

Water in the Poudre: Where does it come from, who has rights to use it, and who's watching?



Mark Simpson
Poudre River Commissioner

Who's Watching?

Poudre River Commissioner

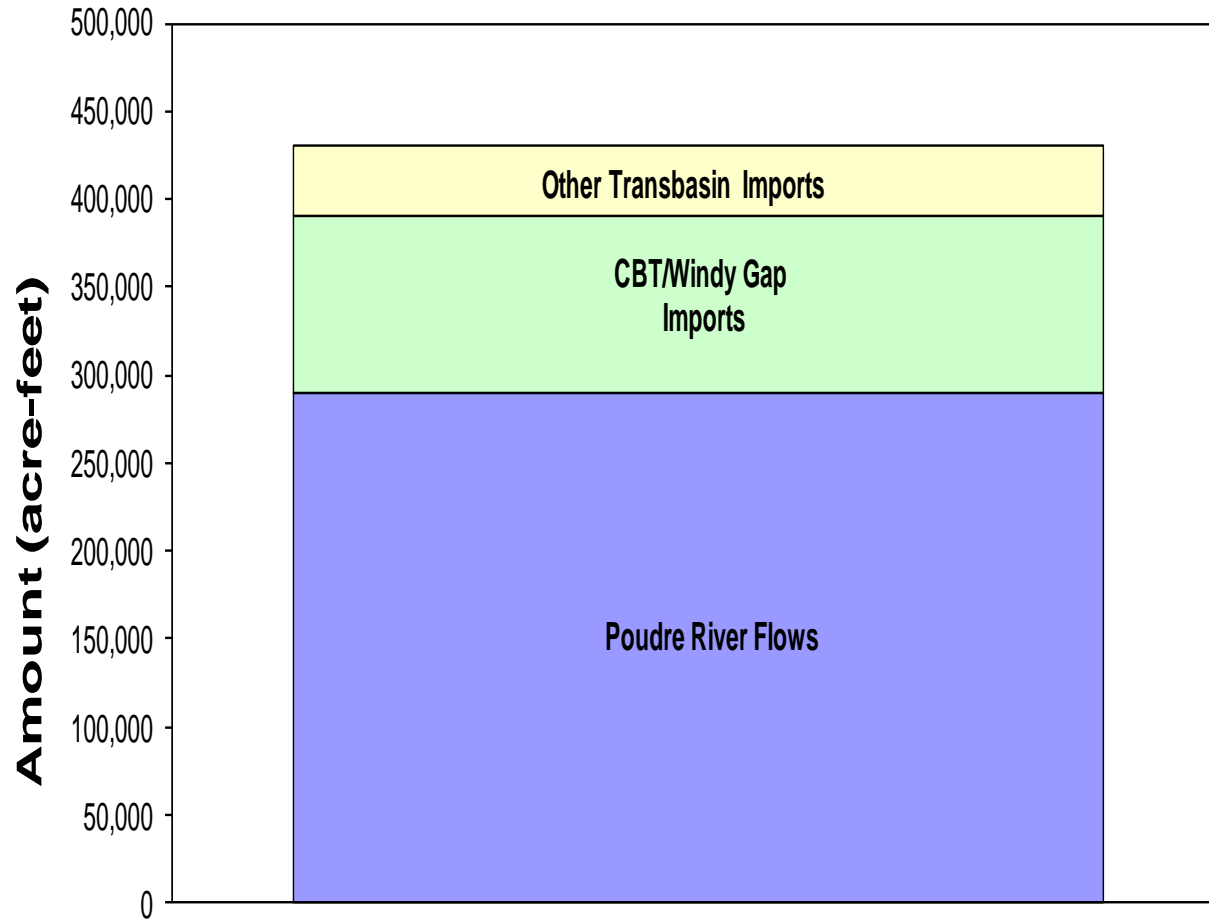
- The Colorado Department of Natural Resources (DNR) Division of Water Resources
 - State Engineer
 - 7 Division Engineers for each major basin of the state
 - River Commissioner for each major river of the state—responsible for administering water rights on the river

Where Does the Water in the Poudre Come From?

- Three main sources
 - Native River Water
 - C-BT System Water
 - Other Transbasin Supplies



