CASE Study - US

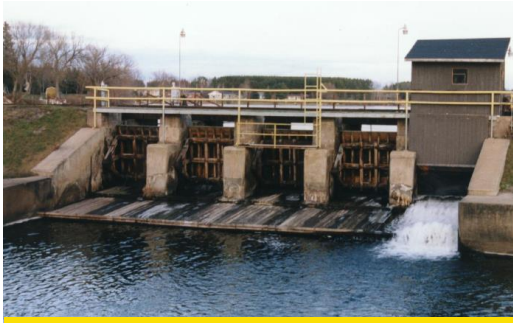
Chronology of US Dam Removals

REMOVE THE DAMS
FREE OUR RIVERS

Milestones in US Dam Removals

1991 -1999 Prairie River, Dells Dam (13m height) and Ward Paper Mill Dam (5,5m high and 25m length), Wisconsin

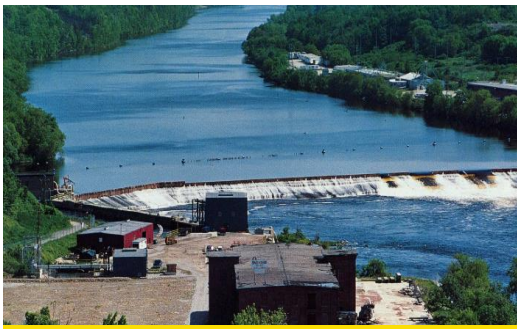
In the US the state of Wisconsin can be considered as one of the pioneers in dam removal which was due to a relatively aggressive state agency dam safety program which has lead to the removal of 30 dams already in the past few decades before 1999. Rivers like the Prairie River were opened again for fish migration. However the major reasons for dam removal were the costs of repairing old dams which averaged more than three times the cost of removal (Born 1998). The effects of Wisconsin dam removal also of small scale dams had positive impacts on fish, macro invertebrates and vegetation (Doyle 2005).



Ward Paper Mill, Prairie River © ERN

1999 Kennebec River, Edwards Dam (7 m), Maine

The removal of the Edwards Dam on the Kennebec River Maine is considered as the trigger of the dam removal policy in the US. It was the first time that the federal government ordered the destruction of a dam (Klein 1999) despite the objection of its owner. After the successful dam removal the Kennebec River flowed unimpeded to the ocean or the first time in 150 years. This allowed the free passage of fish from the Atlantic to spawn upstream in headwaters tributaries. Within a year after the removal large numbers of American eel, alewife, Atlantic and shortnose sturgeon, and striped bass were observed in upstream habitats (Hart et al 2002). The success of the Edwards Dam removal led to increased interest in dam removal and an accelerating number of proposals for river restoration (BLUMM and ERICKSON, 2012).



Edwards Dam, Kennebec River © ERN

2011 White Salmon River, Condit dam (38m), Washington

The Condit removal was a result of a 1999 settlement between the Yakama Nation and other tribes, the dam's owner operator PacifiCorp, federal agencies, and environmental groups, regarding salmon access to traditional fishing areas upstream. In 2011 the 38m high Condit Dam (constructed in 1913) was dismantled by blasting a 5m wide hole into the base of the dam. 53km of river habitat were opened and White Salmon River is once again home to abundant wild salmon and steelhead fish (American River).

Condit Dam, White Salmon River© Wikimedia, GFDL

An initiative of RiverWatch and Manfred Hermsen Stiftung für Natur und Umwelt

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2009 -2014 Elwha River, Elwha (33m) and Glines dam (64m), Washington

The largest dam removal and ecosystem restoration project in American history was the removal of the Elwha Dam (108feet or 33m) and Glines Canyon Dam (210feet or 64m) on the Elwha River in Washington in 2009-2014. This has given endangered salmon, trout and other fish access to more than 113 km of their historic migration and spawning habitat. Read more on: Case study US Dam Removal – Elwha River. Watch the Elwha dam removal movie "Return of the River" and the US Dam removal movie "Damnation".

