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SLIDES: Tightening Water Supplies: Key Colorado River Issues for Wyoming

Patrick T. Tyrrell

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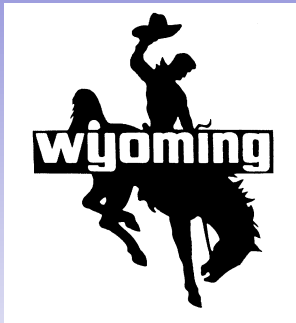
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Patrick T. Tyrrell, *Tightening Water Supplies: Key Colorado River Issues for Wyoming*, in *HARD TIMES ON THE COLORADO RIVER: DROUGHT, GROWTH AND THE FUTURE OF THE COMPACT* (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law, 2005).

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Tightening Water Supplies

Key Colorado River Issues for Wyoming



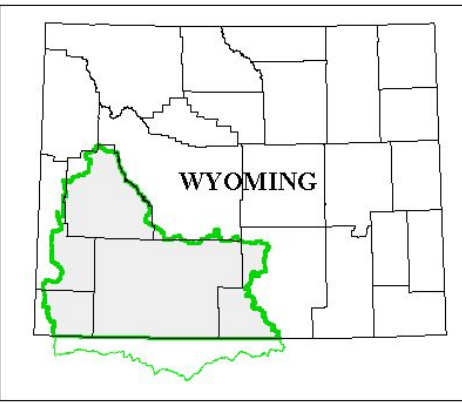
Patrick T. Tyrrell

Wyoming State Engineer

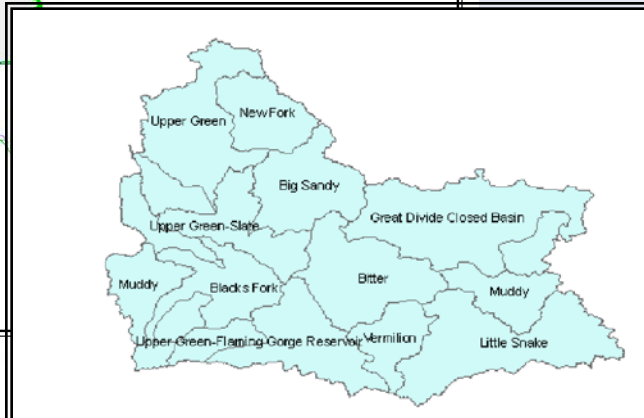
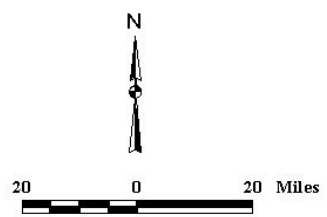
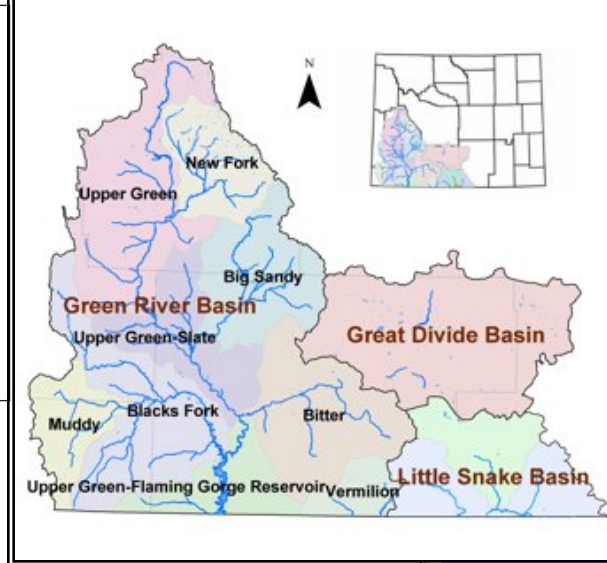
Presented on June 9, 2005

