

# The World's Water

Information on the World's Freshwater Resources

## Water Conflict Chronology

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Date	Parties Involved	Basis of Conflict (see Note 1)	Violent Conflict or in the Context of Violence?	Description	Sources
3000 BC	Ea, Noah	Religious account	Yes	Ancient Sumerian legend recounts the deeds of the deity Ea, who punished humanity for its sins by inflicting the Earth with a six-day storm. The Sumerian myth parallels the Biblical account of Noah and the deluge, although some details differ.	Hatami and Gleick 1994
2500 BC	Lagash, Umma	Military tool	Yes	Lagash-Umma Border Dispute-The dispute over the "Gu'edena" (edge of paradise) region begins. Urlama, King of Lagash from 2450 to 2400 B.C., diverts water from this region to boundary canals, drying up boundary ditches to deprive Umma of water. His son Il cuts off the water supply to Girsu, a city in Umma.	Hatami and Gleick 1994
1790 BC	Hammurabi	Political tool	No	Code of Hammurabi for the State of Sumer - Hammurabi lists several laws pertaining to irrigation that provide for possible negligence of irrigation systems and water theft.	Hatami and Gleick 1994

1720-1684 BC	Abi-Eshuh, Iluma-Ilum	Military tool	Yes	Abi-Eshuh v. Iluma-Ilum- A grandson of Hammurabi, Abish or Abi-Eshuh, dams the Tigris to prevent the retreat of rebels lead by Iluma-Ilum, who declared the independence of Babylon. This failed attempt marks the decline of the Sumerians who had reached their apex under Hammurabi.	Hatami and Gleick 1994
1200 BC	Moses, Egypt	Military tool, Religious account	Yes	Parting of the Red Sea- When Moses and the retreating Jews find themselves trapped between the Pharaoh's army and the Red Sea, Moses miraculously parts the waters of the Red Sea, allowing his followers to escape. The waters close behind them and cut off the Egyptians.	Hatami and Gleick 1994
720-705 BC	Assyria, Armenia	Military tool	Yes	After a successful campaign against the Halidians of Armenia, Sargon II of Assyria destroys their intricate irrigation network and floods their land.	Hatami and Gleick 1994
705-682 BC	Sennacherib, Babylon	Military weapon /target	Yes	In quelling rebellious Assyrians in 695 B.C., Sennacherib razes Babylon and diverts one of the principal irrigation canals so that its waters wash over the ruins.	Hatami and Gleick 1994
Unknown	Sennacherib, Jerusalem	Military tool	Yes	As recounted in Chronicles 32.3, Hezekiah digs into a well outside the walls of Jerusalem and uses a conduit to bring in water. Preparing for a possible siege by Sennacherib, he cuts off water supplies outside of the city walls, and Jerusalem survives the attack.	Hatami and Gleick 1994
681-699 BC	Assyria, Tyre	Military tool, Religious account	Yes	Esarhaddon, an Assyrian, refers to an earlier period when gods, angered by insolent mortals, created destructive floods. According to inscriptions recorded during his reign, Esarhaddon besieges Tyre, cutting off food and water.	Hatami and Gleick 1994
669-626 BC	Assyria, Arabia, Elam	Military tool, Military target	Yes	Assurbanipal's inscriptions also refer to a siege against Tyre, although scholars attribute it to Esarhaddon. In campaigns	Hatami and Gleick 1994

against both Arabia and Elam in 645 B.C., Assurbanipal, son of Esarhaddon, dries up wells to deprive Elamite troops. He also guards wells from Arabian fugitives in an earlier Arabian war. On his return from victorious battle against Elam, Assurbanipal floods the city of Sapihel, and ally of Elam. According to inscriptions, he dams the Ulai River with the bodies of dead Elamite soldiers and deprives dead Elamite kinds of their food and water offerings.

