removed by the state. The dam removal, which was complete in August 2005, should also improve local fish habitat, particularly for trout. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Tom Bold, Pennsylvania Department of Environmental Protection, (717) 772-5950, tbold@state.pa.us.

Goodrich Dam, Perkiomen Creek, PA: Goodrich Dam, the first blockage on Perkiomen Creek approximately ½ mile upstream from the Schuylkill River, was removed in June 2005 as the first of six planned removals on this creek. The 12-foot high concrete and timber-crib dam was originally used to divert water for manufacturing, but its ownership has been contested for the past several years. The Montgomery County Parks Department, Perkiomen Watershed Conservancy, and other groups are working to increase boating access to the creek following these removals and are also discussing extending a hiking-biking trail along the creek to the Schuylkill River. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Scott Carney, Pennsylvania Fish & Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Binky Lee Preserve, Tributary to Pickering Creek, PA: (Chester Springs County) This 8-foot high stone masonry dam was no longer functional and the impoundment created by the dam was almost entirely filled with sediment. It was removed to allow the creek to return to a free flowing state. The owner of the dam, the Natural Lands Trust, plans to dredge the sediment in the impoundment and move the dirt offsite. Sediment removal will return the stream to its original grade elevation. As the restoration effort proceeds, the stream will be realigned with its

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downstream section. The removal took place in 2005. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (717) 783-7482, vhumenay@state.pa.us.

Sharpless Dam, Ridley Creek, PA: The Sharpless Dam, a 12-foot high concrete dam co-owned by the city of Chester and a private owner, was removed in 2005. This dam created a popular swimming hole where many documented drownings have occurred over the years. The original purpose of the 150-year-old dam was for water supply. It was the first blockage on Ridley Creek, after the December 2004 removal of the Irving Mill dam located one mile downstream, and its removal opens up an additional three miles of Ridley Creek, which drains into the Delaware River and has historic American shad use. This removal should improve fish habitat and fish passage and eliminate a known safety hazard. Follow-up projects include a plan to re-establish wetlands on the grounds of Taylor Arboretum next to the dam site by the Crum-Ridley-Chester Watershed Association. Removal cost was \$50,000. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Steve Kosiak, Delco Anglers, (610) 649-3442.

Unnamed Dam, Wallace Run, PA: (Centre County) This 4-foot, privately owned dam was removed in June 2005 to restore this native trout stream and relieve the current owner of liability. Contact Dave Kristine, Pennsylvania Fish and Boat Commission, (814) 353-2237.

Main Street Dam, Wolf Creek, PA: This 12-foot high cement dam sits across Wolf Creek in the center of downtown Grove City and abuts the property of Grove City College. It was removed, along with a second dam that was removed in fall 2004 some four miles upstream, to alleviate liability, flooding, and to improve fish habitat. Wolf Creek does not host any migratory fish species, but boasts a good diversity of resident species and drains eventually into the Ohio River. Follow-up plans include turning the former impoundment area into a passive recreation area for the college or for flood-tolerant athletic fields. The cost of removal is \$30,000. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Scott Carney, Pennsylvania Fish & Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Hoffman Dam, Yellow Breaches Creek, PA: The Hoffman Dam, built around the turn of the century to power a mill, is 8 feet high by 130 feet wide. The mill structure is no longer used as a mill, and the dam serves no purpose. The dam's removal, which happened in 2005, is expected to restore the coldwater fishery in the creek as well as eliminate any liability concerns. Contact Scott Carney, Pennsylvania Boat and Fish Commission, (814) 353-2225, rscarney@state.pa.us.

Rockland Dam, Shenandoah River Middle Branch, VA: The Rockland Dam was removed by a partnership of the Chesapeake Bay Foundation and the Virginia Department of Game and Inland Fisheries to promote passage of American eel and to improve boating safety and aquatic habitat. The 15-foot high concrete dam was privately owned. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Larry Mohn, Virginia Department of Game and Inland Fisheries, (540) 248-9360.

Genesee Roller Mill Dam and Unnamed Dam, Genesee Creek, WI: These two dams, a 15 foot wide concrete dam and a 480 foot earthen embankment, were removed in early 2005. Because of dam failure and safety precautions, the Wisconsin Department of Natural Resources performed drawdowns in 2002 and 2003. In 2003, the Wisconsin Department of Natural Resources purchased the dams and three acres of adjacent property for \$15,000, with the intention of dam removal and river diversion around the highly sedimented millpond. In addition to dam removal, restoration work took place to promote in-stream habitat for naturally reproducing brook and brown trout, and to restore native wetland and riparian habitat in the riparian corridor. Carroll College, Trout Unlimited, and the Wisconsin Wetlands Association worked with the Wisconsin Department of Natural Resources to remove the dam and to raise the estimated \$75,000 removal and restoration costs. The dam removal will allow trout to migrate the entire 6-mile, spring fed stream which boasts high aquatic biodiversity and excellent water quality. Contact Jim D'Antuono, Wisconsin Department of Natural Resources, (262) 574-2122, james.d'antuono@dnr.state.wi.us.

Manchester Dam, Grand River, WI: This 16-foot earthen and concrete dam was removed in early winter 2005. The dam was a safety liability and has been under orders for repair since the early 1980s. There is fear that the structure will fail entirely. It is estimated that the dam removal will cost approximately \$50,000 versus \$411,000 for dam repair. Dam removal has been funded by two grants: the Wisconsin Department of Natural Resources Abandoned Dams Program, and the USDA Wildlife Habitat Incentives Program. Costs are pending for minor stream bank stabilization and aquatic habitat restoration. In addition to eliminating safety concerns, dam removal will open up 12 miles of habitat and fish passage to warm water fish species. Contact Derek Kavanaugh, Green Lake County, (920) 294-4051, dkavanaugh@co.green-lake.wi.us.

Spitzer Dams, Milhome Creek, WI: The River Alliance of Wisconsin partnered with the Wisconsin Department of Natural Resources and Sheboygan County Parks Department to remove remnants of four concrete dams and a concrete hatchery raceway in the headwaters of a coldwater trout stream. These dams and raceway were removed in fall 2005 and additional instream restoration work was completed in spring 2006. The project costs were approximately \$50,000, and were provided by a Wisconsin Coastal Management Grant, the Wisconsin Department of Natural Resources, and Trout Stamp funding. These removals will restore instream habitat of the headwaters and spring pond of the Class I brook trout stream, and open up habitat for fish for as far as 27 stream miles. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424, hsarakinos@wisconsinrivers.org.

Meyer Dam, Mullet River, WI: In early 2005, the Wisconsin Department of Natural Resources removed the Meyer Dam and 80 feet of embankment. The removal also included stabilizing banks and restoring disturbed areas. The city of Plymouth initially looked at site because of sedimentation problems and repeated neighborhood basement flooding. At the outset, the city applied for a permanent drawdown with the intention of creating a walking trail through a riverine habitat at a cost of \$230,000 over five years. However, heavy rains in 2004 destroyed much of their work, and the city applied for abandonment. Dam removal funds came from Environmental Damage Compensation Fund. Removal costs were approximately \$7,600 compared to an estimate of \$200,000 for dredging (excluding any dam maintenance or ongoing dredging). The removal may affect populations of smallmouth bass in the river. Contact Brent

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Binder, Wisconsin Department of Natural Resources, (920) 892-8756 Ext.3032,
brent.binder@dnr.state.wi.us.

Millpond Dam, Osceola Creek, WI: This five-foot rock dam was removed in summer 2005, and was first uncovered when a flood in September 2002 broke through a dam further downstream, and drained the impoundment. Now that the dam has been removed, the Wisconsin Department of Natural Resources intends to rebuild the stream banks and provide better habitat for trout. In addition, final clean-up of the downstream dam, which is not impeding river flow, will take place. Final removal costs are still pending and were provided through Trout Stamp funding. Stream restoration costs are estimated at approximately \$38,000 over a three year period. Wisconsin Department of Natural Resources staff predicts Osceola Creek will return to a self-sustaining trout fishery by 2010. Contact Heath Benike, Wisconsin Department of Natural Resources, (715) 637-6864, heath.benike@dnr.state.wi.us.

Planing Mill Dam, Waupaca River, WI: The city of Waupaca and the Wisconsin Department of Natural Resources removed the concrete dam in summer 2005 to eliminate a public safety hazard, to improve aquatic habitat, and to enhance canoeing opportunities. The project also included seeding and stabilization of the banks, and is expected to benefit fish species such as brown trout, greater redhorse, smallmouth bass and state-threatened western sand darter that were blocked by the structures. The city of Waupaca and a Wisconsin Department of Natural Resources grant funded the removal, at a cost of approximately \$20,000. Contact John Edlebeck, City of Waupaca, (715) 258-4420, jaewaup@yahoo.com or Scott Koehnke, Water Management Specialist, Wisconsin Department of Natural Resources, 715/526-4232; 715/524-3214(fax), scott.koehnke@dnr.state.wi.us.

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Unnamed Dam, Allison Creek, AK: This 6-foot high and 30-foot wide, privately owned dam was removed in 2004. Originally built for stream gauging in 1970, the dam no longer served its intended purpose and was a blockage to fish passage on Allison Creek. Its removal is expected to help restore Allison Creek's ecological integrity by restoring the free movement of fish and other aquatic organisms. Contact Meagan Boltwood, Anchorage Waterways Council, (907) 743-1052, Meagan@awcgroup.org.

Marvel Slab Dam, Cahaba River, AL: This 6-foot high by 210-foot wide concrete dam was removed in October 2004. The dam was originally built in 1965 as bridge (consisting of 46 culverts) that allowed coal and logging trucks and strip mining equipment to cross the river. Abandoned in the 1980s, the dam blocks access to habitat for migratory fish; has resulted in habitat destruction for mussels, freshwater snails, and plants; and is a safety concern for recreational users. The removal is expected to restore the connectivity of the stream, providing access to historic spawning and feeding habitat. Contact Paul Freeman, The Nature Conservancy or Alabama, (205) 251-1155, pfreeman@tnc.org.