Natural Resources Law Center

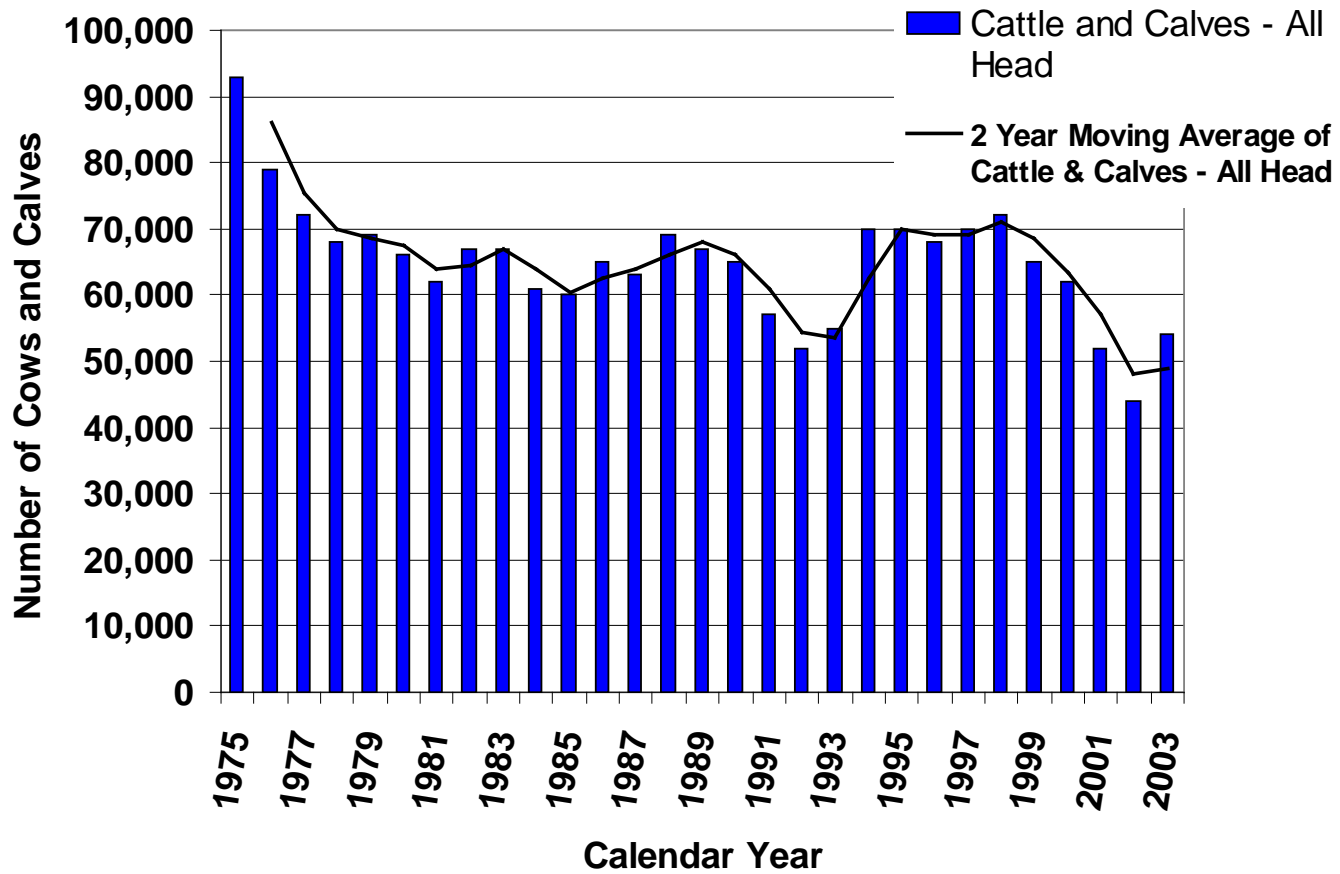
Boulder, Colorado



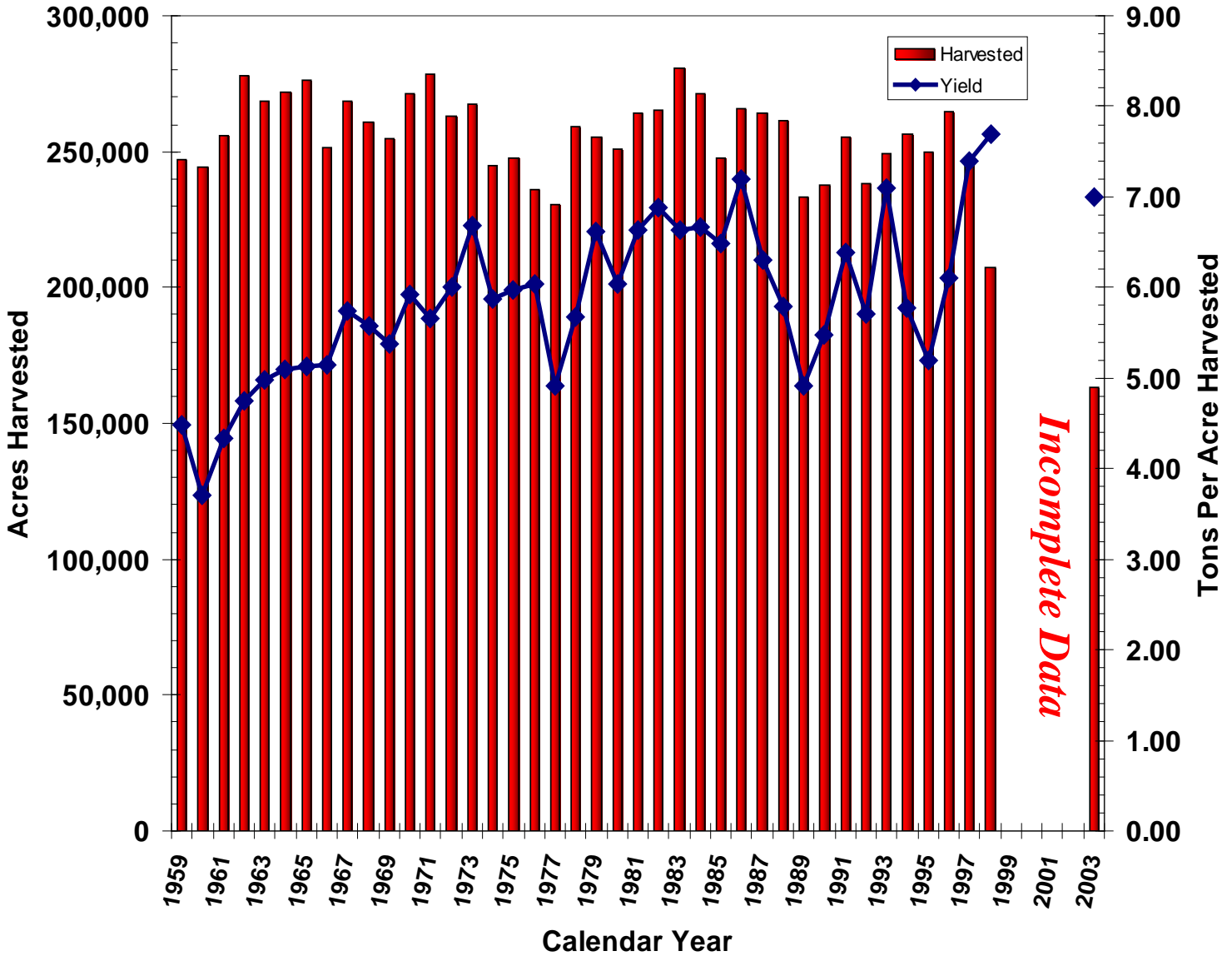
Green/Little Snake/Great Divide Basins



Sublette County Cows and Calves By Year



Lincoln + Sublette + Sweetwater + Uinta Counties Hay Ground Harvested By Year



Sublette County	Farm Services Agency							
Data from Damage Assessment Report (DAR) for Calendar Year 2003								
Major crops planted/growing in disaster year	Number of acres planted/growing in disaster year	Acres not planted due to the disaster	Disaster year yield for crops in item no. 1	Normal year yield for crops in item no. 1	3-year average price used for disaster and normal year	Disaster year dollar (\$ amount)	Normal year dollar (\$ amount)	Percent (%) Loss