612 BC	Egypt, Persia, Babylon, Assyria	Military tool	Yes	A coalition of Egyptian, Median (Persian), and Babylonian forces attacks and destroys Ninevah, the capital of Assyria. Nebuchadnezzar's father, Nebopolassar, leads the Babylonians. The converging armies divert the Khosr River to create a flood, which allows them to elevate their siege engines on rafts.	Hatami and Gleick 1994
605-562 BC	Babylon	Military tool	No	Nebuchadnezzar builds immense walls around Babylon, using the Euphrates and canals as defensive moats surrounding the inner castle.	Hatami and Gleick 1994
558-528 BC	Babylon	Military tool	Yes	On his way from Sardis to defeat Nabonidus at Babylon, Cyrus faces a powerful tributary of the Tigris, probably the Diyalah. According to Herodotus' account, the river drowns his royal white horse and presents a formidable obstacle to his march. Cyrus, angered by the "insolence" of the river, halts his army and orders them to cut 360 canals to divert the river's flow. Other historians argue the Cyrus needed the water to maintain his troops on their southward journey, while another asserts that the construction was an attempt to win the confidence of the locals.	Hatami and Gleick 1994
539 BC	Babylon	Military tool	Yes	According to Herodotus, Cyrus invades Babylon by diverting the Euphrates above the city and marching troops along the dry riverbed. This popular account describes a midnight attack that coincided with a Babylonian feast.	Hatami and Gleick 1994

355-323 BC	Babylon	Military tool	Yes	Returning from the razing of Persepolis, Alexander proceeds to India. After the Indian campaigns, he heads back to Babylon via the Persian Gulf and the Tigris, where he tears down defensive weirs that the Persians had constructed along the river. Arrian describes Alexander's disdain for the Persians' attempt to block navigation, which he saw as "unbecoming to men who are victorious in battle."	Hatami and Gleick 1994
1503	Florence and Pisa warring states.	Military tool	Yes	Leonardo da Vinci and Machievelli plan to divert Arno River away from Pisa during conflict between Pisa and Florence.	Honan 1996
1573-74	Holland and Spain	Military tool	Yes	In 1573 at the beginning of the eighty years war against Spain, the Dutch flooded the land to break the siege of Spanish troops on the town Alkmaar. The same defense was used to protect Lieden in 1574. This strategy became known as the Dutch Water Line and was used frequently for defense in later years.	Dutch Water Line 2002
1642	China; Ming Dynasty	Military tool	Yes	The Huang He's dikes breached for military purposes. In 1642, "toward the end of the Ming dynasty (1368-1644), General Gao Mingheng used the tactic near Kaifeng in an attempt to suppress a peasant uprising."	Hillel 1991
1672	French, Dutch	Military tool	Yes	Louis XIV starts the third of the Dutch Wars in 1672, in which the French overran the Netherlands. In defense, the Dutch opened their dikes and flooded the country, creating a watery barrier that was virtually impenetrable.	Columbia 2000
1863	United States Civil War	Military tool	Yes	General U.S. Grant, during the Civil War campaign against Vicksburg, cut levees in the battle against the Confederates.	Grant 1885, Barry 1997
1898	Egypt; France; Britain	Military and political tool,	Military maneuvers	Military conflict nearly ensues between Britain and France in 1898 when a French expedition attempted to gain control of	Moorhead 1960

		Control of water resources		the headwaters of the White Nile. While the parties ultimately negotiates a settlement of the dispute, the incident has been characterized as having "dramatized Egypt's vulnerable dependence on the Nile, and fixed the attitude of Egyptian policy-makers ever since."	
1907-1913	Owens Valley, Los Angeles, California	Political tool, Control of water resources, Terrorism, and Development dispute	Yes	The Los Angeles Valley aqueduct/pipeline suffers repeated bombings in an effort to prevent diversions of water from the Owens Valley to Los Angeles.	Reisner 1986, 1993
1915	German Southwest Africa	Military tool	Yes	Union of South African troops capture Windhoek, capital of German Southwest Africa. (May.) Retreating German troops poison wells – "a violation of the Hague convention."	Daniel 1995
1935	California, Arizona	Political tool, development dispute	Military maneuvers	Arizona calls out the National Guard and militia units to the border with California to protest the construction of Parker Dam and diversions from the Colorado River; dispute ultimately is settled in court.	Reisner 1986, 1993
1938	China and Japan	Military tool, Military target	Yes	Chiang Kai-shek orders the destruction of flood-control dikes of the Huayuankou section of the Huang He (Yellow) river to flood areas threatened by the Japanese army. West of Kaifeng dikes are destroyed with dynamite, spilling water across the flat plain. The flood destroyed part of the invading army and its heavy equipment was mired in thick mud, though Wuhan, the headquarters of the Nationalist government was taken in October. The waters flooded an area variously estimated as between 3,000 and 50,000 square kilometers, and killed Chinese estimated in numbers between "tens of thousands" and "one million."	Hillel 1991, Yang Lang 1989, 1994
1939-1942	Japan, China	Military	Yes	Japanese chemical and biological weapons activities	Harris 1994

