# 2006 Annual Operating Plan April 1 Runoff Forecast





#### **Definitions**

Native/Natural Rio Grande water: Water that comes directly from the Rio Grande Basin

San Juan-Chama water: Water that is imported into the Rio Grande Basin from the San Juan Basin through the San Juan-Chama Project

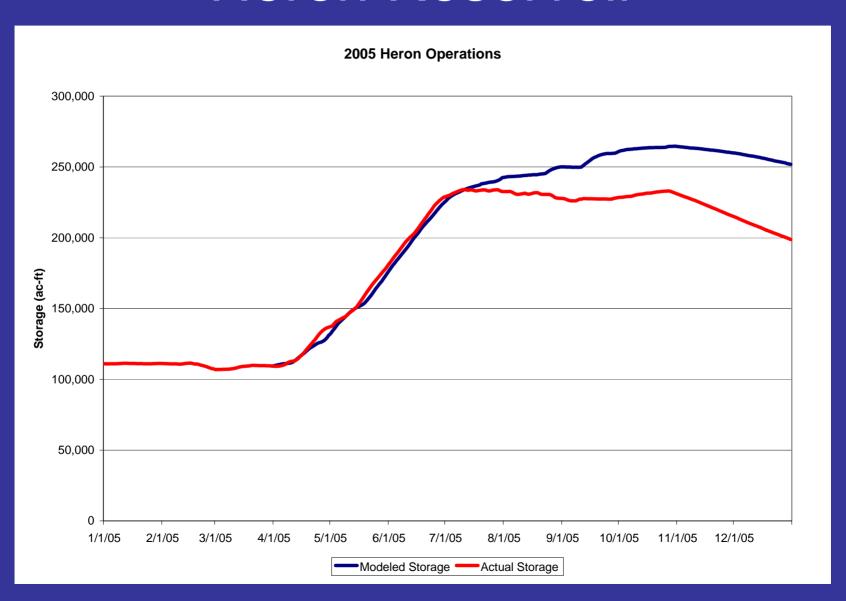
Rio Grande Compact: Agreement between the states of Colorado, New Mexico, and Texas that apportions Rio Grande water between the three states.

Article 7: Section of the Rio Grande Compact that dictates storage in reservoirs. If Rio Grande Project storage is less than 400,000 ac-ft at Elephant Butte and Caballo, no storage of Rio Grande water can take place at El Vado except to satisfy Native American needs.

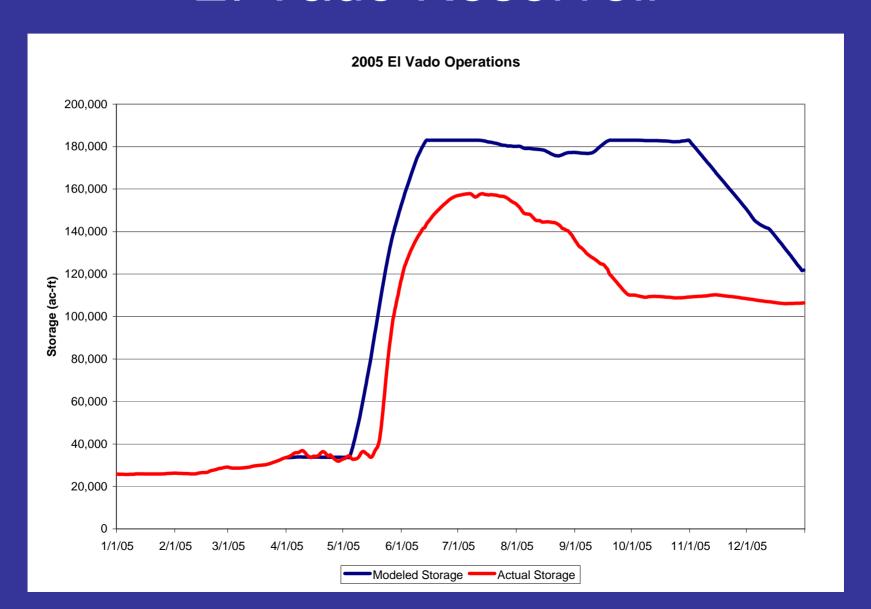
Operated By: Dams:	Reclamation  S DEPARTMENT OF THE MITTAGE  RUMEAU OF RECLAMATION	Corps	Water Supply	Recreation	Flood Control	Sediment Control
HERON	000					
EL VADO	000					
ABIQUIU		000				
NAMBE FALLS	000					
GALISTEO		000				
COCHITI		0 0				
JEMEZ CANYON		000				
ELEPHANT BUTTE	000					