York Creek Diversion Structure, York Creek, CA: Removal of this concrete masonry diversion structure opened 2.5 miles of high-quality shaded habitat for steelhead and native rainbow trout and increased delivery of spawning-sized gravel to lower York Creek and the Napa

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River. The diversion structure was removed and replaced with an alternative diversion device—an infiltration gallery in the streambed—to prevent entrainment of juvenile steelhead in 2004. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Steve Rothert, American Rivers, (530) 478-5672, strothert@amrivers.org.

Chase Brass Dam, Naugatuck River, CT: This 4-foot high by 100-foot long dam was built around the turn of the century to provide water to a nearby brass mill. The original timber crib structure of the orphaned Chase Brass Dam is now encased in concrete and presents liability issues due to lack of proper maintenance. The dam, which is part of a larger network of dams along the Naugatuck River, was removed to the bedrock in August 2004 to provide access to historic spawning habitat for several migratory fish species and improve water quality. To date, at least five of the eight dams that are part of the Naugatuck River restoration project have already been removed. Contact Ray Spry, Waterbury's Water Pollution Control Facility, (203) 753-0217.

Unnamed Ford, Rock Creek, Washington, D.C.: The second of two 2 to 4 feet tall unnamed fords (abandoned road crossings) was removed in fall 2004. The ford was removed as part of a larger environmental mitigation package for the Woodrow Wilson Bridge project, which also includes an additional 22 blockages (e.g., abandoned sewer lines, weirs, dams) removed or retrofitted with fish passage. Removal of the ford, which is owned by the Smithsonian National Zoological Park, opened additional habitat for alewife, blueback herring, and American eel. Contact Serena McClain, American Rivers, (202) 347-7550, smcclain@amrivers.org.

Hopkinton Dam, IA: According to an article in the *Waterloo Cedar-Falls Courier*, the Delaware County Conservation Board removed the Hopkinton Dam in 2004. We are still in the process of tracking down reliable contact information for this project.

Charlotte City Dam, Battle Creek River, MI: This 8-foot high earthen dam was built in 1903 for recreational use. The city of Charlotte drew down the dam in 2003 and worked with Michigan Department of Natural Resources (DNR) and the local conservation district to remove the concrete spillway and restore the stream channel in 2004. The removal, which cost \$160,710, was funded by the Michigan DNR, the city of Charlotte, and the Great Lakes Commission. The removal is expected to improve water quality, reduce erosion, and provide habitat for warm-water fisheries such as pike and smallmouth bass. Contact Chris Freiburger, Michigan DNR, (517) 373-6644, freiburg@michigan.gov.

Elm Street Dam, Battle Creek River, MI: This sheet pile dam, constructed in the 1920s, was 3.5 feet high and 100 feet long. Originally constructed by Consumers Energy to maintain the water level for a cooling water intake, it no longer served its purpose. Consumers Energy agreed to work with the Michigan DNR toward removal to restore fish passage and improve water quality and stream habitat in the vicinity. The dam was removed in 2004. Contact Chris Freiburger, Michigan DNR, (517) 373-6644, freiburg@michigan.gov.

Marquette City Dam #1, Dead River, MI: This 10-foot high, 200-foot long retired hydropower dam was owned by the Marquette Board of Light and Power. It was ordered to be removed by

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the Federal Energy Regulatory Commission (FERC) in order to restore fish passage and improve fisheries habitat. The Marquette County Conservation District received a Federal Emergency Management Agency (FEMA) grant to remove the dam and continued working with the Board of Light and Power to complete the project in June 2004 at an estimated cost of \$200,000. Rather than remove the entire structure, the final project resulted in a partial breach that freed the river and restored passage for fish. Contact Jessica Mistak, Michigan DNR, (906) 249-1611, mistakjl@michigan.gov.

Kimberly-Clark Dam, North Branch Spars Creek, MI: This 2-foot high, 200-foot long earthen dam was built in 1965 for recreational use as a trout pond. The dam, which was owned by Michigan DNR and was located in the Sturgeon River watershed, was removed in 2004. Contact Sharon Hanshue, Michigan DNR, (517) 335-4058, hanshus1@michigan.gov.

Tannery Creek Dam, Tannery Creek, Petoskey, MI: Tannery Creek Dam was a small dam that prevented upstream fish passage and caused considerable warming of downstream waters. It was located on Tannery Creek, a coldwater stream that supports resident brook trout. Removal of the dam restored three miles of fragmented brook trout habitat. This removal was completed in November 2004. Contact Susan Wells, U.S. Fish & Wildlife Service, (989) 356-5102.

West Henniker Dam, Contoocook River, NH: This 10-foot by 130-foot concrete gravity dam was originally built for a paper mill. Since the early 1980s, however, the dam had not served any purpose. Because the site, which was owned by the town of Henniker, is heavily contaminated, it is considered a Brownfield by the U.S. Environmental Protection Agency and thus requires emergency action. Removal of the dam occurred during summer 2004. The project restored 15 miles of Contoocook River from Hillsborough to Hopkinton to free-flowing condition, which is expected to benefit juvenile Atlantic salmon, American eel, and trout. The estimated cost of removing the dam was \$160,000. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Grace Levergood, New Hampshire Department of Environmental Services, www.des.nh.gov/dam/damremoval, (603) 271-8870.

Bellamy River Dam V, Bellamy River, NH: This crumbling timber crib dam was roughly 4 feet high and 90 feet wide. Originally scheduled for removal in 2003, permitting delays pushed this project back a year—it was removed in 2004. Removal of the head-of-tide dam provided additional habitat for smelt and river herring. Contact Cheri Patterson, New Hampshire Fish and Game Department, (603) 868-1095, cpatterson@nhfgd.org.

Badger Pond Dam, Tioga River, NH: This high-hazard, privately-owned dam was partially breached in an emergency action in December 2003. Last summer a 45-foot wide section of the 18-foot high dam was removed to eliminate the public safety hazard. The project also reconnected 12 miles of the Tioga River and tributaries, and is expected to benefit trout, darters and additional resident fish species. Removal of the structure was completed in 2004. Contact Grace Levergood, New Hampshire Department of Environmental Services, (603) 271-8870.

Cuddebackville Dam, Neversink River, NY: This 5-foot tall dam was originally built to divert water into a hydropower canal and was owned by Orange County at the time of its removal. In a

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partnership between The Nature Conservancy and the U.S. Army Corps of Engineers, removal of the Cuddebackville Dam was completed in fall 2004 in order to improve habitat for migratory fish, endangered mussels, and resident fish. Plans for restoration included regrading the streambed, planting, and long-term monitoring. Contact Colin Apse, The Nature Conservancy, (845) 255-9051, capse@tnc.org.

Kent Dam, Cuyahoga River, OH: (city of Kent) In March 2000, the Ohio EPA issued a Middle Cuyahoga River TMDL that formally identified the Kent Dam as a significant cause of water quality problems associated with the Cuyahoga River. Ohio EPA and the city of Kent considered a number of options to meet these standards, including more stringent limits at the city's wastewater treatment plant or modification or elimination of the Kent Dam. However, upgrades at the wastewater treatment plant would have been very costly and had no benefit in meeting water quality standards in the Kent Dam pool. Because of the importance of the dam to the city's history, most of the dam was left in place while routing the river through an old lock at the dam. In order to maintain the appearance of the dam, water is continually cycled over the dam, much like a fountain, while the former impoundment was converted into a park. This project was completed in 2004. Contact Bob Brown, City of Kent, (330) 676-7241, bbrown@kent-ohio.org.

Detter's Mill Dam, Conewago Creek, PA: Approximately 7 feet high by 250 feet long, this structure was an abandoned mill dam constructed from rock indigenous to the area. The structure was in an advanced state of disrepair that allowed water to flow through. Removal took place in June 2004 and has opened seven miles of spawning habitat for American shad, blueback herring, and American eel. In addition to restoring fish habitat, removal was the most cost effective solution for eliminating the safety concerns at the dam. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Durham Dam, Cooks Creek, PA: (Durham Township) Durham Dam was a 10-foot high, unused dam that had become a liability concern. Located just 1,000 feet from the Delaware River, the dam also impeded the movement of American shad and other migratory fish in this ecologically sensitive area. Habitat restoration and safety issues provided the primary motivation for the dam removal project. The dam was removed in April 2004. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (717) 783-7482, vhumenay@state.pa.us.

Cleversburg Water Supply Dam, Milesburn Run, PA: (South Hampton Township) The Cleversburg Water Supply Dam, built in 1902, is 4 feet high with a one-acre impoundment. It was constructed as a water supply dam, but was no longer functional. The dam and impoundment were located within a Pennsylvania state forest, on land managed by the Bureau of Forestry. Stream restoration was the primary reason for dam removal, which was completed in 2004. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (717) 783-7482, vhumenay@state.pa.us.

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Two Unnamed Dams, Poplar Run, PA: (Tremont Township) Both of these unnamed stone masonry dams were between 10 and 12 feet high and were originally constructed to enhance water supply. Both dams no longer served a purpose and were a financial drain. They were removed in the summer of 2004. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (717) 783-7482, vhumenay@state.pa.us.

Irving Mill Dam, Ridley Creek, PA: This 12-foot by 100-foot dam was removed in fall 2004. The dam served no purpose and was in an advanced state of disrepair. The structure was the first dam on Ridley Creek from the confluence of the Delaware River, and its removal opened two miles of spawning habitat for blueback herring, alewife, and possibly American and hickory shad. This project is part of a watershed effort to provide fish passage at the five dams in the Ridley Creek drainage. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Twining Valley Golf Course Dam, Tributary to Sandy Run, PA: (Upper Dublin Township) The Tawning Valley Golf Course Dam was 15 feet high and was originally constructed to provide irrigation to the adjacent golf course and enhance aesthetics. It was backed by a 1.5-acre impoundment. The dam was responsible for downstream flooding, and it presented a significant hazard to a downstream housing development. Removal of the dam was completed in the summer of 2004. Contact Vince Humenay, Pennsylvania Department of Environmental Protection, (717) 783-7482, vhumenay@state.pa.us.