Average Annual Poudre Basin Supplies

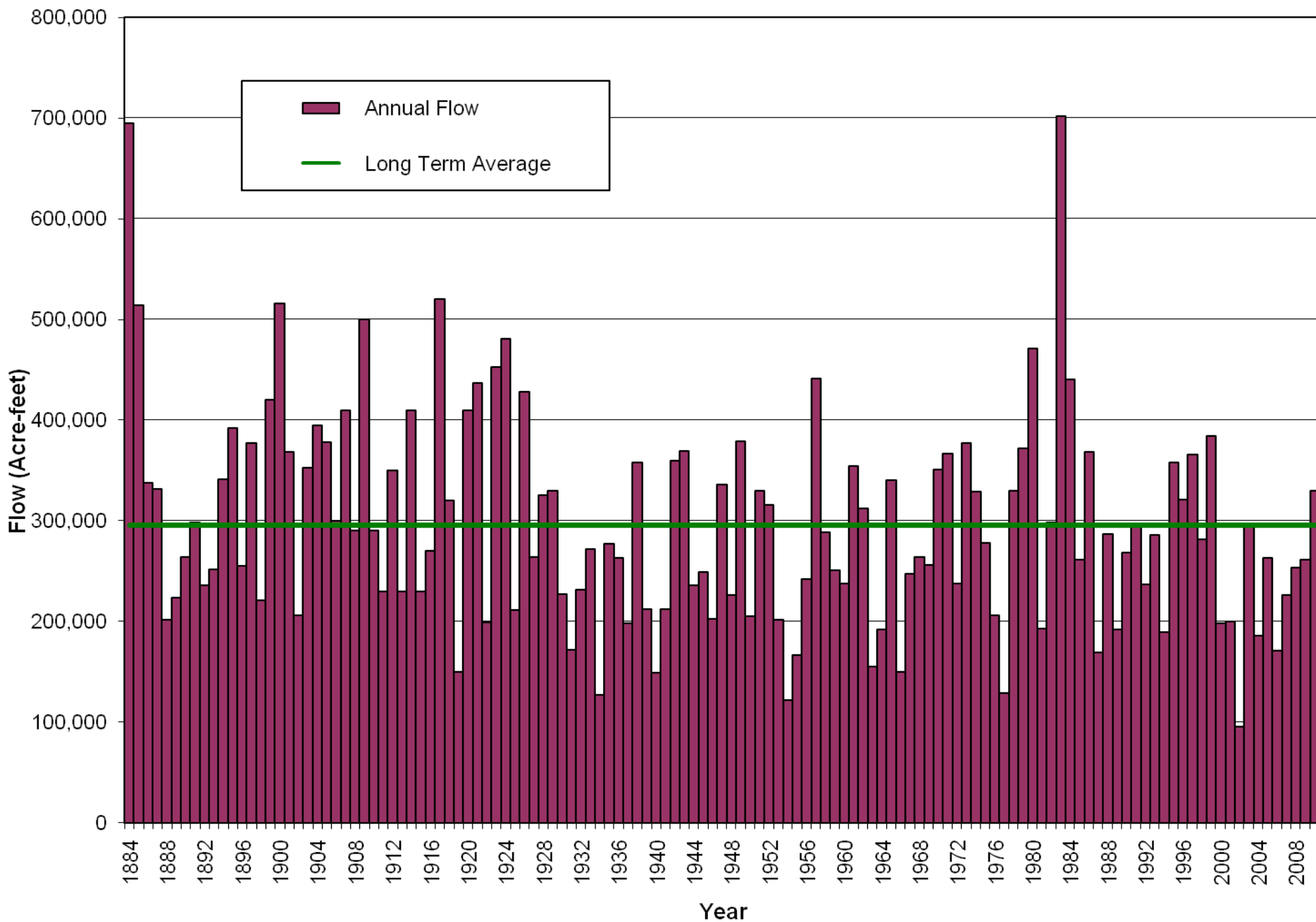


Native Poudre Water

- Roughly 65% of the Poudre's water is native flows from snowmelt
- Starts from Poudre Lake off Trail Ridge Road, RMNP
- Flows vary from year to year
- The annual volume is highly variable