		target, Military tool			reportedly include tests by “Unit 731” against military and civilian targets by lacing water wells and reservoirs with typhoid and other pathogens.	
1940-1945	Multiple parties	Military target	Yes		Hydroelectric dams routinely bombed as strategic targets during World War II.	Gleick 1993
1943	Britain, Germany	Military target	Yes		British Royal Air Force bombed dams on the Mohne, Sorpe, and Eder Rivers, Germany (May 16, 17). Mohne Dam breach killed 1,200, destroyed all downstream dams for 50 km.	Kirschner 1949
1944	Germany, Italy, Britain, United States	Military tool	Yes		German forces used waters from the Isoletta Dam (Liri River) in January and February to successfully destroy British assault forces crossing the Garigliano River (downstream of Liri River). The German Army then dammed the Rapido River, flooding a valley occupied by the American Army.	Corps of Engineers 1953
1944	Germany, Italy, Britain, United States	Military tool	Yes		German Army flooded the Pontine Marches by destroying drainage pumps to contain the Anzio beachhead established by the Allied landings in 1944. Over 40 square miles of land were flooded; a 30-mile stretch of landing beaches was rendered unusable for amphibious support forces.	Corps of Engineers 1953
1944	Germany, Allied forces	Military tool	Yes		Germans flooded the Ay River, France (July) creating a lake two meters deep and several kilometers wide, slowing an advance on Saint Lo, a German communications center in Normandy.	Corps of Engineers 1953
1944	Germany, Allied forces	Military tool	Yes		Germans flooded the Ill River Valley during the Battle of the Bulge (winter 1944-45) creating a lake 16 kilometers long, 3-6 kilometers wide, and 1-2 meters deep, greatly delaying the American Army’s advance toward the Rhine.	Corps of Engineers 1953
1947	Bangladesh, India	Development	No		Partition divides the Ganges River between Bangladesh and	Butts 1997,

onwards		disputes, Control of water resources		India; construction of the Farakka barrage by India, beginning in 1962, increases tension; short-term agreements settle dispute in 1977-82, 1982-84, and 1985-88, and thirty-year treaty is signed in 1996.	Samson & Charrier 1997
1947- 1960s	India, Pakistan	Development disputes, Control of water resources, and Political tool	No	Partition leaves Indus basin divided between India and Pakistan; disputes over irrigation water ensue, during which India stems flow of water into irrigation canals in Pakistan; Indus Waters Agreement reached in 1960 after 12 years of World Bank-led negotiations.	Bingham <i>et al.</i> 1994, Wolf 1997
1948	Arabs, Israelis	Military tool	Yes	Arab forces cut off West Jerusalem's water supply in first Arab-Israeli war.	Wolf 1995, 1997
1950s	Korea, United States, others	Military target	Yes	Centralized dams on the Yalu River serving North Korea and China are attacked during Korean War.	Gleick 1993
1951	Korea, United Nations	Military tool and Military target	Yes	North Korea released flood waves from the Hwachon Dam damaging floating bridges operated by UN troops in the Pukhan Valley. U.S. Navy plans were then sent to destroy spillway crest gates.	Corps of Engineers 1953
1951	Israel, Jordan, Syria	Political tool, Military tool, Development disputes	Yes	Jordan makes public its plans to irrigate the Jordan Valley by tapping the Yarmouk River; Israel responds by commencing drainage of the Huleh swamps located in the demilitarized zone between Israel and Syria; border skirmishes ensue between Israel and Syria.	Wolf 1997, Samson & Charrier 1997
1953	Israel, Jordan, Syria	Development dispute, Military target, Political tool	Yes	Israel begins construction of its National Water Carrier to transfer water from the north of the Sea of Galilee out of the Jordan basin to the Negev Desert for irrigation. Syrian military actions along the border and international disapproval lead Israel to move its intake to the Sea of Galilee.	Samson & Charrier 1997