Reedsville Milling Company Dam, Tea Creek, PA: (Mifflin County) Constructed as a mill dam in the 1970s, the Reedsville Milling Company Dam was 14 feet high and 47 feet long. It had a timber crib and a body of rock and concrete and had been reinforced and updated several times. The primary objective of the removal was to restore the ecological health of the stream by stabilizing the stream channel. This dam had already been drawn down under an emergency permit. The impoundment had significant sedimentation, and the project required extensive stream restoration. The dam removal was completed in October 2004. Estimated costs for the removal were \$70,000. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant. Contact Scott Carney, PA Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Charming Forge Dam, Tulpehocken Creek, PA: Built in the 1800s as a source of power for a hammer mill forge, Charming Forge Dam was 7 feet tall by 131 feet long. Its impoundment played host to warm-water fish such as carp and bullhead, and the area below the dam was stocked with trout. The heavy sedimentation caused by the dam had created a dead spot on Tulpehocken Creek. The removal project allowed this section of the Tulpehocken Creek to return to a free flowing state. Rebuilt and modified several times, it was finally removed in 2004. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Upper Grove City Dam, Wolf Creek, PA: Built in 1885 to power a grist mill, the 5.5-foot high, 105-foot long Upper Dam on Wolf Creek in northwestern Pennsylvania was removed in September 2004. The former impoundment area became a park following restoration, and the project had an active partnership among local businesses, conservation groups and others. The

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removal was part of a larger restoration effort that includes removal of the Main Street dam in downtown Grove City in 2005. The project was funded in part through an American Rivers' Free Flowing Pennsylvania grant program. Contact Scott Carney, Pennsylvania Fish & Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Reading Public Museum Dams, Wyomissing Creek, PA: (Reading) Two dams on the grounds of the Reading Public Museum were removed in September 2004. The upper dam was 3 feet high and 45 feet long and was built around the turn of the century. The 8-foot high, 60-foot long lower dam was constructed of rock and was built in the early 1900s after the construction of the Reading Public Museum. The Museum sought their removal because the dams were rundown and a financial burden to maintain. Anadromous fish are expected to benefit from the removals once all eight blockages have been addressed downstream on the Schuylkill River. Because the dams were eligible for listing on the National Register of Historic Places, the removal plans incorporated historical review as required by section 106 of the National Historic Preservation Act. Mitigation included photo documentation of both dams, the preservation of portions of the lower dam, and the preservation of the rock walls that surrounded the impoundments. Part of the restoration effort included educational signage designed by the Reading Public Museum to showcase the river restoration. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers, as well as an American Rivers' Free Flowing Pennsylvania grant. Contact Pete Ponchieri, Reading Public Museum, (610) 371-5850, ex 225, pete356@aol.com.

Embrey Dam, Rappahannock River, VA: (Fredericksburg) In February 2004 the U.S. Army Corps of Engineers, under the watchful eye of Senator John Warner, detonated 600 tons of explosives to breach Embrey Dam on the Rappahannock River in northern Virginia. The initial breaching of this aging structure, which had outlived any initial usefulness, was part of a longer-term removal process that cleared the entire dam out of the river by 2005. With the removal, more than 170 miles of habitat are now open to several species of migratory fish, including American shad and river herring, as well as paddlers and other river lovers. Contact John Tippet, Friends of the Rappahannock, (540) 373-3448, john_tippet@riverfriends.org or Alan Weaver, Virginia Department of Game and Inland Fisheries, (804) 367-6795 alan.weaver@dgif.virginia.gov.

McGaheysville Dam, South Branch of the Shenandoah River, VA: This dam was built in the 1920s as a power source for the city of Harrisonburg. It was damaged in 1958 and had been out of use ever since. The dam footer remained, stretching 350 feet in length and creating a blockage to fish and canoeists. The crumbling structure represented a safety hazard; accidents were not uncommon on its old abutment walls. Removal of this structure was completed in fall 2004. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Serena McClain, American Rivers, (202) 347-7550, smcclain@amrivers.org or Larry Mohn, Virginia Department of Game and Inland Fisheries, lmohn@dgif.state.va.us.

Knightly Dam, Middle Branch of the Shenandoah River, VA: This dam was removed in August 2004. Contact Larry Mohn, Virginia Department of Game and Inland Fisheries, lmohn@dgif.state.va.us.

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Ball Park Dam, Maunasha River, WI: In 2001, the impoundment of the Ball Park Dam was lowered to facilitate repair of an upstream bridge. An inspection of the dam determined that it was in need of numerous repairs estimated to cost over \$750,000, versus \$125,000 to remove the structure. The city of Waterloo decided to remove the 11-foot dam and restore the river and shoreline. Removal of the Ball Park Dam is expected to improve fish movement, species and habitat diversity navigation and water quality of this warm water river. This removal was completed in 2004. Contact Laura Stremick-Thompson, Wisconsin DNR, (920) 387-7876, Laura.Stremick-Thompson@dnr.state.wi.us.

Knowles Dam and Hemlock Dam, Oconto River, WI: These were two small dams under 8 feet in height that were removed from the Oconto River in the Chequamegon-Nicolet National Forest in 2004. Removal of these 110-year old logging dams restored a cold-water fishery and particularly benefited native brook trout populations. Contact Tom Moris, Wildlife Biologist, Chequamegon-Nicolet National Forest, (715) 674-4481.

Kenosha Country Club Dam, Pike River, WI: A novel partnership between a private country club, county, state and federal agencies, and non-profit organizations has led to the removal of the 4-foot high concrete structure which blocks upstream movement of salmon and other fish from Lake Michigan. The dam was removed in 2004. Anticipated benefits include increased habitat for Lake Michigan migratory species. Contact Art Kitchen, U.S. Fish & Wildlife Service, (608) 221-1206, art_kitchen@fws.gov.

Athens Dam, Potato Creek, WI: This rock and concrete dam was less than 10-feet tall and was breached in September 2003 because it was in a state of disrepair and the impoundment waters were damaging nearby park property. Removal of the structure occurred in 2004. Contact Keith Patrick, Wisconsin DNR, (715) 241-7502, Keith.Patrick@dnr.state.wi.us.

Six-Mile Creek Dam, Six-Mile Creek, WI: The dam was removed in late November 2004. This small dam, owned by the Eau Claire Electrical Co-Op, had a notable warming effect and was a physical barrier to cold water fish migration and caused documented warming of stream water. It was located near the Eau Claire Electric Coop building. The dam was one identified by inventory completed several years ago by the Wisconsin DNR and had required several years of actions and monitoring. Contact Dan Koich, Wisconsin DNR, Daniel.Koich@dnr.state.wi.us.

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A-Frame Dam, Brandy Creek, CA: This 30-foot by 100-foot earthen dam was originally built in the 1950's for recreational purposes before the National Park Service owned the land. The dam, which was removed in November 2003, was in major need of repairs and at risk of failing. The National Park Service decided to remove the dam to restore the creek back to its natural condition. After the removal the area was revegetated and trails were rerouted that had previously crossed the dam. Contact Jerry Wheeler, National Park Service, (530) 242-3430, jerry_wheeler@nps.gov.

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Haypress Pond Dam, Haypress Pond, CA: This 20-foot tall earthen dam was originally built for a watering stock. Removal occurred in July 2003 in an effort to restore natural hydrologic conditions (creek and riparian habitat) and to remove breeding habitat for non-native bullfrogs. Contact Darren Fong, Golden Gate National Recreation Area, (415) 331-8716, Darren_Fong@nps.gov.

Cascade Diversion Dam, Merced River, CA: This 18-foot by 184-foot timbercrib dam was originally built in 1916 to supply power to the Yosemite Valley. Located on the Merced River, a wild and scenic river, in Yosemite National Park, the dam had not supplied power to the valley since 1986 and was currently serving no purpose. Because the dam was in an advanced state of disrepair, National Park Service chose to remove the dam and restore this portion of the river. Removal of the dam was completed in December 2003. Contact Steve Evans, Friends of the Rivers, (916) 442-3155, sevans@friendsoftheriver.org.

Unnamed Dam, Murphy Creek, CA: Removal occurred on this 12-foot earthen dam in August 2003. Originally built as a watering hole for cattle from an area ranch, the dam was being removed to restore natural riverine function and is expected to bring wildlife and native salmon back to the creek. The project—which was driven by a diverse partnership including area landowners, the San Joaquin Resource Conservation District, and other public agencies—also included additional habitat restoration work such as riparian tree plantings and erosion control with native grasses. Total cost for the project was approximately \$700,000. Contact John Brody, Natural Resources Conservation Service, (209) 327-2823.

Mumford Dam, Russian River (West Fork), CA: This 60-foot wide dam was removed in summer 2003. The removal of this structure, however, left a 7-foot apron in place that will not be visible or block fish under most flow conditions. It will allow Chinook salmon, Coho salmon and steelhead access to as much as 45 miles of rearing habitat. Removal of the dam restored approximately 720 feet of stream channel below Mumford Dam. The Sonoma County Water Agency is responsible for maintenance and monitoring of the project for five years after construction is complete. Contact Ron Benkert, Sonoma County Water Agency, (707) 547-1905, rcb@scwa.ca.gov.

East Panther Creek Dam, East Panther Creek, CA: This dam owned by Pacific Gas & Electric (PG&E) was breached in July 2003. While this breach restored natural flows to East Panther Creek, portions of the dam were left in place to slowly meter out impounded sediment with removal of the remaining structure scheduled for 2008. PG&E agreed to breach this dam on East Panther Creek, a tributary of the Mokelumne River, as part of a larger restoration settlement allowing them to obtain a new operating license from FERC in 2001. The settlement restored natural flow patterns to the Mokelumne and also includes the removal of West Panther Creek and Beaver Creek dams (see write-ups below). The biggest ecological benefit comes from the fact that the diversion points at these impoundments are no longer used and all of the previously diverted water now remains in the river for conservation purposes. Contact Pete Bell, Foothills Conservancy, 209-296-5734.