Native Hay	100,000	N.A.	0.66 Tons/Acre	1.1 Tons/Acre	\$97/Ton	\$6,402,000	\$10,670,000	40%
Mixed Forage	6,000	N.A.	0.78 Tons/Acre	1.3 Tons/Acre	\$97/Ton	\$453,060	\$756,600	40%
Alfalfa	5,000	N.A.	0.96 Tons/Acre	1.6 Tons/Acre	\$100/Ton	\$480,000	\$800,000	40%
Range	1,461,785	N.A.	0.03 AUM/Acre	0.12 AUM/Acre	\$16/AUM	\$701,657	\$2,806,627	75%
Forest	531,991	N.A.	0.25 AUM/Acre	0.5 AUM/Acre	\$16/AUM	\$2,127,964	\$4,255,928	50%
Other relevant factors:	Many producers have not been able to obtain water in their ditches as early as June 15th.							

Sweetwater County	Farm Services Agency							
Data from Damage Assessment Report (DAR) for Calendar Year 2003								
Major crops planted or growing in disaster year	Number of acres planted or growing in disaster year	Acres not planted due to the disaster	Disaster year yield for crops in item no. 1	Normal year yield for crops in item no. 1	3-year average price used for disaster and normal year	Disaster year dollar (\$) amount	Normal year dollar (\$) amount	Percent (%) Loss
Rangeland	6,400,000	N.A.	0.042 AUM/Acre	0.12 AUM/Acre	\$16/AUM	\$4,300,800	\$12,288,000	65%
Native	7,048	N.A.	0.78 Tons/Acre	1.3 Tons/Acre	\$97/Ton	\$533,252	\$888,753	40%
Mixed Forage	3,524	N.A.	1.02 Tons/Acre	1.7 Tons/Acre	\$97/Ton	\$348,665	\$581,108	40%
Alfalfa	7,744	N.A.	1.8 Tons/Acre	3.0 Tons/Acre	\$100/Ton	\$1,393,920	\$2,323,200	40%

