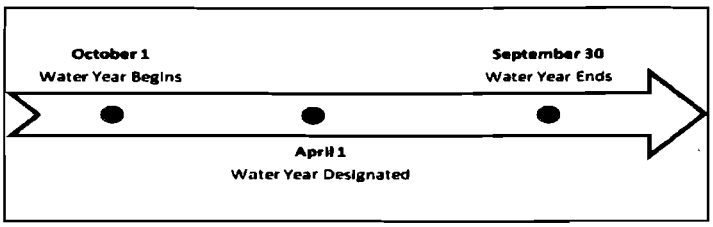
Water Year Type and Restoration Flows Brief

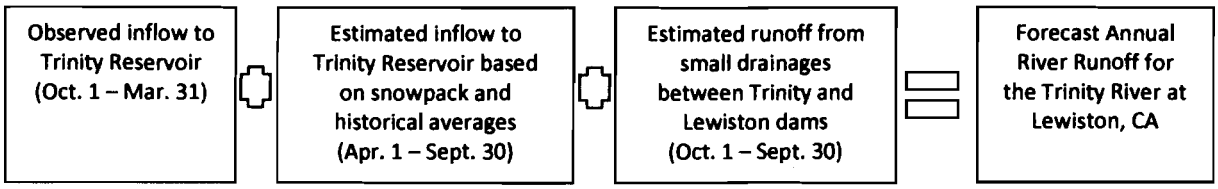
A water year is the 12-month period from any October 1 through September 30 of the following calendar year. The 2012 water year extends from October 1, 2011 to September 30, 2012.

Water Year Designation



The predicted water year type is based on the April 1st forecast for the annual river runoff of the Trinity River at Lewiston, CA. The annual runoff forecast for the Trinity River is based on a combination of snow pack measurements and predictive modeling using statistical and hydrological methods, computed as shown below. The predictive models used to determine the water year type for the Trinity River use statistically average historical conditions (called "50% probability of exceedence"). Over the long term, use of the statistically averaged conditions provides the most accurate predictor of the actual water year type. The annual runoff forecast is jointly developed by the National Weather Service and the California Department of Water Resources for the entire State of California, including the Trinity River and identical forecasts are published in the "Water Supply Outlook for California and Northern Nevada" (http://www.cnrfc.noaa.gov/water_supply.php) produced by the National Weather Service, and in "Bulletin 120" produced by the California Department of Water Resources. The finalized water year forecast determines the water year type (e.g. wet, dry) and the Record of Decision describes the volume of water available to the Trinity River Restoration Program for restoration releases for the different water year types.

Computation of the April 1st Forecast for the Annual Runoff of the Trinity River



Based on the water year prediction, TRRP partners, through the Flow Work Group, develop a hydrograph to recommend spring peak flows, combined with the summer base flows and winter base flows, to schedule the restoration release volume allocated for the particular water year type. The water year determination in April 2012 changed from an anticipated dry year to a normal water year because of the exceptional precipitation in March.

Restoration Release Water Volume Allocation for Flows

Predicted Water Year Type	Restoration Water Allocation (Acre-Feet)	Probability of Occurrence
Extremely Wet	815,000	12 years out of 100
Wet	701,000	28 years out of 100
Normal	647,000	20 years out of 100
Dry	453,000	28 years out of 100
Critically Dry	369,000	12 years out of 100

Source: U.S. Fish and Wildlife Service et. al. (1999). Probability of occurrence based on data from years 1912 to 1994.

On April 7, 2012, TRRP received the April 1, 50% Inflow Forecast from DWR. At the 50% level the predicted annual inflow was 1025 TAF. Per the language of the Flow Study (TRFEFR, 1999), and EIS (2000), this volume corresponds to a Normal Water Year. The Record of Decision water allocation for TRRP restoration releases is 647,000 acre-feet. This table describes how well the predicted water year corresponded to the actual water year in the first twelve years of the Trinity River Restoration Program.

Annual Water Year Summary 2000-2011- Trinity River, California

Water Year	Forecast Water Year Type [G]	Actual Water Year Type [I]	Restoration Water Allocation (acre-feet)	Water Allocation Notes	Actual Restoration Release (acre-feet) [A]	Actual Restoration Release within Allocation given Measurement Uncertainty of ±5%	Safety of Dams Releases (acre-feet) [A,B]	Ceremonial Releases (acre-feet) [A,B]	Other Releases (acre-feet) [A,B]	Total Release to Trinity River (acre-feet) [A]	Peak Release Magnitude (cfs) [A]	Total Diversion thru Carr Tunnels (acre-feet) [C]	Total Inflow into Trinity Reservoir (acre-feet) [C,F]
2000	Wet	Wet	340,000	[D]	359,600	No	200,400	-	-	560,000	5,310	1,108,600	1,860,200
2001	Dry	Dry	369,000	[E]	379,600	Yes	-	4,200	-	383,800	1,760	669,400	786,700
2002	Normal	Normal	470,000	[E]	482,700	Yes	-	-	-	482,700	6,040	629,000	1,243,800
2003	Wet	Wet	453,000	[E]	448,100	Yes	66,300	5,700	34,000	556,100	2,610	857,600	1,796,700
2004	Wet	Wet	647,000	[E]	651,000	Yes	81,100	-	36,200	768,300	6,200	987,500	1,443,000
2005	Normal	Wet	647,000	[H]	647,600	Yes	-	3,600	-	651,200	6,970	465,700	1,412,400
2006	Ex Wet	Ex Wet	815,000	[H]	809,900	Yes	406,300	-	-	1,216,200	10,100	1,350,600	2,396,500
2007	Dry	Dry	453,000	[H]	453,700	Yes	-	4,100	-	457,800	4,750	614,400	715,300
2008	Normal	Dry	647,000	[H]	648,700	Yes	-	-	-	648,700	6,470	555,000	835,800
2009	Dry	Dry	453,000	[H]	446,500	Yes	-	11,100	-	456,600	4,410	539,200	797,200
2010	Normal	Wet	647,000	[H]	656,700	Yes	-	-	-	656,700	6,840	274,700	1,538,000
2011	Wet	Wet	701,000	[H]	721,800	Yes	-	10,800	-	732,600	11,600	473,100	1,780,800
TOTAL			*6,642,000*		*6,704,900*		*756,100*	*39,500*	*70,200*	*7,570,700*		*8,525,800*	*16,405,400*

Notes: All water volume values are rounded to the nearest 100 acre-feet.

A Computed from daily average flow record reported by the US Geological Survey for the Trinity River at Lewiston Streamgage # 11525500. The accuracy of the flow records ranges from +/- 5 percent to +/- 15 percent on a time variable basis.

B Volume estimate for flows above the summer or winter baseflow release for restoration.

C Computed from daily average record provided by the Bureau of Reclamation. Reported negative daily inflow values included "as is" in calculations.

D Restoration water allocation prior to implementation of the 2000 Trinity River Mainstem Fishery Restoration Record of Decision.

E Restoration water allocation limited by Court order 2001-2004. Court ordered volumes varied by year.

F Long-term average annual inflow to Trinity Reservoir (acre-feet/year) from 1911-2007 as provided by the Bureau of Reclamation = 1,254,000

G Water year type based on the April forecast (50% exceedence) from the Water Supply Outlook - California and Northern Nevada published by the California Nevada River Forecast Center, National Weather Service.

H Restoration water allocation as prescribed by the Trinity River Mainstem Fishery Restoration 2000 Record of Decision.

I Actual water year type based the total basin runoff above the Lewiston stream gage. Computed by multiplying inflow to Trinity Reservoir