West Panther Creek Dam, West Panther Creek, CA: Removal occurred in August 2003 on the 16-foot hydropower dam owned by PG&E. Built in the 1930s, this dam was part of a larger

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complex of dams and reservoirs known as the Mokelumne Project that provided electricity to 200,000 homes. A 1997 flood, however, dumped sediment behind the dam and rendered it ineffective. PG&E agreed to remove this dam on West Panther Creek, a tributary of the Mokelumne River, as part of a larger restoration settlement allowing them to obtain a new operating license from FERC in 2001. The settlement will restore natural flow patterns to the Mokelumne and includes the removal of two dams and the breaching of another in the watershed. The removal on West Panther Creek is expected to open additional habitat for trout and allow sediment to more naturally disperse throughout the system. The biggest ecological benefit comes from the fact that the diversion points at these impoundments will no longer be used and all of the previously diverted water will now remain in the river for conservation purposes. Contact Pete Bell, Foothills Conservancy, 209-296-5734.

Unnamed Ford, Rock Creek, D.C.: The first of two unnamed fords (abandoned road crossings) 2 to 4 feet tall was removed in December 2003. The ford was removed as part of a larger environmental mitigation package for the Woodrow Wilson Bridge project, which also included an additional 22 blockages (e.g., abandoned sewer lines, weirs, dams) removed or retrofitted with fish passage. Removal of the ford, which was owned by the Smithsonian National Zoological Park, opened additional habitat for alewife, blueback herring, and American eel. Contact Serena McClain, American Rivers, (202) 347-7550, smcclain@amrivers.org.

YWCA Dam, Brewster Creek (Tributary to Fox River), IL: This dam was originally used by the YWCA Camp Tu-Endie-Wei for recreational water sports. Because the dam was deemed unsafe and the reservoir was filling with sediment, the YWCA decided to remove the structure instead of undergoing an expensive repair process. Removal of the dam began in June 2003. The project, a phased removal completed in February 2004, is being studied jointly by the USGS and the Illinois EPA in a pilot project evaluating sediment, dissolved oxygen, and geomorphic response. To date, less sediment than expected has moved from the site. Contact Karen Kosky, Kane County Department of Environmental Management, (630) 208-8665 or Steve Pescitelli, Illinois Department of Natural Resources, (630) 553-0164, spescitelli@dnrmail.state.il.us.

Silk Mill Dam, Yokum Brook, MA: This 15-foot concrete dam, which formerly served to power an old mill, was removed in February 2003 to benefit resident and migratory fish populations (Atlantic salmon). This project is part of a larger restoration effort to restore Yokum Brook to free-flowing status with plans for breaching a downstream dam already in the works. Contact Brian Graber, American Rivers, (413) 585-5896, bgraber@amrivers.org.

Copemish Dam, First Creek (tributary to Bear Creek), MI: Built in 1950, this 8-foot high earthen dam was owned by the Village of Copemish primarily for recreational use. The removal, which was conducted in stages, began in 2000 and was done in conjunction with road crossing (snowmobile trail) replacement aimed at restoring fish passage. The removal was completed in 2003 by the Road Commission. Funding for this \$50,000 project was contributed by the USDA Forest Service, the Bear Creek Watershed Council, and Conservation Resource Alliance. Contact Sharon Hanshue, Michigan Department of Natural Resources, (517) 335-4058, hanshus1@michigan.gov.

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Sturgeon River Dam, Sturgeon River, MI: Deconstruction began on this 45-foot hydropower dam in summer 2003 by the hydropower owner, We Energies. The removal of Sturgeon Dam is part of an agreement made by We Energies, federal and state resource agencies, and the Michigan Hydropower Reform Coalition in 1996. The removal of this structure will happen in three phases over a four to five year time period and will open spawning habitat for lake sturgeon. Removing the dam in stages will allow for the reservoir and sediment transport to stabilize and reduce fish and wildlife impacts. Contact Sharon Hanshue, Michigan Department of Natural Resources, (517) 335-4058, hanshus1@michigan.gov.

Haley Dam, Lake Hudson Recreation Area, MI: The Haley Dam served no purpose and it was removed in 2003 to eliminate maintenance costs and to improve fishing.

Bearcamp River Dam, Bearcamp River, NH: This 20-foot by 231-foot concrete dam was removed in fall 2003. The dam was removed to eliminate dam safety concerns and as part of one of New Hampshire's larger river restoration efforts. Removal of this structure increased spawning habitat for brook trout and landlocked Atlantic salmon. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

St. John's Dam, Sandusky River, OH: Because this 7-foot by 150-foot concrete dam, which is owned by the Ohio-American Water Company, was in an advanced state of disrepair, the owner decided removal was more economically viable than repairing or rebuilding the dam. An upstream campsite community raised initial concerns about the removal, but both the water company and the state worked with the community to assuage fears. The dam was breached in spring 2003 to drain the impoundment and protect downstream infrastructure and the remaining structure was removed in fall 2003. Removal of the dam, partially funded by state license plate funds, is expected to improve water quality and fish habitat on this state wild and scenic river. The owner also donated land in the riparian corridor in the form of a conservation easement that was used to build a park and as an access point to the river. Contact Bob Vargo, Ohio Department of Natural Resources, (419) 981-6319, bob.vargo@dnr.state.oh.us.

Unnamed Dam, Ottawa River, OH: This 5-foot by 50-foot dam was located within the Miakonda Boy Scout Camp. It was successfully removed in spring 2003. Contact Larry Goedde, Ohio Department of Natural Resources, (419) 429-8370, larry.goedde@dnr.state.oh.us.

Buck & Jones Diversion Dam, Little Applegate River, OR: This 5-foot by 100-foot concrete diversion dam was removed in 2003 as a joint project of the Applegate River Watershed Council and the U.S. Army Corps of Engineers. This is a Stanchen dam—concrete that spans the channel with metal stanchen placed in the holes, similar to a flashboard. The removal is expected to improve fish passage. Contact Daniel Newberry, Applegate River Watershed Council, (541) 899-9982.

Dinner Creek Dam, Dinner Creek, OR: This 35-foot long and 10-foot high concrete, gravity dam was built in 1925 for a municipal water supply and was completely filled with sediment. The dam blocked upstream migration of fish and other aquatic species, including native cutthroat trout. The U.S. Army removed the dam in August 2003. An interdisciplinary group of researchers at Oregon State University plan to document the results of the removal, including

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impacts on sediment transport, turbidity, channel morphology, and water quality. Contact Laura Bernstein, Umpqua National Forest, (541) 767-5041.

Unnamed Dam, Wagner Creek, OR: Originally built as a diversion point for the city of Talent, this 4-foot concrete dam was removed in November 2003. Removal of this structure opened additional habitat for coho salmon, steelhead, and cutthroat trout. The project was the work of a diverse coalition of partners, including Ashland-based environmental group Headwaters, which is working with the Talent Irrigation District, Oregon Department of Fish and Wildlife, Southern Oregon University's AuCoin Institute, Ashland Watershed Partners, Rogue Basin Technical Pool, Rogue River National Forest and Rogue Valley Council of Governments. This removal is only one in a series of removal and fish passage projects on Neil and Wagner Creeks aimed at restoring fisheries in the basin. Contact Lester Naught, City of Talent, (541) 535-3828, pubworksles@cityoftalent.org.

Black Dam, Conodoguinet Creek, PA: Removal on this 10-foot by 350-foot privately owned concrete dam occurred in July 2003. Once a source of water for an old feed mill, the dam currently served no purpose when it was removed. As one of the last dams on Conodoguinet Creek without fish passage, removal of Black Dam opened 22 miles of habitat for American shad, blueback herring, alewife, and potentially American eel. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Collegeville Mill Dam, Perkiomen Creek, PA: This 6-foot by 250-foot concrete dam was built in 1708 and was previously connected to the Collegeville Mill. The dam served no purpose and had fallen into a state of disrepair. Subsequently, it was removed in fall 2003 to eliminate owner liability and threat to public safety. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Daniel Esh Dam, Mill Creek, PA: Approximately 2 feet high, this Amish-owned dam was removed July 2003. Originally built to impound water for skating and to power a very small pump, the dam was the fifth of six blockages on Mill Creek, a tributary of the Conestoga Creek and the Susquehanna River. The remaining blockages are being addressed through a combination of removals and fish passage projects, most of which are currently in the design stage. In addition to dam removal and buffer planting, U.S. Fish and Wildlife Service partners built a single-strand high-tensile-wire fence along both streambanks to keep cattle from walking into the stream. Follow-up work includes building stone crossings at intervals along the streambank so the farmer can get cattle from one side to the other for rotational grazing and so cattle can still drink from the stream at limited access spots. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Sara Deuling, American Rivers, (717) 763-0741, sdeuling@amrivers.org.

Cold River Dam, Cold River, VT: This 7-foot by 90-foot boulder dam, originally built in the 1970s by Cold River Materials, was removed in September 2003 to restore fish passage to this reach of Cold River and to enrich aquatic habitat. Biologists have plans to monitor fish, in particular brown and rainbow trout, and insect species following the removal in order to better assess the benefits to these populations. Contact Jim MacCartney, Trout Unlimited and National Park Service, (603) 226-3436, jmaccartney@tu.org.

Hillside Farm Dam, Tributary to the Ompompanoosuc River, VT: This 18-foot high privately owned, earthen fill dam was removed in August 2003 due to failing construction. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@anr.state.vt.us .

Johnson State College Dam, Tributary to the LaMoille River, VT: This 30-foot high earthen fill dam was originally built for aesthetic purposes at the entrance of Johnson State College. The spillway failed and the cost of repair was greater than the cost of removal, so the dam removed in October 2003. There is currently ongoing stream restoration work at the site. Contact Brian Fitzgerald, Vermont Agency of Natural Resources, (802) 241-3468, brian.fitzgerald@anr.state.vt.us .