#### 2005: The Year in Review

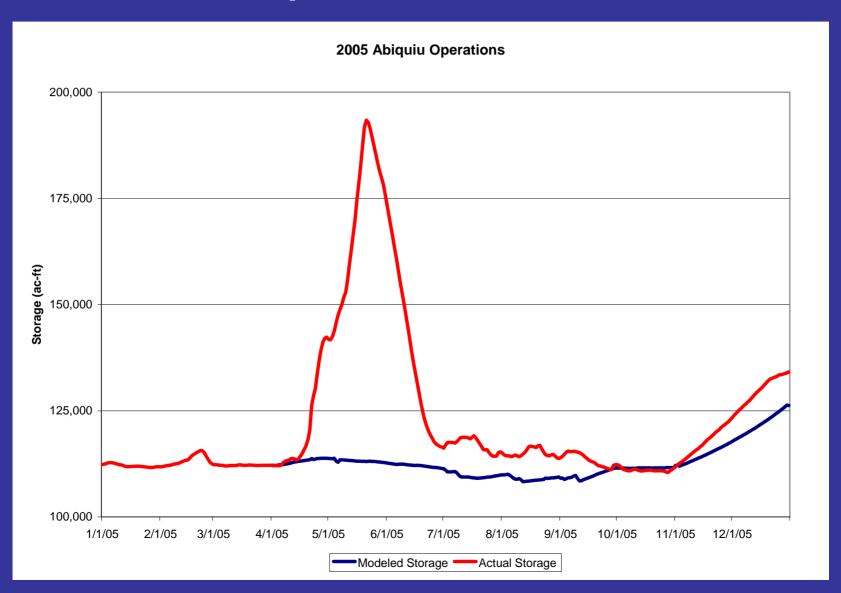
#### Heron Reservoir



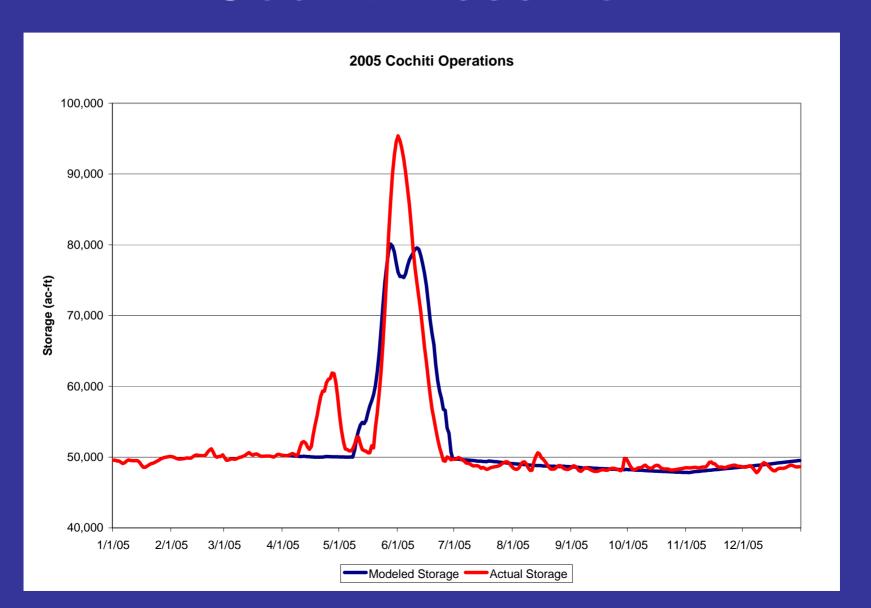
#### El Vado Reservoir



### Abiquiu Reservoir



#### Cochiti Reservoir



### 2006 Water Operations Modeling

### Major Assumptions

- April 1 50% most probable Forecast
- Dry year target flow requirements
- Dry monsoon conditions
- Recession managed using 10 cfs drops
- No supplemental releases for "recruitment flows" (formerly envisioned as "spawning spike")
- Storage occurs under the Emergency Drought Water Agreement for MRGCD & Reclamation

### **April Forecast Data**

	Most		April 1 Most
	Probable		Probable
	Percent of Average		Volume
			(acre-feet)
	2005	2006	2006
Rio Grande @ Del Norte	145%	67%	355,000
El Vado Reservoir Inflow	137%	38%	91,000
Rio Grande @ Otowi	152%	35%	265,000
Santa Fe River @ Santa Fe	174%	10%	470
Jemez Reservoir Inflow	132%	13%	5,900