Cache la Poudre River Annual Virgin Flows at the Mouth of the Canyon

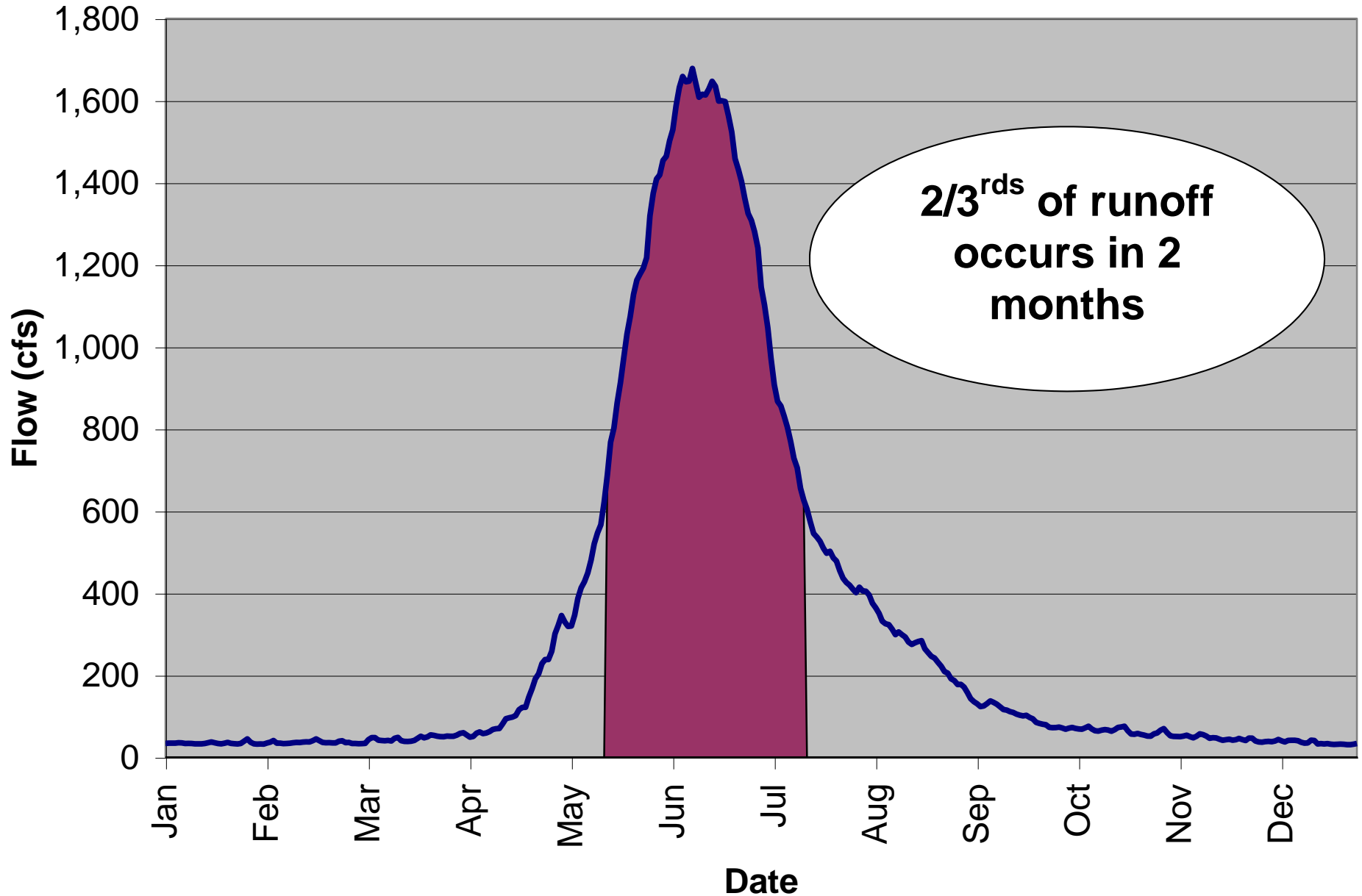


Native Poudre Water

- **Average daily flow varies depending on the time of year**
- **Two-thirds of the annual volume comes in a two month period**
- **Winter flows are very low, accounting for only 1 or 2 percent of the annual flow each month**