Three Unnamed Barriers, Icicle Creek (tributary of the Wenatchee River, which is a tributary of the Columbia River), WA: A series of three 8 to 10-foot weirs and dams on Icicle Creek were removed in summer/fall 2003. These blockages were part of a series of five blockages that make up the old infrastructure of the Leavenworth National Fish Hatchery, which was built after Grand Coulee Dam was erected in the 1930s. The original diversion dam and series of weirs were built in the original channel for holding adult salmon and steelhead, while the majority of the river's flow was diverted to a newly constructed canal. These structures were abandoned when fisheries biologists realized that high summer temperatures were killing the trapped fish. Restoration of Icicle Creek to its original channel was spearheaded by the Icicle Creek Watershed Council and their work with the U.S. Fish and Wildlife Service. The initial government price tag for the project was \$12 million, but through the ingenuity of these citizen activists, they were able to contribute volunteer hours and foundation dollars to bring the initial phase of the project to \$228,000. Phase 1 of the project involves the removal of these three weirs and dams, while phase 2 calls on the U.S. Fish and Wildlife Service to install a fish ladder at the diversion dam along with a fish sorter. The removals opened an additional two to three miles of habitat for salmon and return flow to the original channel of Icicle Creek. Once phase 2 is completed, an additional 21 miles of spawning habitat will be accessible to wild salmon. Contact Buford Howell, Icicle Creek Watershed Council, (509) 548-6017.

Two Boulder Creek Dams, Boulder Creek, WI: These two remnant timber crib and cement dams were removal by the owner in summer 2003 to restore the coldwater creek and eliminate the liability created by the two dams. One of the dams has no known purpose and the other was intended to create a fish hatchery. Removal is expected to return this portion of the creek to its original coldwater habitat and improve water quality by normalizing the temperature of the creek. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 275-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Clark's Mill Dam, Magdantz Creek, WI: This 7-foot by 166-foot gravity and earthen dam was removed because of the extensive cost estimated to repair the structure. It was removed in September 2003 and is expected to lead to restoration of a brook trout habitat and return the creek to a free-flowing status. Contact Linda Hyatt, Wisconsin Department of Natural Resources, (920) 787-4686, linda.hyatt@dnr.state.wi.us.

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Unnamed Dam, Branch River, WI: This 5-foot by 40-foot dam was removed in summer 2003 because it prohibited fish migration. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 275-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Waubeka Dam, Milwaukee River, WI: This 10-foot by 222-foot rock dam was removed in March 2003 because the dam failed a safety inspection and the owner chose to remove the dam rather than pay the (estimated) high cost of repair. The removal is expected to improve water quality and expose riffle habitat for smallmouth bass. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 275-2424 ext. 112, hsarakinos@wisconsinrivers.org.

White River Dam, Fox River, WI: This 12-foot by 250-foot rock and timber crib dam was removed in December 2003 because it no longer impounded water, but remained a safety hazard. The removal eliminated a safety liability, and a big impact to fisheries is not expected, it opened up the Fox River to fish migration for species such as lake sturgeon, flathead catfish, and walleye. Contact Linda Hyatt, Wisconsin Department of Natural Resources, (920) 787-4686, linda.hyatt@dnr.state.wi.us.

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Davidson Ditch Diversion Dam, Chatanika River, AK: This dam, which was removed on January 21, 2002, was originally built to support industrial use in the 1920s, but was severely damaged in the flood of 1967. Removal of the dam opened 65 miles of upstream habitat to chinook and chum salmon, whitefish, sheefish, Arctic grayling, and northern pike. Increased recreational opportunities will also be gained from the restored stream. Contact Mike Roy, U.S. Fish and Wildlife Service, (907) 786-3825, Michael_Roy@fws.gov.

Crocker Creek Dam, Crocker Creek, CA: This 30-foot by 80-foot concrete flashboard dam, removed in summer/fall 2002, was originally built in 1904 for recreational use, but had been abandoned for many years. Removal of the dam opened 2 miles of habitat for chinook and steelhead. The total cost of this project was estimated to be \$460,000. Contact Ron Benkert, Sonoma County Water Agency, (707) 547-1905, rcb@scwa.ca.gov.

Unnamed Arizona Crossing, Solstice Creek, CA: The National Park Service began work on removing an unnamed blockage, an arizona crossing (abandoned road crossing) in Solstice Creek in April 2002. Removal of this blockage is part of a larger restoration project by the National Park Service to remove several small barriers, including the crossing, culverts, and a bridge apron, and to restore spawning habitat for steelhead. Removal was completed in fall 2002. Contact Charles Karpowicz, National Park Service, (202) 513-7022, charles_karpowicz@nps.gov.

Unnamed Dam, Ferrari Creek, CA: A 5-foot earthen dam on Ferrari Creek, which was located on the Coast Dairies and Land Company property along the coast in Santa Cruz County, was removed in January 2002. The dam was a barrier to steelhead—but since the removal, fish have returned at least as far as the former dam site and vegetation has reestablished itself. Katherine Elliot, Trust for Public Land, (415) 495-5660.

North Debris Dam, Unnamed Tributary to the LA River, Santa Monica Mountains

National Recreation Area, CA: This 20-foot earthen dam was originally built to catch debris for a downstream reservoir. Because it had outlived its useful life, it was removed sometime in 2001-2002. Contact Charles Karpowicz, National Park Service, (202) 513-7022, charles_karpowicz@nps.gov.

Trancas Debris Dam, Unnamed Tributary to Trancas Canyon, Santa Monica Mountains

National Recreation Area, CA: This 15-foot steel and timber structure originally served as a debris control for downstream reaches of the river. It was removed sometime in 2001-2002. Contact Charles Karpowicz, National Park Service, (202) 513-7022, charles_karpowicz@nps.gov.

Two Unnamed Dams, Unnamed Tributary to the Platt River, Florissant Fossil Bed

National Monument, CO: These small dams were removed in 2002 as part of a floodplain restoration effort. Contact Charles Karpowicz, National Park Service, (202) 513-7022, charles_karpowicz@nps.gov.

Billington Street Dam, Town Brook, MA:

The Billington Street Dam was removed in 2002. Erosion at this over 200-year old earthen dam and deterioration of its fishway had blocked migration of alewives each spring. Removal of this dam and restoration of Town Brook has restored the fisheries in an area where the pilgrims historically came to fish for alewife. The project was funded in part through a partnership between NOAA Community-based Restoration Program and American Rivers. Contact Brian Graber, American Rivers, (413) 585-5896, bgraber@amrivers.org.

Polly Pond Dam, Big Run (tributary to the Potomac River), Chesapeake & Ohio Canal

National Historic Park, MD: This 25-foot earthen dam was originally part of a canal waste weir. It was determined that removal of the dam would be the most cost-effective way to preserve the canal weir, which is off-stream. Removal of the dam happened sometime in 2001-2002. Contact Charles Karpowicz, National Park Service, (202) 513-7022, charles_karpowicz@nps.gov.

Main Street Dam, Sebasticook River, ME:

Removal of this dam began in July 2002. Once removed, fish passage and riverine habitat were restored for alewife on the Sebasticook River. Fish passage plans have been completed for the North Street Dam, the next dam upstream, which will extend spawning habitat through Newport to the Sebasticook Lake. Contact Jeff Reardon, Trout Unlimited, (207) 623-1470, jreardon@tu.org or Tom Squiers, Maine Department of Marine Resources, (207) 624-6348, tom.squiers@maine.gov.

Sennebec Dam, St. George River, ME:

This 15-foot by 240-foot dam was removed in fall 2002. The dam removal is one part of a collaborative effort to restore fish passage to the St. George River and maintain desirable water levels in Sennebec Pond. The former hydro dam was badly deteriorated, and its owners determined that the cheapest way to restore fish passage and maintain lake levels was to remove the dam and build a 30-inch high rock ramp fishway at the natural outlet of the pond. Contact David Glasser, Sennebec Pond Association, at (207) 236-

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8330, agavedave@msn.com; Jeff Reardon, Trout Unlimited, (207) 373-0700, jreardon@tu.org ; or Laura Wildman, American Rivers, (860) 652-9911, lwildman@amrivers.org.

Smelt Hill, Presumpscot River, ME: A 1996 flood extensively damaged this hydropower dam and its fish ladder preventing the facility from producing power or passing fish without first undergoing expensive repairs. Instead the owners decided to remove the structure, which occurred in fall 2002. Dam removal is expected to restore the lower portion of the Presumpscot, creating habitat for striped bass, smelt, river herring, and American eel and opening passage for other migratory fish. This was a Coastal America project, part of an overall effort in the Northeast to restore anadromous fisheries migration corridors and restore salt marshes and wetlands throughout our estuaries. The Maine Departments of Environmental Protection and Marine Resources, and the Coastal Conservation Association, spearheaded the removal of the Smelt Hill dam, with significant funding and engineering assistance from the U.S. Army Corp of Engineers, and other assistance from local interests. The U.S. Army Corps of Engineers and the Maine Department of Environmental Protection worked with numerous local interests to accomplish this project. Contact Dusti Faucher, Friends of the Presumpscot, (207) 892-8281, coveredbridge45@mindspring.com.

Mill Pond Dam, Chippewa River, MI: This 15-foot by 110-foot concrete dam was removed in an effort to eliminate safety concerns and restore riverine habitat. Removal of the dam opened 71 miles of habitat for steelhead, bluegills, and other resident fish. The removal was being funded by the Michigan Natural Resources Trust Fund. Contact Greg Baderschneider, Director of Parks, City of Mount Pleasant, (989) 779-5331.

Randall Dam, Coldwater River, MI: Randall Dam, owned by the Village of Union City and built in 1912, was 85 feet long with 12 feet of head. The dam was originally used to divert water to a mill and was in a state of disrepair. The decision to remove the dam was aided by the fact that the structure was no longer serving a purpose, and removal costs (\$78,000) were much less than estimated costs to repair (repair costs exceeded \$200,000). Removal of the dam was completed in 2002. Contact Jessica Mistak, Michigan DNR, (906) 249-1611, mistakjl@michigan.gov.

Stronach Dam, Pine River, MI: This 18-foot by 350-foot concrete hydropower dam was removed in 2002. The dam, built in 1918, was no longer economical to operate as a hydropower facility. Removal is expected to increase trout populations and recreational opportunities at this popular whitewater stream. Contact Sharon Hanshue, Michigan Department of Natural Resources, (517) 335-4058, hanshus1@michigan.gov.