Wyoming-Regulated tributaries of Lower Green River Below Major Reservoirs

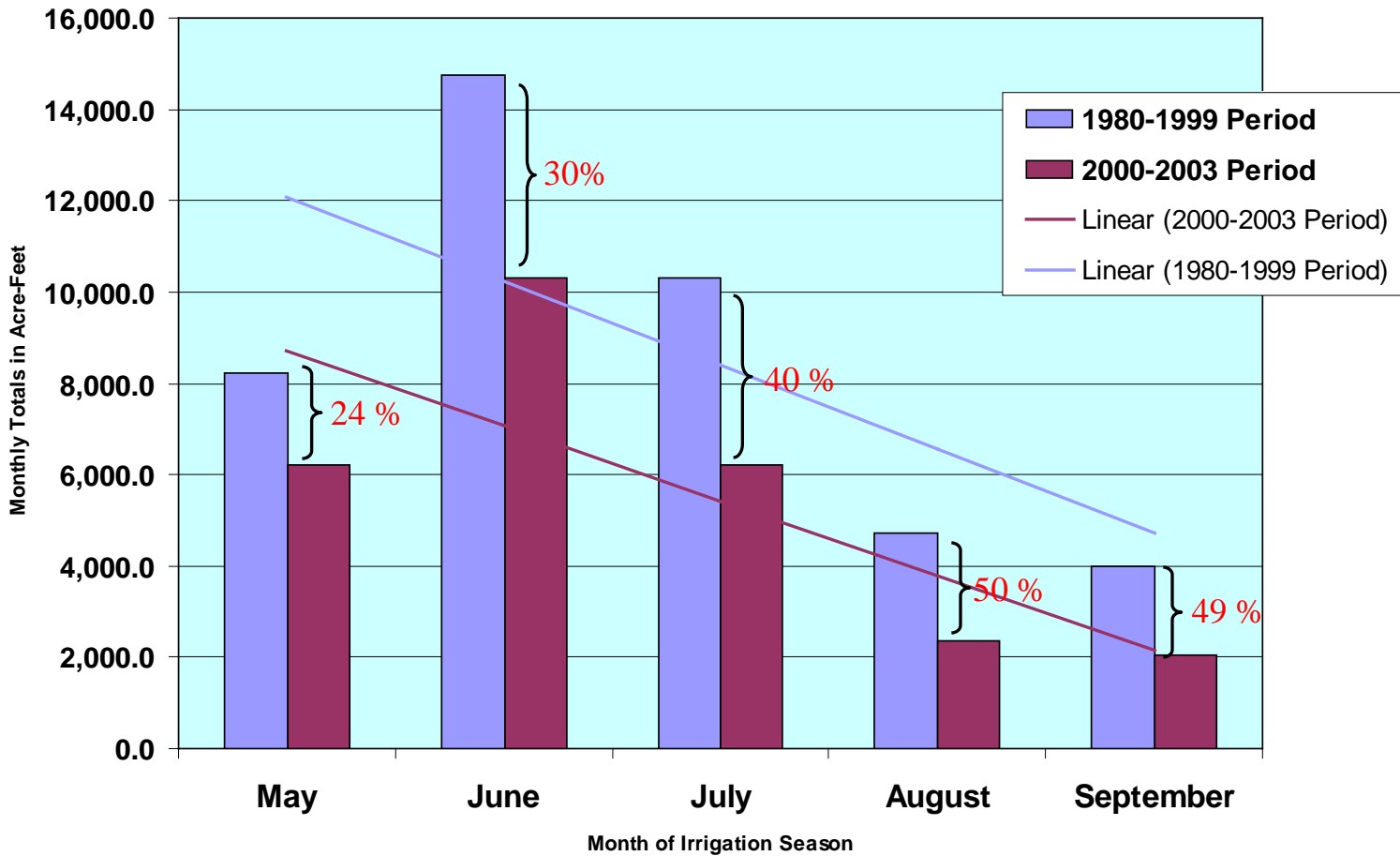
Seasonal Low Streamflows for Last 10 years and Reservoir Carryover End of Water Year

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ham's Fork	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Depth of Regulation (priority):	11-12-1884	11-12-1884	11-12-1884	11-12-1884	11-12-1884	SP 1882	stock only	stock only	stock only	1882
Day when priority was hit:	16-Sep	4-Sep	30-Aug	6-Sep	28-Aug	22-Aug	30-Aug	26-Aug	29-Aug	11-Sep
Stream Flow:	16	21	28	27	28	7.2	0.92	4.8	8.8	9.3
Viva Naughton %Carryover (9-30):	88.20%	78.50%	89.30%	85.90%	88.30%	73.20%	71.20%	71.20%	76.10%	79.40%
Smith's Fork	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Depth of Regulation (priority):	1872	1876	1886	1886	1876	1872	1864	1864	1886	1872
Day when priority was hit:	3-Sep	6-Sep	21-Aug	19-Sep	17-Aug	17-Aug	11-Sep	8-Aug	11-Sep	10-Sep
Stream Flow:	9.47	12.1	27.1	27.2	12.6	7	4.5	1.01	19.7	9.1
Stateline %Carryover (9-30):	31.0%	45.8%	64.2%	47.5%	19.9%	30.9%	30.9%	28.6%	33.3%	6.3%
Black's Fork	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Depth of Regulation (priority):	4-20-1891	4-20-1891	4-20-1891	4-20-1891	4-20-1891	1-01-1891	4-20-1891	4-20-1891	4-20-1891	4-20-1891
Day when priority was hit:	27-Sep	29-Aug	7-Sep	15-Sep	17-Sep	13-Aug	12-Sep	21-Aug	4-Aug	31-Aug
Stream Flow:	56	46.8	83.5	74	131	18	67.8	50	60	45
Meeks Cabin %Carryover (9-30):	51.0%	17.2%	33.6%	84.8%	49.0%	11.0%	4.1%	20.6%	31.7%	20.9%

Regulation priority determined by what water rights would be met with seasonal low inflow.