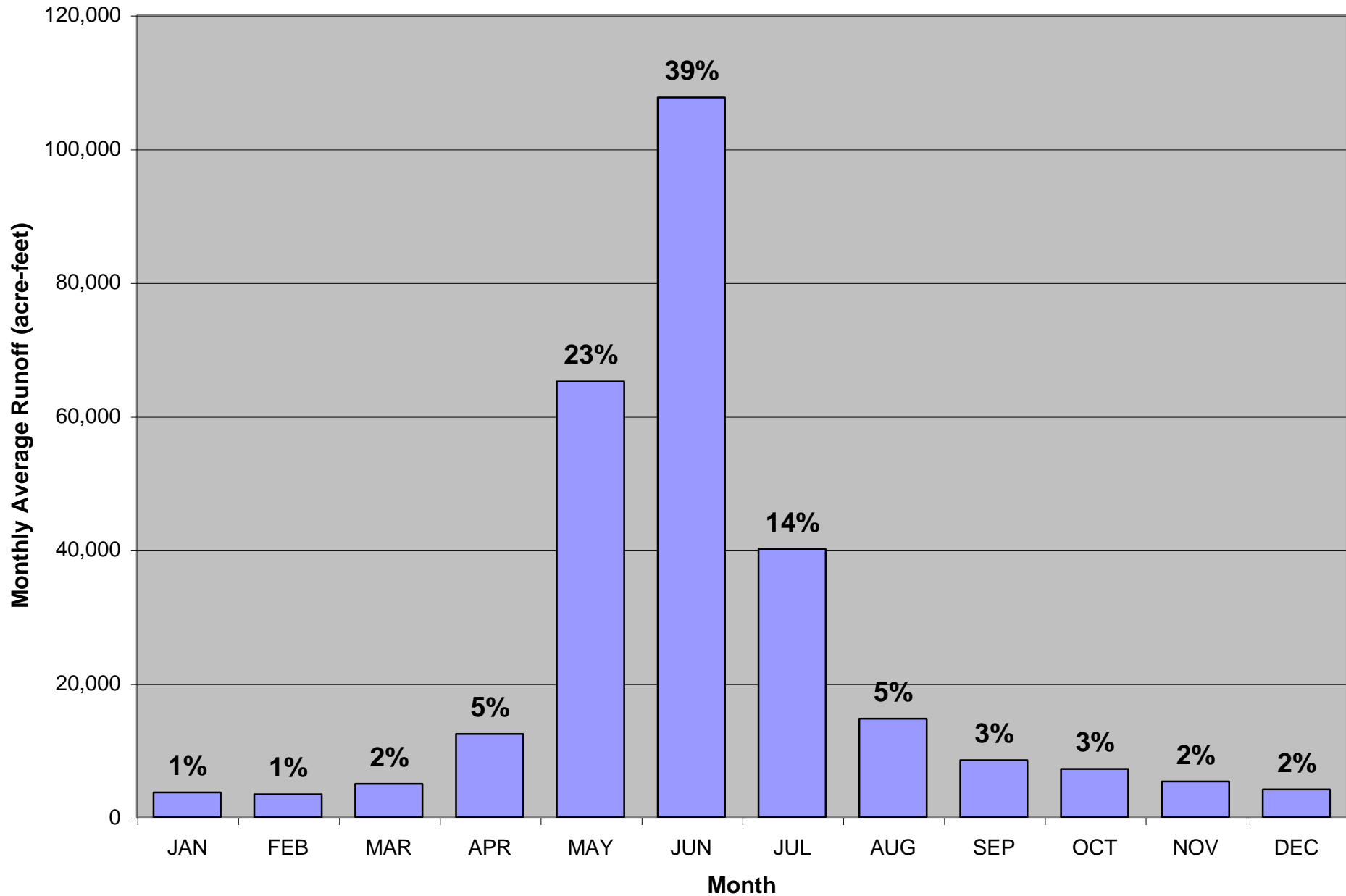


Average Poudre River Flows



Source: Cache la Poudre River at the Mouth of the Canyon Gage (USGS 06752000)

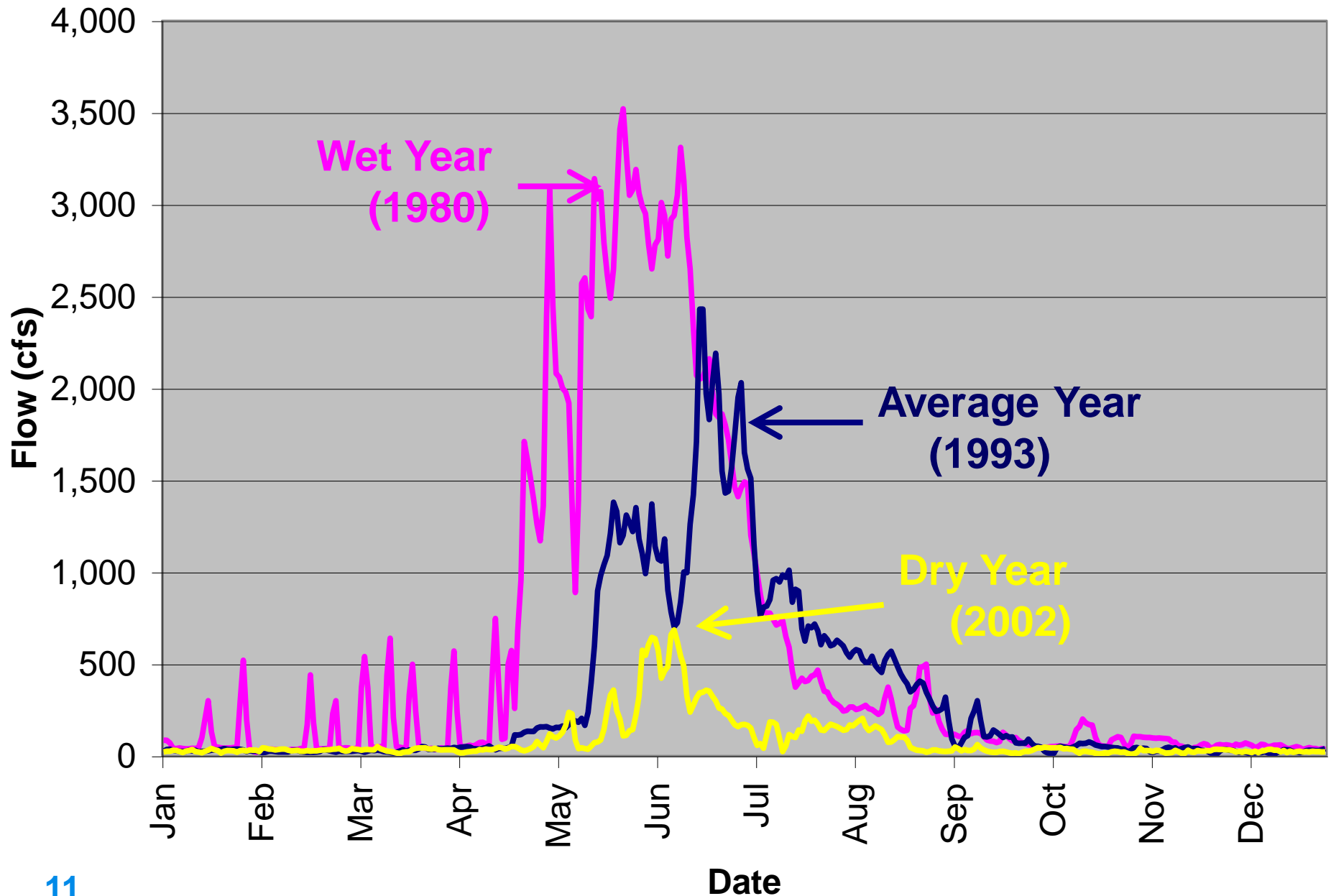
Cache la Poudre River Monthly Average Native Runoff at the Mouth of the Canyon (1950-2005)