Winchester Dam, Ashuelot River, NH: This 3-foot by 105-foot timber crib dam was removed in summer 2002. The dam was removed due to safety concerns and as part of a broader restoration effort on the Ashuelot River. Removal of this dam opened additional spawning habitat for American shad, river herring, American eel, and Atlantic salmon, and is expected to benefit the dwarf wedge mussel, a federal endangered species indigenous to the Ashuelot River. Contact Stephanie Lindloff, New Hampshire Department of Environmental Services, (603) 271-8870, slindloff@des.state.nh.us.

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Freedom Park Dam, Little Sugar Creek, NC: This dam, which was removed in fall of 2002, was a 28 feet thick, 60 feet wide, 10 feet tall, hollow-concrete structure with 3 radial sluice gates used to regulate water levels. It was built in the early 1970s as part of park revitalization effort and to create a pond for paddleboats and other recreation as part of a “riverwalk”. Removal of the structure is part of an overall restoration plan for Freedom Park and Little Sugar Creek and is expected to improve water quality (temperature and oxygen levels) and uncover prime fish habitat. Contact Andrew Burg, Mecklenburg County Storm Water Services, (704) 336-4328, burgaa@co.mecklenburg.nc.us.

Unnamed Dam, Unnamed Tributary of Marks Creek, NC: This 25-foot by 400-foot earthen fill dam was removed and the stream has been restored. The removal of this dam was part of a mitigation package for the building of Knightdale Bypass and includes wetlands and floodplain restoration in addition to dam removal. Contact Brad Fairley, Stantec Consulting, (919) 851-6866, bfairley@stantec.com.

Gray Reservoir Dam, Black Creek, NY: This 34-foot by 385-foot buttress dam was removed in fall 2002. Originally it was built in 1905-1906 as a water storage facility for local mills and a backup water supply for the city of Utica. The dam owner, the Upper Mohawk Valley Regional Water Board, decided to remove the dam when it failed inspection and rebuilding proved uneconomical. The estimated cost for removal was \$300,000 compared to an estimated \$1.5 million to rebuild the structure. Benefits of restoring Black Creek are expected to include a more natural stream channel, restored brook trout fishery, and increased public access to the river. Contact Dick Goodney, Upper Mohawk Valley Regional Water Board, (315) 792-0336.

Dennison Dam, Olentangy River, OH: Dennison Dam, which was originally built to provide electrical power for a neighboring cottage, was removed in October 2002. Removal of this dam is part of a larger restoration effort on the Olentangy River looking at removing the remaining dams on the portion of the river in Delaware County. This removal is expected to improve water quality, fish and aquatic habitat, and has already uncovered a natural waterfall that existed on the site. Cost of the removal was \$17,000. Contact Tim Peterkoski, Ohio Department of Natural Resources.

Milan Wildlife Area Dam, Huron River, OH: This structure, popularly known as the Coho Dam, was a 5-foot by 100-foot concrete dam built in 1969 to hold coho salmon. The dam served no purpose prior to its removal, which occurred in June 2002. Removal of the dam opened 25 miles of spawning habitat for steelhead and coho salmon. Contact Larry Goedde, Ohio Department of Natural Resources, (419) 429-8370, larry.goedde@dnr.state.oh.us.

Byrne Diversion Dam, Beaver Creek, OR: This 3-foot concrete dam was removed in summer 2002. The structure was originally built as an irrigation diversion dam, but was abandoned when the owner switched the point of diversion. Removal of this dam increased access to spawning habitat for steelhead and coho salmon. Contact Jerry Vogt, Oregon Department of Fish and Wildlife, (541) 826-8774, jerry.f.vogt@state.or.us.

Irrigation Push-Up Dam, Applegate River, OR: This 4-foot gravel pushup dam used for irrigation was decommissioned for the first time in 2002. The Applegate River Watershed

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Council worked with the owner to develop an alternative irrigation system that utilizes an instream pump to divert water. Contact Daniel Newberry, Applegate River Watershed Council, (541) 899-9982.

Rock Creek Dam, Tributary to the Powder River, OR: This small hydropower dam, owned by Oregon Trail Electric Cooperative, was removed in November 2002. Contact Stephanie Burchfield, Oregon Department of Fish and Wildlife, 503-872-5255, ext 5580, stephanie.burchfield@state.or.us.

Maple Gulch Diversion Dam, Evans Creek, OR: This 13-foot concrete dam was built in the early 1900s to supply water for a schoolhouse. The dam, which was no longer serving its original purpose, was removed to restore natural sediment flow and fish passage. Removal was completed in summer 2002. The access point has been seeded and mulched and the vegetation has come back. Further planting was scheduled to occur in February/March 2003. The sediment transport in the restored stream is being monitored. Contact Jane Lafore, Medford District Bureau of Reclamation, (541) 618-2364.

Young's Dam, Lititz Run, PA: This 3-foot tall dam was removed in 2002 by the owner. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Afton Dam, Bass Creek, WI: This dam was breached in 1996 to help alleviate safety concerns. The remaining structure was removed in September 2002. Bass Creek has been designated an Exceptional Resource Water by the state and supports the redfin shiner which is a state-listed species. Dam removal is expected to improve habitat for northern pike and smallmouth bass, and may enable upstream wetland restoration. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 275-2424 ext. 112, hsarakinos@wisconsinrivers.org or Sue Josheff, Wisconsin Department of Natural Resources, (608) 275-3305. .

Grand River Dam, Grand River, WI: This 11-foot hydraulic head, concrete dam was removed in July 2002. Contact: Linda Hyatt, Wisconsin Department of Natural Resources Dam Safety Engineer, 920-787-4686, linda.hyatt@dnr.state.wi.us.

Schweitzer Dam, Cedar Creek, WI: This 8-foot by 30-foot timber crib dam was removed in October 2002. Prior to the dam removal, Schweitzer pond had thick mats of algae and non-native Eurasian milfoil during summer months—resulting in a fish population dominated by carp. This dam was removed in an effort to improve water quality and alleviate this habitat impairment. Removal of this dam restored the entire creek from a shallow and algae-filled impoundment to a free-flowing stream and natural floodplain open to public use. Contact Will Wawrzyn, Wisconsin Department of Natural Resources, (414) 263-8699.

Woods Creek Dam, Woods Creek, WI: This 16-foot by 200-foot hydropower dam was removed as part of a Federal Energy Regulatory Commission relicensing process, known as the Wilderness Shores Agreement. Removal of this dam is expected to return this high quality brook trout stream to its former free-flowing state and allow brook trout access to overwintering habitat in the larger waters of the Pine and Popple Rivers. Since the removal, the stream is handling the

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sediment load and attempting to reestablish its natural streambed. Contact Bob Martini, Wisconsin Department of Natural Resources, (715) 365-8969.

Silver Springs multi-dam complex, tributary of Onion River, WI: This extensive headwaters restoration project included earthen berms and 13 dams ranging from 4 to 8 feet in height with wooden or concrete control structures, the removal of which began in April 2002. A private conservation buyer purchased the site to restore important wild trout habitat and sold the property to the Wisconsin Department of Natural Resources. Trout Unlimited worked with the Wisconsin Department of Natural Resources to drain the 13 ponds, remove the structures, and restore the stream channels. Contact Laura Hewitt, Trout Unlimited, (608) 250-2757, lhewitt@tu.org.

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Two Swim Dams, Alameda Creek, CA: Two dams on the upper stretches of Alameda Creek were removed in 2001. Contact Pete Alexander, East Bay Regional Park District, (510) 635-0135 ext. 2342.

McGoldrick Dam, Ashuelot River, NH: This dam was removed in August 2001. The McGoldrick Paper Company agreed to remove the dam to allow passage of migratory fish to upstream spawning habitat. Because the site has historical value, photo documentation, biographies, and interpretive signage were developed as part of the restoration effort. Contact Deb Loiselle, New Hampshire Department of Environmental Services, (603) 271-8870, dloiselle@des.state.nh.us.

Four Amish Dams, Muddy Run, PA: The removal of eight small dams began in December 2000. All of the dams were originally used to provide running water to Amish farms, but only one still served this purpose. Four of the dams were removed in 2000 and the remaining four dams were removed in summer 2001. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Good Hope Dam, Conodoguinet Creek, PA: This 8-foot dam, which had no identifiable owner, was removed in November 2001 by mechanical separation. The removal opened 22.2 miles of spawning habitat for migratory fish, such as river herring and American shad, and removed a significant safety hazard. This project includes a multi-year study of physical, chemical, and biological parameters and extensive riparian restoration that is currently underway by Pennsylvania State University and the U.S. Geological Survey. The total project cost including removal, riparian restoration, public outreach and education, and monitoring is estimated at \$300,000. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Meisers Mill Dam, Manantango Creek, PA: This 5-foot by 75-foot partially breached dam was removed in 2001. The owner removed the structure to eliminate maintenance and liability costs and to stop significant erosion of riverside property. The removal opened approximately five miles of the river and cost approximately \$5,000. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Intake Dam, Rife Run, PA: This 8-foot by 50-foot dam was removed in early 2001 by mechanical separation. The owner removed the dam to eliminate liability, maintenance costs, and a public safety hazard. The total project cost including removal and stream restoration was \$15,000. Removal of this dam has restored the free flowing character of the stream and opened additional habitat for aquatic organisms. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Hammer Creek Dam, Hammer Creek, PA: The dam was removed in late 2001 due to safety and liability concerns. Before removal, people were often seen walking on the 8-foot high dam, which was very slippery and had a 6-foot deep pool with hydraulic activity below. Unfortunately the sediment dispersal was not managed correctly during the removal process, and as a result negative impacts have occurred to downstream habitat. Officials are currently studying the effect dam removal had on the macroinvertebrate community and on fluvial geomorphologic processes in order to determine how the ecology of the stream has changed. Immediate impacts include channel adjustment in the reservoir area and the movement of sediment downstream that has filled in pools that typically provide deep-water habitat for trout. Early study results show depressed macroinvertebrate populations and some soil erosion due to movement of sediment. However, at the site of the former reservoir, gravel substrate and riffles have begun to appear, indicating that the impacts may be short-term. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Two Unnamed Dams, Huston Run, PA: The Amish used these small dams to generate power in order to obtain well water, and like the four Amish dams removed in 2000 (see write up below), removal has led to restoration of the native coldwater fishery. Improvements in water quality and habitat have also resulted. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Goldsborough Creek Dam, Goldsborough Creek, WA: This obsolete dam, owned by Simpson Timber Company, was removed in May 2001. Since the removal the amount of wildlife seen in the area has increased, including increased sightings of birds, smolts, and spawning fish such as coho salmon, chum salmon, chinook salmon, steelhead, and cutthroat trout. There is now increased access to use the area for low-key recreation and as an interpretive site that allows walk-in access. One challenging aspect of the project was successfully using the silt and debris built up behind the dam to fill in the streambed. To achieve this, a series of weirs are being installed to restore the stream over a 2,000-ft reach. Contact Patti Case, Simpson Timber Company, (360) 427-4733.