1958	Egypt, Sudan	Military tool, Political tool, Control of water resources	Yes	Egypt sends an unsuccessful military expedition into disputed territory amidst pending negotiations over the Nile waters, Sudanese general elections, and an Egyptian vote on Sudan-Egypt unification; Nile Water Treaty signed when pro-Egyptian government elected in Sudan.	Wolf 1997
1960s	North Vietnam, United States	Military target	Yes	Irrigation water supply systems in North Vietnam are bombed during Vietnam War. 661 sections of dikes damaged or destroyed.	IWTC 1967, Gleick 1993, Zemmali 1995
1962 to 1967	Brazil; Paraguay	Military tool, Political tool, Control of water resources	Military maneuvers	Negotiations between Brazil and Paraguay over the development of the Paraná River are interrupted by a unilateral show of military force by Brazil in 1962, which invades the area and claims control over the Guaira Falls site. Military forces were withdrawn in 1967 following an agreement for a joint commission to examine development in the region.	Murphy and Sabadell 1986
1963-1964	Ethiopia, Somalia	Development dispute, Military tool, Political tool	Yes	Creation of boundaries in 1948 leaves Somali nomads under Ethiopian rule; border skirmishes occur over disputed territory in Ogaden desert where critical water and oil resources are located; cease-fire is negotiated only after several hundred are killed.	Wolf 1997
1964	Cuba, United States	Military weapon	No	On February 6, 1964, the Cuban government ordered the water supply to the U.S. Naval Base at Guantanamo Bay cut off.	Guantanamo Bay Gazette. 1964.
1965	Zambia, Rhodesia, Great Britain	Military target	No	President Kenneth Kaunda calls on British government to send troops to Kariba Dam to protect it from possible saboteurs from Rhodesian government.	Chenje 2001



1965-1966	Israel, Syria	Military tool, Political tool, Control of water resources, Development dispute	Yes	Fire is exchanged over “all-Arab” plan to divert the Jordan River headwaters (Hasbani and Baniyas) and presumably preempt Israeli National Water Carrier; Syria halts construction of its diversion in July 1966.	Wolf 1995, 1997
1966-1972	Vietnam, US	Military tool	Yes	U.S. tries cloud-seeding in Indochina to stop flow of materiel along Ho Chi Minh trail.	Plant 1995
1967	Israel, Syria	Military target and tool	Yes	Israel destroys the Arab diversion works on the Jordan River headwaters. During Arab-Israeli War Israel occupies Golan Heights, with Baniyas tributary to the Jordan; Israel occupies West Bank.	Gleick 1993, Wolf 1995, 1997, Wallenstein & Swain 1997
1969	Israel, Jordan	Military target and tool	Yes	Israel, suspicious that Jordan is overdiverting the Yarmouk, leads two raids to destroy the newly-built East Ghor Canal; secret negotiations, mediated by the US, lead to an agreement in 1970.	Samson & Charrier 1997
1970s	Argentina, Brazil, Paraguay	Control of water resources, Development dispute	No	Brazil and Paraguay announce plans to construct a dam at Itaipu on the Paraná River, causing Argentina concern about downstream environmental repercussions and the efficacy of their own planned dam project downstream. Argentina demands to be consulted during the planning of Itaipu but Brazil refuses. An agreement is reached in 1979 that provides for the construction of both Brazil and Paraguay’s dam at Itaipu and Argentina’s Yacyreta dam.	Wallenstein & Swain 1997
1972	North Vietnam	Military target	Yes	United States bombs dikes in the Red River delta, rivers, and canals during massive bombing campaign.	Columbia Electronic Encyclopedia