Heron Reservoir Inflow	130%	44%	58,000

### Major Results

- Snowmelt Runoff well below normal
- Full Irrigation Season for MRGCD
- MRGCD utilizes almost all of it's storage by the end of irrigation season
- BiOp flow requirements met through out the irrigation season
- Supplemental Water Releases begin Mid-March
- Supplemental Water Supplies Fully Utilized to meet BiOp requirements (43,000 – 47,000 af)

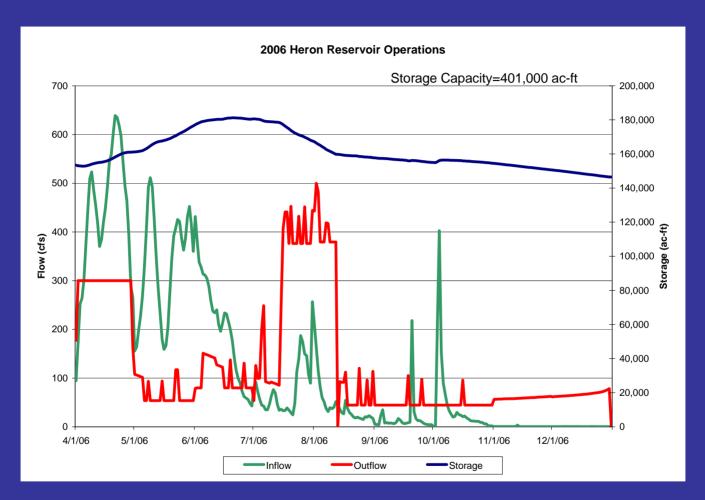
### Major Results - Continued

- Additional Supplemental water supplies may be needed
- Article VII is currently in effect and will remain throughout the year
- Heron Reservoir Inflow roughly 44% of average (58,000 af)
- Recreational Flows provided for the Rio Chama through most of the Summer

#### Heron Reservoir



#### **Proposed 2006 Heron Operations**



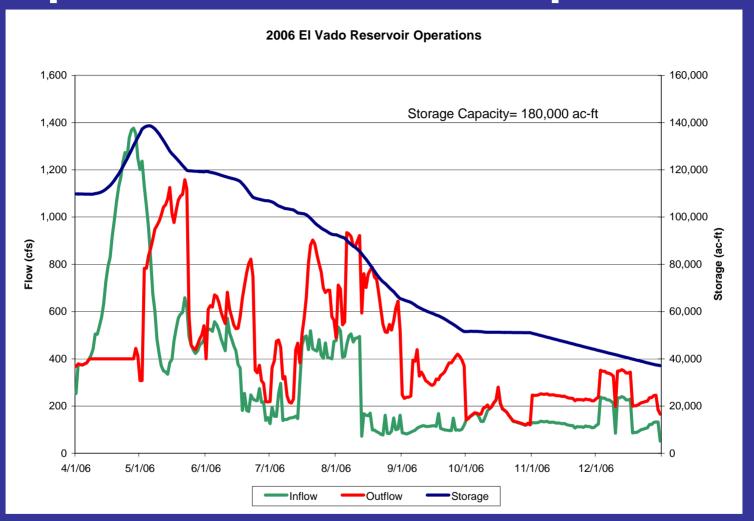
#### Heron Reservoir:

Lake Level: Dropping slightly BOY to EOY from Elevation 7145 to 7128
Water Supply: Able to meet this and next years' SJ-C allocations with a little to spare ("BOY" means beginning of calendar year. "EOY" means end of calendar year)

### El Vado Reservoir



#### **Proposed 2006 El Vado Operations**



#### El Vado Reservoir:

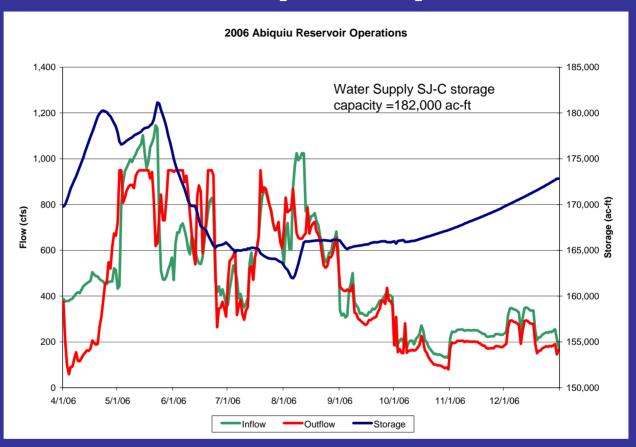
Lake Level: Dropping very significantly from Elev. 6873 to 6785 as water supply storage is used up

Water Supply: Most of last year's bounty of ~100KAF being used this year

### ABIQUIU LAKE



#### Proposed 2006 Abiquiu Operations

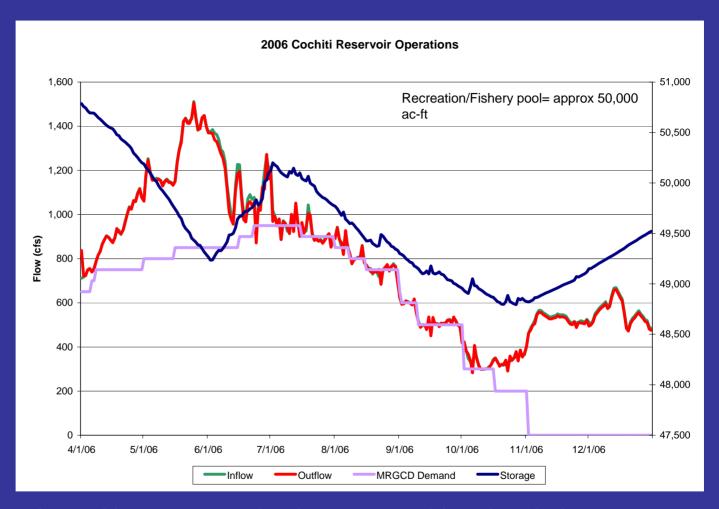


#### Abiquiu Reservoir:

Flood Operations: None expected unless we see big rains during year Lake Level: Started at Elev. 6207 going to full (water supply storage) 6220, dropping to around 6207, then recovering to near full at 6216, EOY Water Supply: Storing Albuquerque's and others' SJ-C water for the future. Silvery Minnow: Storing and releasing SJ-C water for Silvery Minnow this year