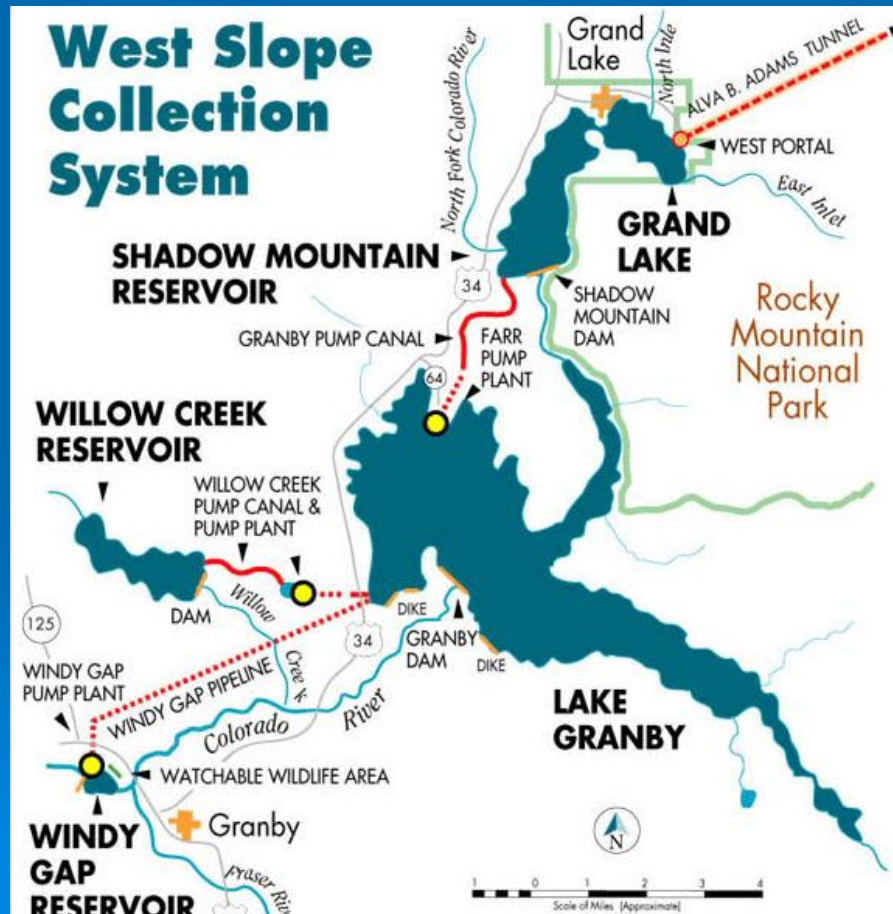
Native Poudre Water

- Lack of water in the late summer and winter months to meet demands
- Extreme variability in the supply from year to year
- Reservoirs were built to re-time the water so that it is available to meet irrigation and municipal demands


Poudre River Flows



Colorado Big Thompson Project



Colorado Big Thompson Project CBT

- Roughly 25% of the water in the Poudre is diverted from the Colorado River via the Colorado Big Thompson Project
 - Helps to fill in supply in years when annual supplies in native rivers are low
 - Helps to fill in supply during months when flows in native rivers are low (late-summer, and for municipalities, winter too)
- 
- The bottom of the slide features a decorative graphic of three sets of concentric circles, resembling ripples on water, rendered in a lighter blue shade against the dark blue background.