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1974	Iraq, Syria	Military target, Military tool, Political tool, Development dispute	Military maneuvers	Iraq threatens to bomb the al-Thawra dam in Syria and massed troops along the border, alleging that the dam had reduced the flow of Euphrates River water to Iraq.	Gleick 1994
1975	Iraq, Syria	Development dispute, Military tool, Political tool	Military maneuvers	As upstream dams are filled during a low-flow year on the Euphrates, Iraqis claim that flow reaching its territory is “intolerable” and asks the Arab League to intervene. Syrians claim they are receiving less than half the river’s normal flow and pull out of an Arab League technical committee formed to mediate the conflict. In May Syria closes its airspace to Iraqi flights and both Syrian and Iraq reportedly transfer troops to their mutual border. Saudi Arabia successfully mediates the conflict.	Gleick 1993, 1994, Wolf 1997
1975	Angola, South Africa	Military control of water resources	Yes	South African troops move into Angola to occupy and defend the Ruacana hydropower complex, including the Gové Dam on the Kunene River. Goal is to take possession of and defend the water resources of southwestern Africa and Namibia.	Meissner 2000
1978- onwards	Egypt, Ethiopia	Development dispute, Political tool	No	Long standing tensions over the Nile, especially the Blue Nile, originating in Ethiopia. Ethiopia’s proposed construction of dams on the headwaters of the Blue Nile leads Egypt to repeatedly declare the vital importance of water. “The only matter that could take Egypt to war again is water” (Anwar Sadat-1979). “The next war in our region will be over the waters of the Nile, not politics” (Boutrous Ghali-1988).	Gleick 1991, 1994
1978-1984	Sudan	Development dispute, Military	Yes	Demonstrations in Juba, Sudan in 1978 opposing the construction of the Jonglei Canal led to the deaths of two students. Construction of the Jonglei Canal in the Sudan was	Suliman 1998; Keluel- Jang 1997

		target, Terrorism		forcibly suspended in 1984 following a series of attacks on the construction site.	
1980s	Mozambique, Rhodesia/Zimbabwe, South Africa	Military target, Terrorism	Yes	Regular destruction of power lines from Cahora Bassa Dam during fight for independence in the region. Dam targeted by RENAMO.	Chenje 2001
1981	Iran, Iraq	Military target and tool	Yes	Iran claims to have bombed a hydroelectric facility in Kurdistan, thereby blacking out large portions of Iraq, during the Iran-Iraq War.	Gleick 1993
1980-1988	Iran, Iraq	Military tool	Yes	Iran diverts water to flood Iraqi defense positions.	Plant 1995
1986	Lesotho, South Africa	Development goal, Access to resources	Yes	Bloodless coup by Lesotho's defense forces, with support from South Africa, lead to immediate agreement with South Africa for water from the Highlands of Lesotho, after 30 previous years of unsuccessful negotiations. There is disagreement over the degree to which water was a motivating factor for either party.	Mohamed 2001
1988	Angola, South Africa, Cuba	Military goal, Military target	Yes	Cuban and Angolan forces launch an attack on Calueque Dam via land and then air. Considerable damage inflicted on dam wall; power supply to dam cut. Water pipeline to Owamboland cut and destroyed.	Meissner 2000
1982	Israel, Lebanon, Syria	Military tool	Yes	Israel cuts off the water supply of Beirut during siege.	Wolf 1997
1982	Guatemala	Development dispute	Yes	177 civilians killed in Rio Negro over opposition to Chixoy hydroelectric dam.	Levy 2000
1984	United States	Terrorism	No	Members of the Rajneeshee religious cult contaminate a city water supply tank in The Dalles, Oregon, using Salmonella. A community outbreak of over 750 cases occurred in a county that normally reports fewer than five cases per year.	Clark and Deininger 2000

1986	North Korea, South Korea	Military tool	No	North Korea's announcement of its plans to build the Kungansan hydroelectric dam on a tributary of the Han River upstream of Seoul raises concerns in South Korea that the dam could be used as a tool for ecological destruction or war.	Gleick 1993
1986	Lesotho, South Africa	Military goal; Control of water resources	Yes	South Africa supports coup in Lesotho over support for ANC and anti-apartheid, and water. New government in Lesotho then quickly signs Lesotho Highlands water agreement.	American University 2000b
1990	South Africa	Development dispute, Control of water resources	No	Pro-apartheid council cuts off water to the Wesselton township of 50,000 blacks following protests over miserable sanitation and living conditions.	Gleick 1993
1990	Iraq, Syria, Turkey	Development dispute, Military tool, Political tool	No	The flow of the Euphrates is interrupted for a month as Turkey finishes construction of the Ataturk Dam, part of the Grand Anatolia Project. Syria and Iraq protest that Turkey now has a weapon of war. In mid-1990 Turkish president Turgut Ozal threatens to restrict water flow to Syria to force it to withdraw support for Kurdish rebels operating in southern Turkey.	Gleick 1993 & 1995
1991-present	Karnataka, Tamil Nadu (India)	Development dispute, Control of water resources	Yes	Violence erupts when Karnataka rejects an Interim Order handed down by the Cauvery Waters Tribunal, set up by the Indian Supreme Court. The Tribunal was established in 1990 to settle two decades of dispute between Karnataka and Tamil Nadu over irrigation rights to the Cauvery River.	Gleick 1993, Butts 1997, American University 2000a
1991	Iraq, Kuwait, US	Military target	Yes	During the Gulf War, Iraq destroys much of Kuwait's desalination capacity during retreat.	Gleick 1993
1991	Iraq, Turkey, United	Military tool	Yes	Discussions are held at the United Nations about using the	Gleick 1993