#### **Proposed 2006 Cochiti Operations**



#### Cochiti Lake:

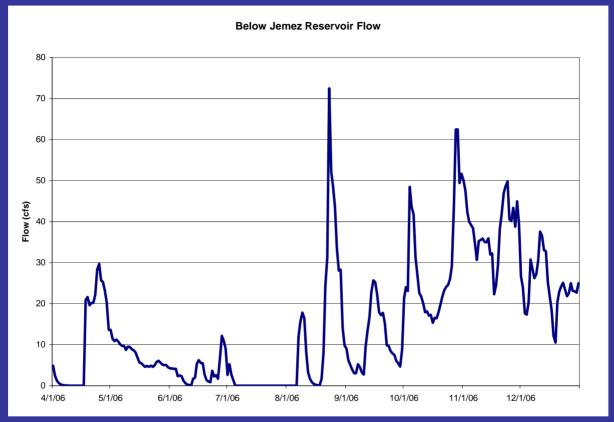
Flood Operations: None expected unless we see big rains during year Lake Level, Recreation, Fishery: Steady year-round (slight evap dip during summer/fall, refilling at end of year)

Water Supply: No water supply storage (just passes inflows downstream)

### JEMEZ CANYON DAM



#### Estimated 2006 Hydrograph below Jemez Reservoir

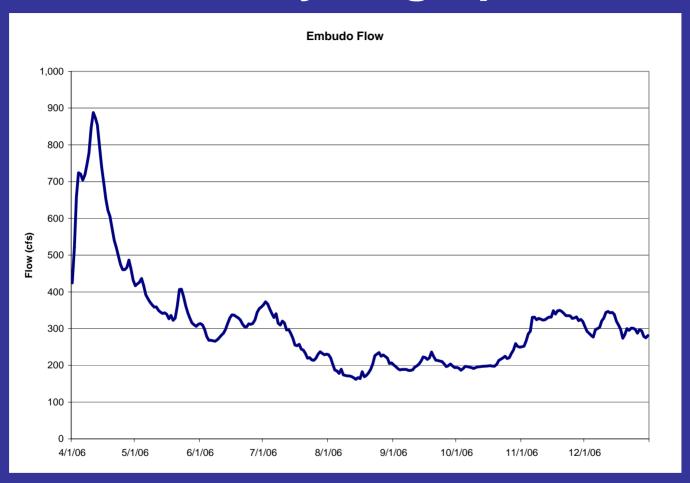


#### Jemez Canyon Reservoir:

Flood Operations: None expected unless we see big rains during year Spring Runoff: Not much water, with a small peak of maybe 30 cfs Summer/Fall Flows: Small peaks of 40 to 70 cfs, unless larger rains come Lake Level: Dry unless short-term flood storage occurs

Water Supply: No water supply storage (just passes inflows downstream)

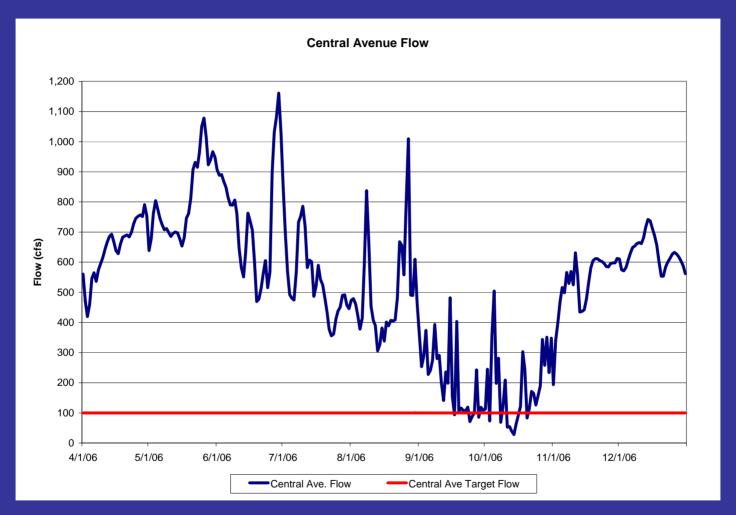
#### Estimated 2006 Hydrograph at Embudo