Colorado Big Thompson Project CBT

- Horsetooth Reservoir is part of the CBT Project, serving the Poudre
- About 60% of the CBT project water is released into the Poudre via Horsetooth
- Horsetooth releases made from April through October, most occurring in late summer



Other Transbasin Diversions



Roughly 10% of the water in the Poudre is diverted from these other transbasin diversions, constructed in the late 1800 's and early 1900's

Other Transbasin Diversions

- **Grand River Ditch (bringing water from the Colorado River)**



Other Transbasin Diversions

- **Laramie-Poudre Tunnel (bringing water from the Laramie River in Wyoming)**



Other Transbasin Diversions

Other Transbasin Diversions

- **Michigan Ditch**
- **Wilson Supply Ditch**
- **Deadman Creek Ditch**
- **Bob Creek Ditch**
- **Cameron Ditch**



Who Owns Rights to Use The Water?

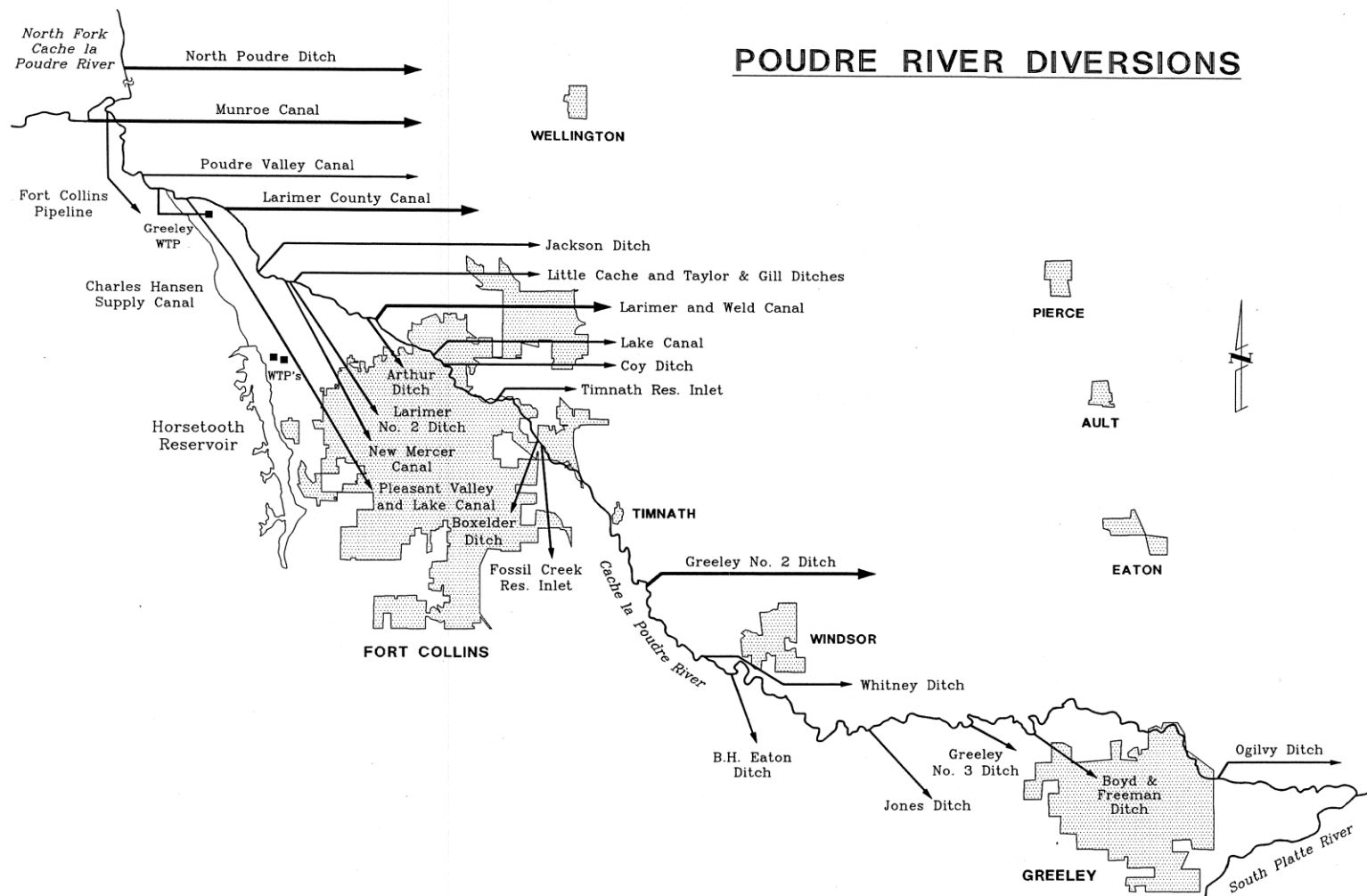
- Agricultural Users
- Municipal and Industrial (M&I) Users
- Recreational and Environmental Users



Who Owns Rights to Use the Water?