	Nations			Ataturk Dam in Turkey to cut off flows of the Euphrates to Iraq.	
1991	Iraq, Kuwait, US	Military target	Yes	Baghdad's modern water supply and sanitation system are intentionally targeted by Allied coalition.	Gleick 1993
1992	Czechoslovakia, Hungary	Political tool, Development dispute	Military maneuvers	Hungary abrogates a 1977 treaty with Czechoslovakia concerning construction of the Gabčíkovo/Nagymaros project based on environmental concerns. Slovakia continues construction unilaterally, completes the dam, and diverts the Danube into a canal inside the Slovakian republic. Massive public protest and movement of military to the border ensue; issue taken to the International Court of Justice.	Gleick 1993
1992	Bosnia, Bosnian Serbs	Military tool	Yes	The Serbian siege of Sarajevo, Bosnia and Herzegovina, includes a cutoff of all electrical power and the water feeding the city from the surrounding mountains. The lack of power cuts the two main pumping stations inside the city despite pledges from Serbian nationalist leaders to United Nations officials that they would not use their control of Sarajevo's utilities as a weapon. Bosnian Serbs take control of water valves regulating flow from wells that provide more than 80 percent of water to Sarajevo; reduced water flow to city is used to 'smoke out' Bosnians.	Burns 1992, Husarska 1995
1993-present	Iraq	Military tool	No	To quell opposition to his government, Saddam Hussein reportedly poisons and drains the water supplies of southern Shiite Muslims, the Ma'dan. The European Parliament and UN Human Rights Commission deplore use of water as weapon in region.	Gleick 1993, American University 2000c
1993	Yugoslavia	Military target and tool	Yes	Peruca Dam intentionally destroyed during war.	Gleick 1993
1995	Ecuador, Peru	Military and	Yes	Armed skirmishes arise in part because of disagreement over	Samson &

		political tool		the control of the headwaters of Cenepa River. Wolf argues that this is primarily a border dispute simply coinciding with location of a water resource.	Charrier 1997, Wolf 1997
1997	Singapore, Malaysia	Political tool	No	Malaysia supplies about half of Singapore's water and in 1997 threatened to cut off that supply in retribution for criticisms by Singapore of policy in Malaysia.	Zachary 1997
1998	Tajikistan	Terrorism, Political tool	Potential	On November 6, a guerrilla commander threatened to blow up a dam on the Kairakkhum channel if political demands are not met. Col. Makhmud Khudoberdyev made the threat, reported by the ITAR-Tass News Agency.	WRR 1998
1998	Angola	Military and political tool	Yes	In September 1998, fierce fighting between UNITA and Angolan government forces broke out at Gove Dam on the Kunene River for control of the installation.	Meissner 2001
1998	United States	Cyber-terrorism	No	A 12-year old computer hacker broke into the SCADA computer system that runs Arizona's Roosevelt Dam, giving him complete control of the dam's massive floodgates. The cities of Mesa, Tempe, and Phoenix, Arizona are downstream of this dam. No damage was done.	Gellman 2002
1998	Democratic Republic of Congo	Military target, Terrorism	Yes	Attacks on Inga Dam during efforts to topple President Kabila. Disruption of electricity supplies from Inga Dam and water supplies to Kinshasa	Chenje 2001, Human Rights Watch 1998
1999	Lusaka, Zambia	Terrorism, Political tool	Yes	Bomb blast destroyed the main water pipeline, cutting off water for the city of Lusaka, population 3 million.	FTGWR 1999
1999	Yugoslavia	Military target	Yes	Belgrade reported that NATO planes had targeted a hydroelectric plant during the Kosovo campaign.	Reuters 1999a