#### Rio Grande Colorado Border to Rio Chama Confluence:

Spring Runoff Peak: We've probably seen it and it's not very high at around 550 cfs Worst NM Snowpack in the last 55-years means little NM-mountain runoff

#### Estimated Hydrograph at Central Ave.

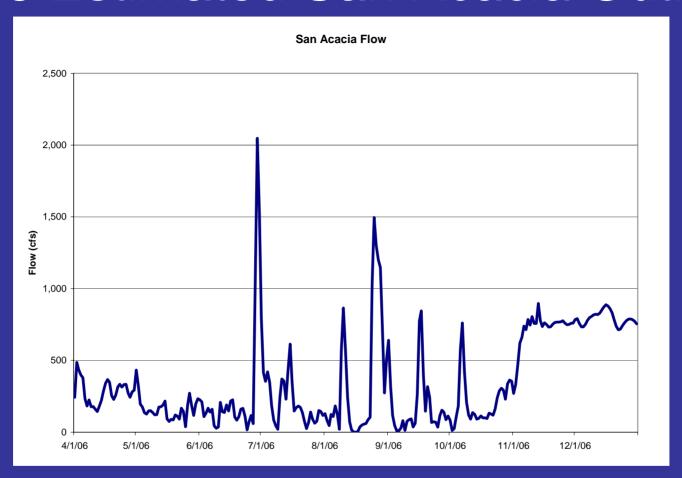


#### Rio Grande Below Cochiti to Albuquerque:

Irrigation Flows: MRGCD Demand peak around 950 cfs late June thru early July. Running very short (or out) by early Oct.

Silvery Minnow Flows: Maintained year-round, dipping to 100 cfs in Oct

#### 2006 Estimated San Acacia Outflow



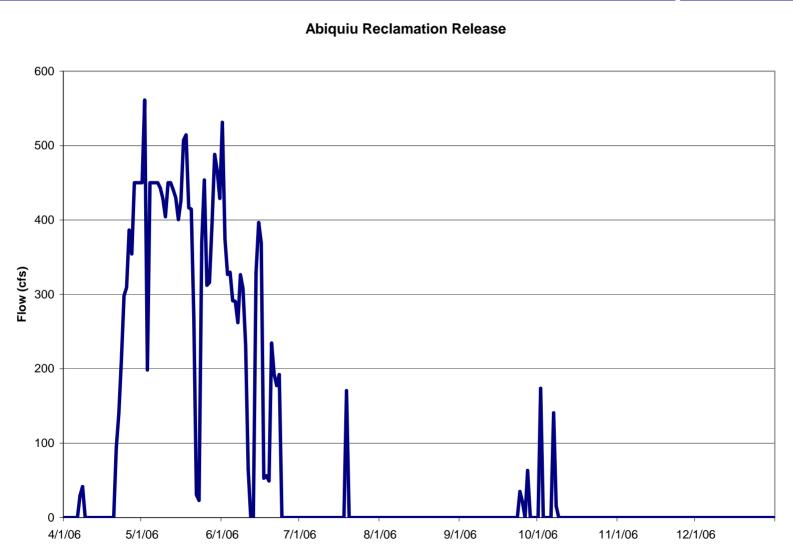
#### Rio Grande Albuquerque to San Acacia:

Silvery Minnow Flows: Wet thru June 15th. Recession/drying at times afterwards

#### Rio Grande San Acacia to San Marcial:

Silvery Minnow Flows: Wet thru June 15th. Recession/drying at times, and extended dry stretches with occasional re-wetting from monsoons

## 2006 Estimated Supplemental Water Released from Abiquiu



### 2006 Supply/Demand Outlook

Supply	Demand		
43,000 af – 47,000 af	15,000 af – 52,000 af		

- Actual supplemental water used in the model run is approximately 47,000 ac-ft
  - 14,000 ac-ft San Juan-Chama water in Heron
  - 21,000 ac-ft emergency drought water in El Vado
  - 12,000 ac-ft San Juan-Chama water in Abiquiu