➤ Summary of Surface Water Use in Poudre Basin

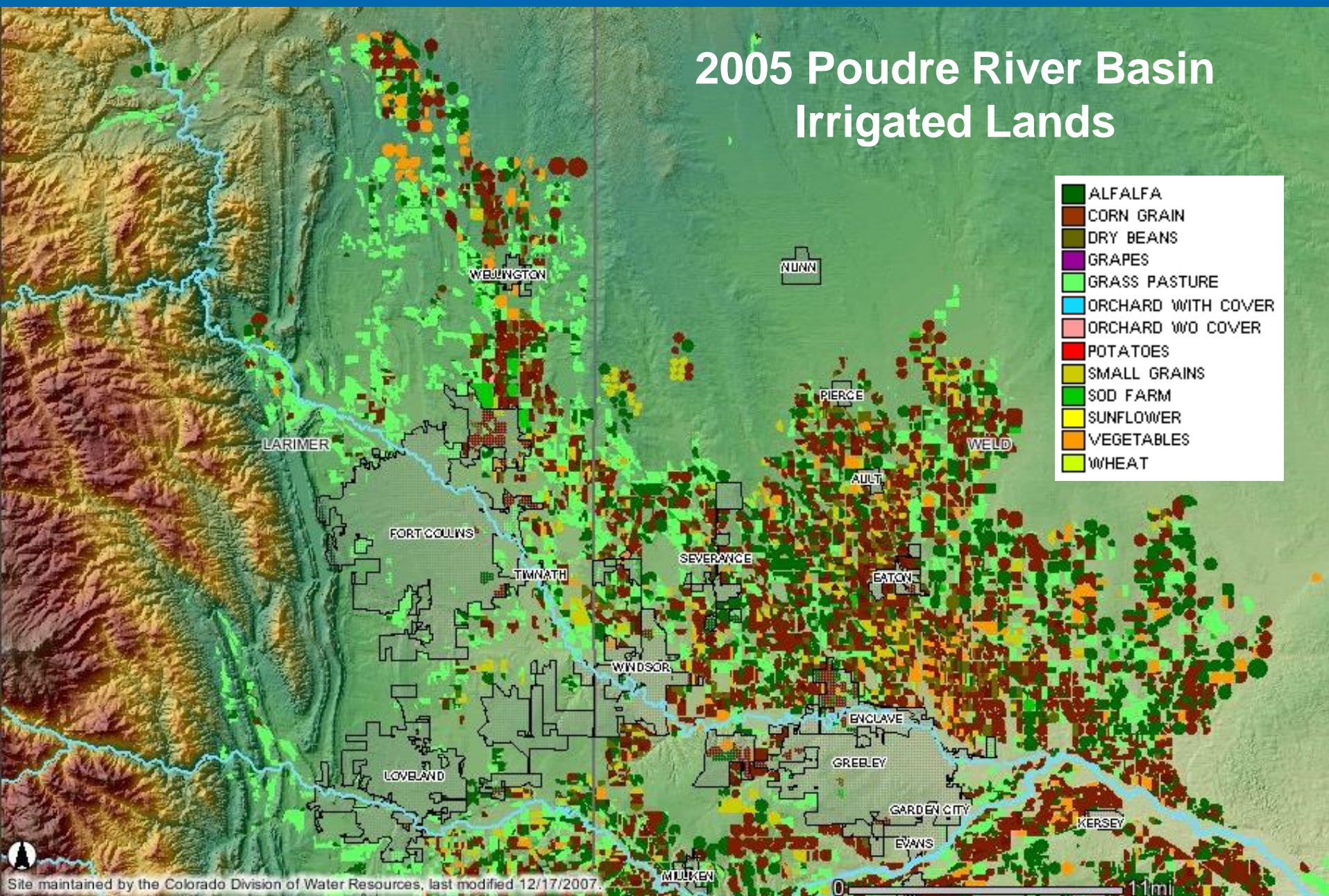
- Agricultural Users – (~85% of diversions but much returns to river in form of return flows)
- Municipal Users – (~15% of diversions but much of that returns to river in form of return flows)
- Recreation and Environmental Uses are not included in the percentages because they are considered “non-consumptive”



Agricultural Uses

- Four Large Irrigation Systems
 - North Poudre Irrigation Company
 - Water Supply and Storage Company
 - Larimer and Weld Irrigation Company
 - New Cache Irrigating Company (Greeley No 2)
- Many Smaller Irrigation Companies