1999	Bangladesh	Development dispute, Political tool	Yes	50 hurt during strikes called to protest power and water shortages. Protest led by former Prime Minister Begum Khaleda Zia over deterioration of public services and in law and order.	Ahmed 1999
1999	Yugoslavia	Military target	Yes	NATO targets utilities and shuts down water supplies in Belgrade. NATO bombs bridges on Danube, disrupting navigation.	Reuters 1999b
1999	Yugoslavia	Political tool	Yes	Yugoslavia refuses to clear war debris on Danube (downed bridges) unless financial aid for reconstruction is provided; European countries on Danube fear flooding due to winter ice dams will result. Diplomats decry environmental blackmail.	Simons 1999
1999	Kosovo	Political tool	Yes	Serbian engineers shut down water system in Pristina prior to occupation by NATO.	Reuters 1999c
1999	Angola	Terrorism, Political tool	Yes	100 bodies were found in four drinking water wells in central Angola.	International Herald Tribune 1999
1999	Puerto Rico, U.S.	Political tool	No	Protesters blocked water intake to Roosevelt Roads Navy Base in opposition to U.S. military presence and Navy's use of the Blanco River, following chronic water shortages in neighboring towns.	New York Times 1999
1999	East Timor	Military tool, Political tool, Terrorism	Yes	Militia opposing East Timor independence kill pro-independence supporters and throw bodies in water well.	BBC 1999
1999	Kosovo	Terrorism, Political tool	Yes	Contamination of water supplies/wells by Serbs disposing of bodies of Kosovar Albanians in local wells.	CNN 1999

1999-2000	Namibia, Botswana, Zambia	Military goal: Control of water resources	No	Sedudu/Kasikili Island, in the Zambezi/Chobe River. Dispute over border and access to water. Presented to the International Court of Justice	ICJ 1999
2000	Ethiopia	Development dispute	Yes	One man stabbed to death during fight over clean water during famine in Ethiopia	Sandrasagra 2000
2000	Central Asia: Kyrgyzstan, Kazakhstan, Uzbekistan	Political tool	No	Kyrgyzstan cuts off water to Kazakhstan until coal is delivered; Uzbekistan cuts off water to Kazakhstan for non-payment of debt.	Pannier 2000
2000	Hazarajat, Afghanistan	Development dispute	Yes	Violent conflicts broke out over water resources in the villages Burna Legan and Taina Legan, and in other parts of the region, as drought depleted local resources.	Cooperation Center for Afghanistan 2000
2000	India: Gujarat	Development dispute	Yes	Water riots reported in some areas of Gujarat to protest against authority's failure to arrange adequate supply of tanker water. Police are reported to have shot into a crowd at Falla village near Jamnagar, resulting in the death of three and injuries to 20 following protests against the diversion of water from the Kankavati dam to Jamnagar town.	FTGWR 2000
2000	Australia	Terrorism	No	In Queensland, Australia, on April 23 <sup>rd</sup> , 2000, police arrested a man for using a computer and radio transmitter to take control of the Maroochy Shire wastewater system and release sewage into parks, rivers, and property. This is one of the first documented cases of cyber-terrorism in the water industry.	Gellman 2002
2000	China	Development dispute	Yes	Civil unrest erupted over use and allocation of water from Baiyangdian Lake – the largest natural lake in northern China. Several people died in riots by villagers in July 2000 in Shandong after officials cut off water supplies. In August	Pottinger 2000



				2000, six died when officials in the southern province of Guangdong blew up a water channel to prevent a neighboring county from diverting water.	
2001	Israel, Palestine	Terrorism, Control of water resources		Palestinians destroy water supply pipelines to West Bank settlement of Yitzhar and to Kibbutz Kisufim. Agbat Jabar refugee camp near Jericho disconnected from its water supply after Palestinians looted and damaged local water pumps. Palestinians accuse Israel of destroying a water cistern, blocking water tanker deliveries, and attacking materials for a wastewater treatment project.	Israel Line 2001a,b; ENS 2001a.
2001	Pakistan	Development dispute, Terrorism	Yes	Civil unrest over severe water shortages caused by the long-term drought. Protests began in March and April and continued into summer. Riots, four bombs in Karachi (June 13), one death, 12 injuries, 30 arrests. Ethnic conflicts as some groups “accuse the government of favoring the populous Punjab province [over Sindh province] in water distribution.”	Nadeem 2001, Soloman 2001
2001	Macedonia	Terrorism, Control of water resources	Yes	Water flow to Kumanovo (population 100,000) cut off for 12 days in conflict between ethnic Albanians and Macedonian forces. Valves of Glaznja and Lipkovo Lakes damaged.	AFP 2001, Macedonia Information Agency 2001
2001	Philippines	Terrorism, Political tool	No	Philippine authorities shut off water to six remote southern villages yesterday after residents complained of a foul smell from their taps, raising fears Muslim guerrillas had contaminated the supplies. Abu Sayyaf guerrillas, accused of links with Saudi-born militant Osama bin Laden, had threatened to poison the water supply in the mainly Christian town of Isabela on Basilan island if the military did not stop an offensive against them.	World Environment News 2001
2001	Afghanistan	Military target	Yes	U.S. forces bombed the hydroelectric facility at Kajaki Dam in	BBC 2001,