Elwha Dam, Elwha River© Ben Knight, Patagonia

2013 Penobscot River, Veazie Dam (8m high / 275m long) and Great Works Dam (6m high / 330m long), Maine

The Penobscot River was fragmented by a chain of HPPs these severely decreased fish stock upstream the dams. Back in 1999, government agencies, Penobscot Indian Nation and conservation groups, decided to explore the development of a comprehensive solution for hydropower relicensing, migratory fish passage, and ecological restoration. After more than 10 years of negations 2 large dams close to the river´s confluence were removed 2012 - 2013: Veazie dam (275m long and 8m high) and Great works dams (330m long and 6m high). A third dam (Howland dam, 34m long and 12m high) was was converted, so that a portion of the river is bypassing the dam which is improving fish passage. Thanks to these measures more than 3200 river kilometers were opened. Sea run or diadromous fish that access the upper headwaters include river herring (alewife and blueback herring), American eel, Atlantic salmon, American shad, Eastern brook trout, and sea lamprey. Some of the species were thought to be gone, but came back after removal. River herring for instance, counted less than 1000 individuals prior removal and numbers raised up to more than 1,8 Million (!) in 2016 and generating 200.000 USD local fishery revenues. While power production was removed with the removal and bypassing of the these three dams, the hydro energy production was increased at other location, resulting in a slight increase in overall energy production compared with before the implementation of the project (Royte, 2016, DRE Conference).

Great works dam removal 2012-2013 © Penobscot River Trust

Removal of the inefficient fish ladder at Veazie dam © Penobscot River Trust

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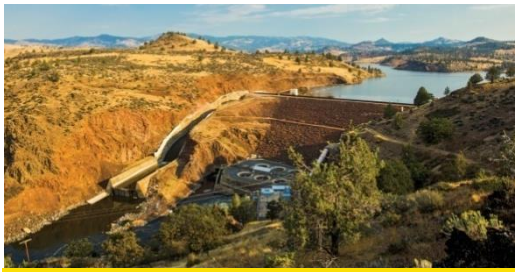
Dams to be removed soon:

Klamath Dams, Klamath River (OR, CA) – 7m to 50m (25 to 162 feet)

After a twenty year long fight for removal, the start of dismantling works of four hydropower dams is scheduled for 2020. Read more on: https://www.americanrivers.org/river/klamath-river/

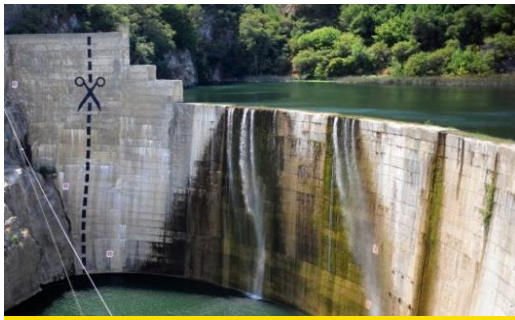
http://news.nationalgeographic.com/2016/04/160411-klamath-glen-canyon-dam-removal-video-anniversary/



Klamath River, IronGate ©Matt Stoecker, Patagonia

Matilija Dam, Ventura River (CA) – 48m (160 feet)

The Matilitja dam an out of service drinking water reservoir is trapping sediments and blocking fish migration. The Surfrider Foundation and the Matilija Coalition, along with other agencies and organizations, have developed three dam removal concepts which focus on reducing the removal cost and also maximizing benefits. Ventura County official set the course for removal of the dam as early as 1998, currently (2016) still no funding for removal works is available. Read more on: http://matilija-coalition.org/



Ventura River, Matilija Dam © Ben Knight, Patagonia

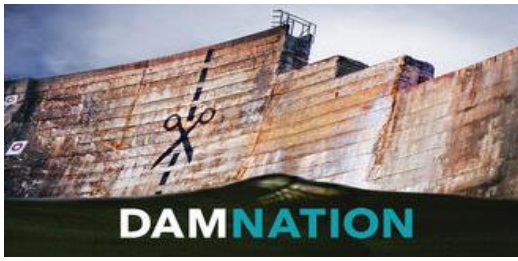
Lower Snake dams, Snake River (WA) – 30m (100 feet)

Conservation and fishing groups have gone to court and challenged federal fish restoration plans which have cost billions of dollars but not one fish species has recovered. In March 2016 the court has rejected the federal plans. Now the government must change course and remove: Ice Harbor, Lower Monumental, Little Goose and Lower Granite Dams. Read more on: http://earthjustice.org/features/remove-four-lower-snake-river-dams

Lower Snake Dams © Patagonia

US Dam Removal Movie DAMNATION

The award winning **environmental documentary film DAMNATION** (Matt Stoecker, Ben Knight and Travis Rummel, produced by Patagonia) is a powerful movie raising awareness on river ecology and highlighting dam removal stories in the US.



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