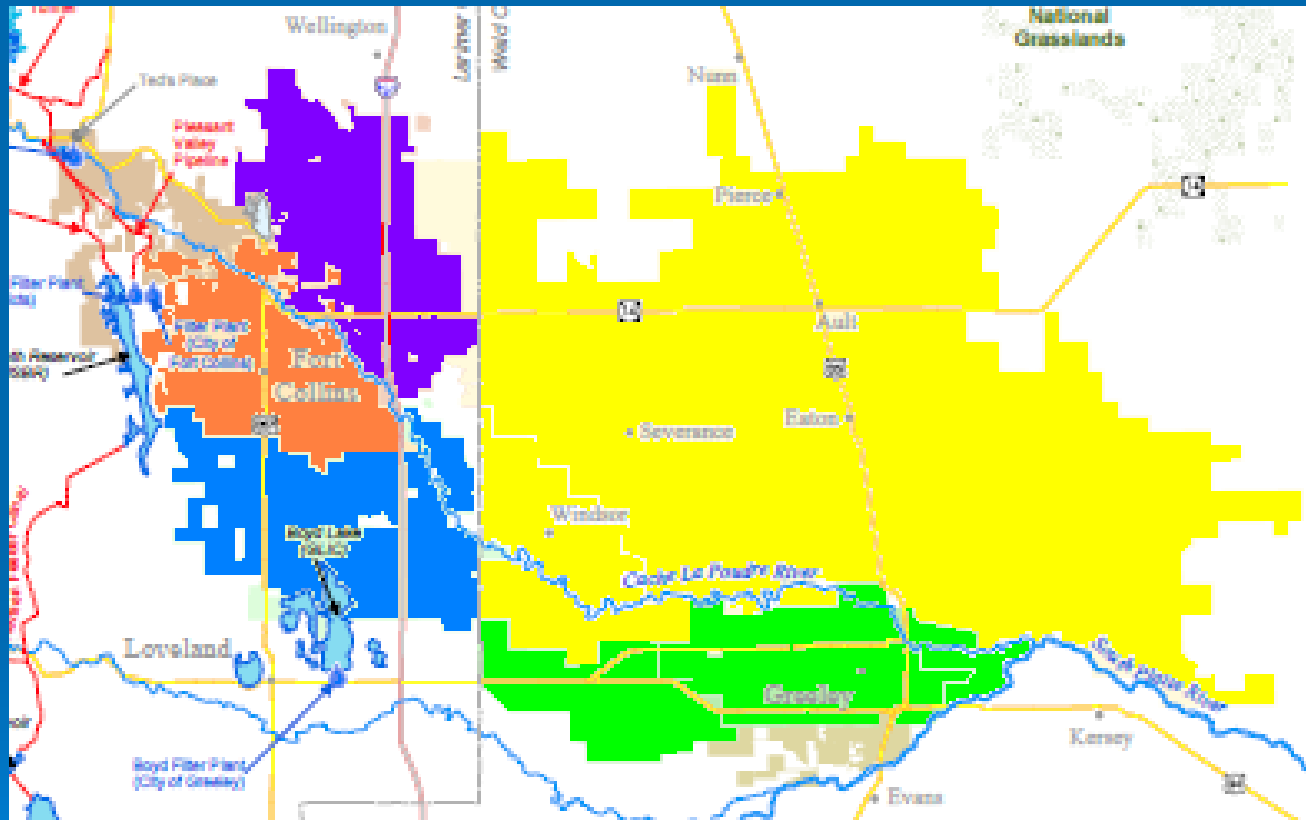
2005 Poudre River Basin Irrigated Lands



Municipal and Industrial Users

- City of Fort Collins
- City of Greeley (Bellvue Water Treatment Plant)
- Tri-Districts (Soldier Canyon Filter Plant)
 - Fort Collins-Loveland Water District
 - East Larimer County Water District
 - North Weld County Water District

Municipalities and Water Districts



Recreational and Environmental Uses

- CWCBC In-stream Flows (mostly in the mountains)
- Recreational In-Channel Diversions (RICD) City of Fort Collins has two RICDs



Recreational and Environmental Users

Wild and Scenic River Designation

- Designated in 1980's
- Includes most of Poudre River above Poudre Park
- Has a very junior water right associated with it
- Helps protect existing flows



How are Rights Administered?

- The water rights that were applied for first (1860s) get the senior priorities
- The water rights in the Poudre are assigned numbers based on the application date
 - Number 1 is a senior right (6-1-1860)
 - Number 100 is a junior right (1881)

How are Rights Administered?

➤ For Storage decrees

- Usually junior to the direct flow decrees on the Poudre
- Typically the storage season is Nov 1-Apr 15
- Can also be diverted when the high flows occur



How are Rights Administered?

- As the flow rate in the river increases, more water rights “come into priority” (Can divert)
- As the flow in the river decreases, the last right to divert is the first right to shut off
- In some years junior water rights may not ever come into priority

Conclusions

- Poudre River flows vary considerably - annually, monthly, daily
- Agricultural irrigation continues to use a large majority of the Poudre supplies
- For many junior water right holders, the water is not available when the water is needed
- Rules for diverting and using the water is prescribed by Colorado water law
- The Poudre Water Commissioner is responsible to administer the water rights per court decrees