Deerskin Dam, Deerskin River, WI: This dam, which had been ownerless for 30 years and had never conformed to Wisconsin's dam safety codes, was removed in June 2001. Dam removal is expected to improve water quality and restore about 3.5 miles of coldwater fisheries habitat at a cost of approximately \$15,000—as opposed to the repair cost estimate of \$400,000. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

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Franklin Dam, Sheboygan River, WI: Removal of the dam gates and a portion of this structure began in September 2000 and the remainder of the dam was removed in early May 2001. Repair estimates were between \$350,000 and \$ 400,000 while the actual cost of removal was \$190,000. Removal restored 10 miles of free flowing river, improved water quality, and benefited smallmouth bass and northern pike. Since removal, populations of mayfly and kadisfly have also increased above the former dam site. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Kamrath Dam, Tributary of Onion River, WI: This 5-foot high dam, which was on land purchased by a private individual in order to restore coldwater habitat for wild trout and other species, was removed in April 2001 by a partnership including Trout Unlimited and the Wisconsin DNR. In addition to dam removal, the restoration plan included removing other fish passage restrictions and restoring the stream channel. Since the removal of the dam and restoration project, the stream has returned to its historic, meandering path. As a result, the restoration of crucial habitat in the headwaters of a coldwater fishery is occurring, which benefits the health of the entire Great Lakes Basin. Contact Laura Hewitt, Trout Unlimited, (608) 250-2757, lhewitt@tu.org.

LaValle Dam, Baraboo River, WI: This dam, the uppermost dam on the Baraboo River, was removed in March 2001. This is the third dam to be removed from the Baraboo River since 1997. A local environmental group purchased the dam for the purpose of removing it. Contact John Laub, Sand County Foundation, (608) 244-3512.

Linen Mill Dam, Baraboo River, WI: This dam, removed in fall 2001, is the last of four dams to be removed from the Baraboo River. Cost of the removal was \$58,000 compared to repair estimates of \$100,000 to \$150,000. With this removal, the river flows freely for its entire length—over 120 miles of main stem and almost 500 miles of tributaries. This is the longest stretch of main stem, free-flowing river to be restored in the nation. The removals resulted in habitat improvements for smallmouth bass, walleye, sauger, channel catfish, lake sturgeon, and paddlefish. Since the dam was removed, natural rapids were also restored, and the first paddling shop recently opened as recreation has risen. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

New Fane Dam, East Branch of the Milwaukee River, WI: This old mill dam, which was removed in 2001, had not functioned since the 1950s and was in serious disrepair. The \$50,000 removal cost restored six miles of free flowing river and benefited many species, including three state fish species of concern. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Oriente Dam, Iron River, WI: This hydropower dam, which was built in the 1930s, but that had not functioned since damaged in a major flood in 1985, was removed in 2001. The dam owner was granted a permit to abandon and remove the dam. Dam removal improved at least 1.5 miles of spawning habitat for salmon and trout migrating from Lake Superior. As part of the dam removal, a temporary low-sill dam was created to prevent sea lampreys and introduced salmonids from entering the pristine upstream habitat, which includes native brook trout habitat. The estimated cost of the removal was approximately \$500,000—less than half the estimated

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repair cost. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Waubeka Dam, Milwaukee River, WI: Removal of this dam began with breaching the dam in the summer of 2000 and was completed with removal of the remaining dam structure in 2001. The 150-year old dam was originally built to power an old feed mill but was inoperational since 1961. Following a canoeing accident, dam inspectors found the dam was in a serious state of disrepair and in danger of failing. Due to the economic obligations associated with repairing and maintaining the dam, it was agreed the dam would be removed. Removal of the dam resulted in restored oxygen and temperature levels; the return of sediment and nutrients to sediment-starved downstream reaches; decreased flood risk; and additional habitat for smallmouth bass and other warmwater sportfish. The town also plans to use the additional public land to create public parks and is considering building a historical center to commemorate the rich Native American culture associated with the river. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Chair Factory Dam, Milwaukee River, WI: This dam was removed from December 2000 to January 2001. The cost to replace the dam was estimated at more than twice the \$175,000 for removal. Its removal has exposed riffle habitat important to smallmouth bass and other sportfish. Water quality has also been improved by eliminating the existence of warmer and oxygen deprived water that was once above the dam. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

28 DAMS REMOVED IN 2000

McCormick-Saeltzer Dam, Clear Creek, CA: This 93 year old dam, which was 18 feet tall and 60 feet wide and was located on a tributary to the Sacramento River, was removed in October 2000. The removal opened 12 miles of spawning habitat to threatened salmon and steelhead, providing enough habitat to produce an additional 2,000 fish of each species per year. Contact Steve Evans, Friends of the River, (916) 442- 3155, sevans@friendsoftheriver.org.

Dam and Lock, Kissimmee River, FL: Dam S65B and the associated boat lock were removed in June 2000. This removal has reconnected and restored 14 miles of natural meandering river channel and has allowed water to overflow on the floodplain, amplifying wetlands. Shortly after completion of this phase of the project in February 2001, the region suffered a record drought that caused little water to flow until June 2001. Since then, continuous flow was re-established and the river has experienced physical, chemical, and biological changes indicative of restoration. The river channel has been flushed of accumulated organic sediments, the dissolved oxygen level that was once a critical limiting factor has increased, changes have occurred in the invertebrate food base, and use of the river channel by shorebirds has risen. Another dam is going to be removed within the next two years as part of the second phase of this project. Contact Lou Toth, South Florida Water Management District, (561) 682-6615. (www.sfwmd.gov/org/erd/krr/index.html)

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Old Berkshire Mill Dam, Housatonic River, MA: This dam on the East Branch of the Housatonic River was breached in November 2000, doubling the available trout habitat. Contact Brian Graber, American Rivers, (413) 585-5896, bgraber@amrivers.org.

East Machias Dam, East Machias River, ME: This dam was removed July 2000. The dam was built in 1926 by Bangor Hydroelectric Company but was in such poor condition by 1962 that they sold it to the town of East Machias for \$1. The 16-foot by 150-foot dam was considered a public safety problem, blocked some recreational canoeing and kayaking and obstructed fish passage during certain flow conditions. Vegetation planting was initiated in spring 2001 to stabilize the stream bank. Since its removal, hundreds of volunteers have joined in planting trees and restoring riparian habitat. Many recreational canoers and kayakers have returned to the river and interest in extending a canoe race down the newly opened stretch of river has arisen. The removal opened up 40 miles at the head of the river, ultimately restoring over 300 miles of critical Atlantic salmon habitat to a free flowing condition. Contact Dwayne Shaw, Downeast Salmon Foundation, (207) 483-4336.

Fibron Trout Pond Dam, Anguilm Creek, MI: Fibron Trout Pond Dam was a Michigan DNR Fisheries Division owned low-head earthen dam built in 1964. It was removed by Michigan DNR Fisheries Division Construction Crew in August 2000. Contact Jessica Mistak, Michigan DNR, (906) 249-1611, mistakjl@michigan.gov.

Big Rapids Dam, Muskegon River, MI: This dam was removed in summer and fall 2000. The dam was a safety hazard and its removal has opened up nearly 120 miles of free flowing reaches, one of the longest reaches of river in Michigan. The removal of Big Rapids Dam has made this stretch of river safer for canoeing and swimming and more aesthetically pleasing. The community is currently constructing a riverwalk to draw more people to the river. Furthermore, the preliminary results of a USGS Assessment Study on the effects of removing the dams has found that the water quality was not effected and the habitat quality has dramatically improved as boulder and cobble hard bottoms are in a greater abundance. Contact Steven Stilwell, City of Big Rapids, (231) 592-4021.

Three Unnamed Dams, Ashland Creek, OR: These three diversion dams were removed due to safety and maintenance problems caused during a major flood event. Removal of these dams opened additional habitat to steelhead and resident species. Contact Jerry Vogt, Oregon Department of Fish and Wildlife, (541) 826-8774.