				Helmand province of Afghanistan, cutting off electricity for the city of Kandahar. The dam itself was apparently not targeted.	Parry 2001
2002	Nepal	Terrorism, Political Tool	Yes	The Khumbuwan Liberation Front (KLF) blew up a hydroelectric powerhouse of 250 kilowatts in Bhojpur District January 26. The power supply to Bhojpur and adjoining areas was cut off. Estimated repair time was 6 months; repair costs were estimated at 10 million Rs. By June 2002, Maoist rebels had destroyed more than seven micro-hydro projects as well as an intake of a drinking water project and pipelines supplying water to Khalanga in western Nepal.	Kathmandu Post 2002; FTGWR 2002a
2002	Rome, Italy	Terrorism	No	Italian police arrest four Moroccans allegedly planning to contaminate the water supply system in Rome with a cyanide-based chemical, targeting buildings that included the United States embassy. Ties to Al-Queda were suggested.	BBC 2002
2002	Kashmir, India	Development dispute	Yes	Two people were killed and 25 others injured in Kashmir when police fired at a group of villagers clashing over water sharing. The incident took place in Garend village in a dispute over sharing water from an irrigation stream.	The Japan Times 2002
2002	Colombia	Terrorism	Yes	Colombian rebels in January damaged a gate valve in the dam that supplies most of Bogota's drinking water. Revolutionary Armed Forces of Colombia (FARC), detonated an explosive device planted on a German-made gate valve located inside a tunnel in the Chingaza Dam, which provides most of the capital city's water.	Waterweek 2002
2002	Karnataka, Tamil Nadu, India	Development dispute	Yes	Continuing violence over the allocation of the Cauvery River between Karnataka and Tamil Nadu. Riots, property destruction, arrests through September and October.	The Hindu 2002, The Times of India 2002a.
2002	United States	Terrorism	No	Earth Liberation Front threatens the water supply for the town	Crecente

				of Winter Park. Previously, this group claimed responsibility for the destruction of a ski lodge in Vail, Colorado that threatened lynx habitat.	2002, Associated Press 2002
2003	United States	Terrorism	No	Al-Qaida threatens US water systems via call to Saudi Arabian magazine. Al-Qaida does not “rule out...the poisoning of drinking water in American and Western cities.”	Associated Press 2003, Waterman 2003
2003	Iraq	Terrorism	Yes	Sabotage/bombing of main water pipeline in Baghdad. The sabotage of the water pipeline was the first such strike against Baghdad's water system, city water engineers said. It happened around 7 in the morning, when a blue Volkswagen Passat stopped on an overpass near the Nidaa mosque and an explosive was fired at the six-foot-wide water main in the northern part of Baghdad, said Hayder Muhammad, the chief engineer for the city's water treatment plants.	Tierney and Worth 2003

**Notes:**

1. Conflicts may stem from the drive to possess or control another nation’s water resources, thus making water systems and resources a *political or military goal*. Inequitable distribution and use of water resources, sometimes arising from a water development, may lead to *development disputes*, heighten the importance of water as a strategic goal or may lead to a degradation of another’s source of water. Conflicts may also arise when water systems are used as instruments of war, either as *targets* or *tools*. These distinctions are described in detail in Gleick (1993, 1998). In 2001, the Institute began including incidents involving water and *terrorism*. We note, however, the difficulty in defining “terrorism” (as opposed to Political goal or other category) and caution users to use care with these categories.

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