Barnitz Mill Dam, Yellow Breeches Creek, PA: The dam owner, Dickenson Township, opted to remove this structure in order to eliminate maintenance and liability costs and a public safety hazard. The removal and associated restoration will improve stream habitat and ecosystem health, enhance public recreation, and provide a public park at the site. The cost of the project was approximately \$25,000. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Four Amish Dams, Muddy Run, PA: The removal of eight small dams began in December 2000. All of the dams were originally used to provide running water to Amish farms, but only one still served that purpose. Four of the dams were removed in 2000 and the remaining four

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dams were removed in spring 2001. Removal has restored the coldwater fishery and improved water quality, which is necessary to sustain the trout fishery. This fisheries restoration has resulted in an increase in angling activity. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Franklin Mill Dam, Middle Creek, PA: This dam was removed in spring 2000 because the dam owner wanted to eliminate maintenance costs and liability. Approximately 40 miles of habitat for migratory fish was opened up, a public safety hazard was removed and stream habitat was improved. The EPA Chesapeake Bay Program provided the total cost of \$14,000 and Penn State is conducting monitoring fish and aquatic macroinvertebrate populations to document changes in diversity and relative abundance in response to removal of the dam at the site. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Hinkletown Mill Dam, Conestoga River, PA: This dam was removed in 2000 to facilitate construction of a new bridge. Because several dams exist downstream, no river miles were opened for migratory fish, but advantages to the removal include stream habitat and ecosystem restoration and enhanced public safety. A study done by Pennsylvania State University since the removal has shown that the natural river now supports more diversity and higher populations of aquatic life than in the man-made mill pool. The benthic macroinvertebrate community found in the riffles after removal includes more families than the samples taken from the pool areas created by the dam before its removal. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Martins Dam, Cocalico Creek, PA: This dam was removed in 2000 because Ephrata Township and the owner wanted to eliminate a public safety hazard (the dam was adjacent to a new housing development). The total cost of \$20,000 covers the removal by mechanical separation and riparian restoration work. Due to blockages to fish migration downstream, no miles were opened to migratory fishes but advantages to removal include stream habitat and ecosystem restoration, enhanced public safety, and reduced owner liability. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Muren's (Seitzville Mill) Dam, South Branch of Codorus Creek, PA: This 12-foot by 100-foot dam was removed in summer 2000 for \$25,000. The owner removed the dam to eliminate liability costs, but the removal has resulted in improved stream habitat and passage for trout and resident fish and improved water quality. The removal is part of larger effort to restore the South Branch of Codorus Creek. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Wild Lands Conservancy Dam, Little Lehigh Creek, PA: This dam was removed in summer 2000 as part of a stream restoration demonstration project. The 5-foot by 75-foot dam was removed for approximately \$5,000. Since removal, the fish passage has been restored and substrate conditions have improved, becoming a hard gravel, cobble substrate rather than a thick layer of silt. Habitat for the macroinvertebrate community has also increased. The quality of the natural fishery has improved and summer floaters face fewer obstructions as they move

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downstream, as well. Contact Scott Carney, Pennsylvania Fish and Boat Commission, (814) 353-2225, rscarney@state.pa.us.

Unnamed Dam, Manatawny Creek, PA: This dam, which was built around 1850, was removed in August 2000. In addition to the removal and restoration activities, the Academy of Natural Sciences is conducting in-depth research on the effects of the removal in order to help develop a balanced, scientifically based policy regarding dam removal in Pennsylvania. Contact Elizabeth Lynch, Academy of Natural Science, (570) 893-1137. (www.acnatsci.org/research/pcer/manatawny.html)

Chancellorsville Brygadier A & B Dam, Tributary of Hunting Run, VA: These two inactive dams were removed in 2000 to eliminate the need for maintenance and to restore the area to a civil war historical appearance. The Park Service estimates the removal cost was \$15,000. Contact Gregg Knapp, National Park Service, (540) 785-7448.

Fredericksburgh Milstead A & B Dams, Unnamed stream, VA: These two inactive dams were removed from an intermittent stream in 2000 to eliminate safety issues and the need for maintenance. The Park Service estimates the removal cost was \$75,000. Contact Gregg Knapp, National Park Service, (540) 785-7448.

Unnamed Dam, Headquarters Creek at Willapa National Wildlife Refuge, WA: This 5-foot dam was originally built in the early 1940s as a source of water for the refuge. The Willapa National Wildlife Refuge, in conjunction with the U.S. Fish and Wildlife Service, decided to partially remove the dam in order to restore the stream and re-establish the sediment transport process. Since the removal of the dam, officials have seen a return of cutthroat trout and an increase in salmon runs. They have also been able to restore some of the rich amphibian diversity the region is known for. Contact Charlie Stenvall, U.S. Fish and Wildlife Service, (360) 484-3482, Charlie_stenvall@r1.fws.gov.

Oak Street Dam, Baraboo River, WI: This dam, removed in the winter 2000, was the second of four dams to be removed on the Baraboo River. This \$30,000 removal cost 10 times less than the estimated repair cost. Once all four dams are removed, the river will flow freely along its entire length, over 120 miles. The removal opened up spawning grounds important to sturgeon, endangered paddlefish, and small mouth bass. Canoeing activity has grown, increasing revenue in the town of Baraboo, and the town plans to develop the waterfront as recreation and a community-gathering place. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

Rockdale Dam, Koshkonong Creek, WI: In 1998, this 75-year old dam was determined to need extensive repairs. Two years worth of community meetings resulted in near consensus that the dam and pond were not worth the cost of repair. After the dam's removal in 2000, the village began restoring the river and adjacent prairie land, while expanding a nearby county park. Contact Sue Josheff, Wisconsin Department of Natural Resources, (608) 275-3305.

Shopiere Dam, Turtle Creek, WI: The dam, removed in the summer 2000, was the only obstruction on Turtle Creek. The ownerless dam was in a state of disrepair and needed to be

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removed or repaired. While the state of Wisconsin decided to remove the dam for economic and safety reasons—cost of the removal was \$100,000 compared to a repair estimate of \$251,000—removal restored 30 miles of free-flowing river and improved habitat for smallmouth bass, walleye, catfish, Northern pike, and three state listed species (Ozark minnow, greater redhorse, and gravel chub). Water quality improved for the previously oxygen-deprived and sediment-choked stretch of the creek, and riffle habitat was restored. Turtle Creek is now a state-listed Exceptional Resource Water, a designation given to water in good condition with a valuable fishery. Restoration of the site continues as sixteen acres of previously submerged land undergoes wildlife habitat restoration. Contact Helen Sarakinos, River Alliance of Wisconsin, (608) 257-2424 ext. 112, hsarakinos@wisconsinrivers.org.

20 DAMS REMOVED IN 1999

Anaconda Dam, Freight Street Dam, Platts Mill Dam, and Union City Dam, Naugatuck River, CT: In the spring and summer 1999, three dams on the Naugatuck were completely removed and one dam was breached. The full Naugatuck River Watershed Anadromous Fish Restoration Project is expected to significantly improve water quality and restore 32 miles of river, allowing passage for sea-run brown trout, American shad, alewives, blueback herring, and other aquatic species for the first time in over a century. The project represents a remarkable commitment to river system restoration on a scale rarely attempted.

Colburn Mill Pond Dam, Colburn Creek, ID: In September 1999, the Colburn Mill Pond Dam was breached, allowing fish to travel upstream for the first time in over 50 years. Colburn Creek now provides more than three miles of much needed spawning habitat for several trout species.

Stone Gate Dam, Waubensee Creek, IL: In July 1999, Illinois removed a dam from the Fox River that had been damaged during a flood incident in 1996 and posed a safety threat. The removal is expected to restore riffle habitat along this section of the river.

Canaan Lake Outlet Dam, Machias River, ME: The Canaan Lake Outlet Dam was used by the lumber industry for log drives from the 1800s through the 1960s. The dam, which was largely deteriorated prior to its removal in the summer of 1999, impeded the passage of migratory fish (including Atlantic salmon) to upstream spawning habitat.

Brownville Dam, Pleasant River, ME: The Brownville Dam, which was partially breached prior to its removal in August 1999, was the only impediment to adult salmon migration on the Pleasant River. Now with the dam gone, there is an opportunity to develop a recreational area at this site, in addition to the improved conditions for migratory fish.

Edwards Dam, Kennebec River, ME: The Edwards Dam was removed through a voluntary settlement agreement over the summer and fall of 1999. It was completed in October 1999 under budget and ahead of schedule.

Hampden Recreation Area Dam, Souadabscook Stream, ME: The Hampden Recreation Area Dam, which was removed in July 1999, was only two feet in height, but during low flows,

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it prohibited the upstream passage of fish. Further, the reservoir, which at one time served as a community swimming hole, contributed to water quality degradation of Souadabscook Stream.

Souadabscook Falls Dam, Souadabscook Stream, ME: The Souadabscook Falls Dam, which was partially breached in July 1999, prohibited migratory fish passage during low flows and often hindered fish passage during high flows when debris became trapped behind the dam. The dam at one time generated hydropower, but was inactive prior to its removal.

Archer's Mill Dam, Stetson Stream, ME: Archer's Mill Dam was over 100 years old and was a barrier to migrating fish prior to its removal in September 1999. The removal-and associated dredging to remove lumber, bark, sawdust and debris that accumulated behind the dam-will improve stream habitat and water quality on Stetson Stream. Removal estimated at \$13,000.

Wasman Dam, Tributary to the Pawpaw River, MI: This privately owned dam was built around 1860. The dam failed in 1998 and was thus removed in 1999.

Two dams, various rivers, MN: In 1999, the state of Minnesota removed two dams-the Frazee Dam on the Otter Tail River and the Appleton Mill Pond Dam on the Pomme de Terre River.

Rains Mill Dam, Little River, NC: The removal of Rains Mill Dam in December 1999, in which the US Marine Corps assisted using plastic explosives, has significant environmental benefits. These included opening 49 miles of historic spawning ground on the Little River for American shad, hickory shad, alewife, shortnose sturgeon, Atlantic sturgeon, and striped bass; improving water quality; and enhancing recreational opportunities on the Haw River.

Pool Colony Dam, Van Campens Brook (trib.), NJ: The Pool Colony Dam was removed by the National Park Service in 1999 as part of the agency's dam safety program, which states that NPS dams should either be maintained or drained.

Alphonso Dam, Evans Creek, OR: In July 1999, the US Bureau of Land Management decided to remove this defunct irrigation dam as a means to restore historic fish passage conditions. The removal of Alphonso Dam will enable the threatened coho salmon and other fish species to migrate up the East Fork of Evans Creek for the first time in 100 years and reach an additional 12 miles of spawning and rearing habitat. Removal estimated at \$55,000.

Unnamed Dam, Poorman Creek, OR: This diversion dam was in need of safety and maintenance due to a previous flood event. The dam was no longer serving a purpose to the owner, and permission was give to Oregon Department of Fish and Wildlife for removal. Removal opened some upstream habitat that had been blocked during low flow to steelhead and other species.

Ward Paper Mill Dam, Prairie River, WI: With the removal of the Ward Paper Mill Dam in the fall 1999, the Prairie River now flows freely for its entire length for the first time in 100 years. The \$125,000 removal is expected to benefit northern pike, walleye, smallmouth bass, muskellunge, brown and brook trout, as well as provide an additional 40 acres of wetlands and 90 acres of parkland for the community.

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