WY State Engineer's Office, Lyman; John Yarbrough, Lead Hydrographer

Comparison of 1980-1998 and 1999-2003 Periods - Blacks Fork Canal



Blacks Fork Canal

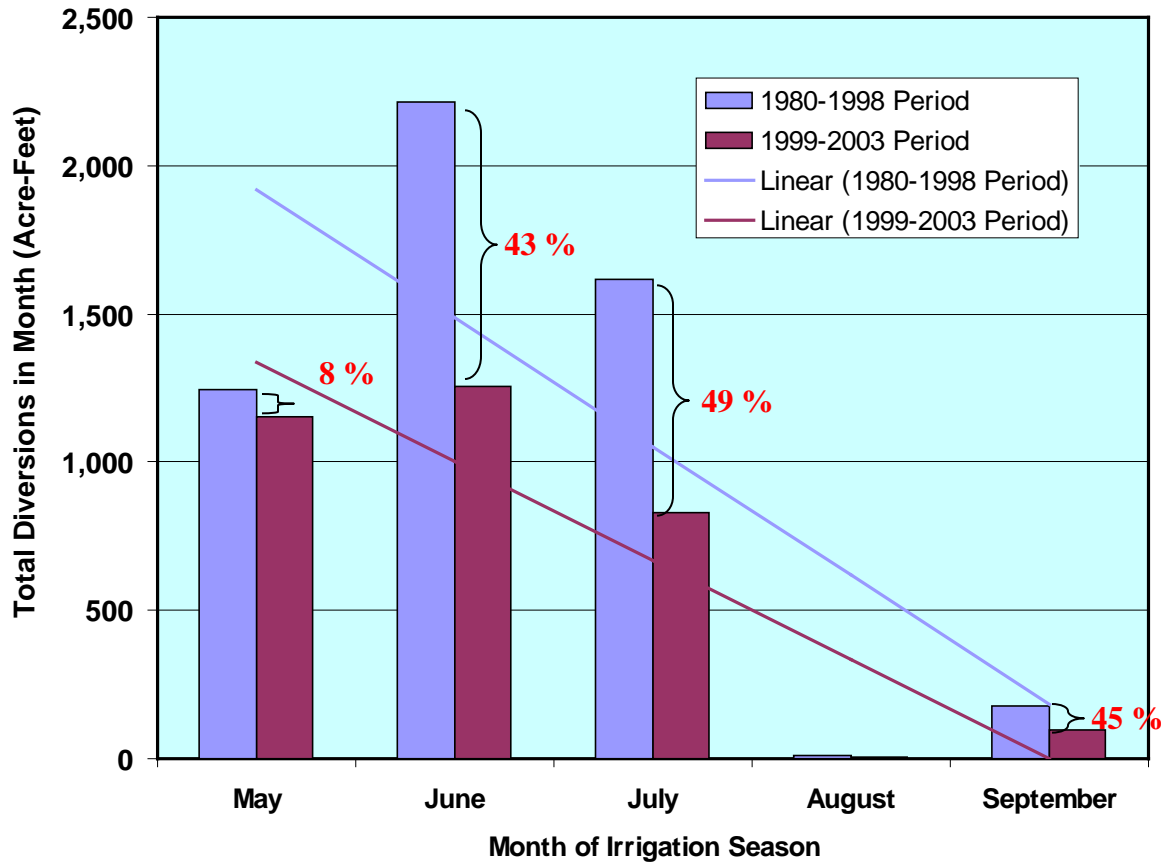
Source: Black's Fork River, tributary to the Green River

Headgate Section, Township, Range: S14, T14N, R116W

Conveyance Description: Open channel canal approximately 32 miles in length.



**Comparison of 1980-1988 and 1989-2003 Period Diversions -
Homestake Canal - Diverting From South Piney Creek**



Homestake Ditch

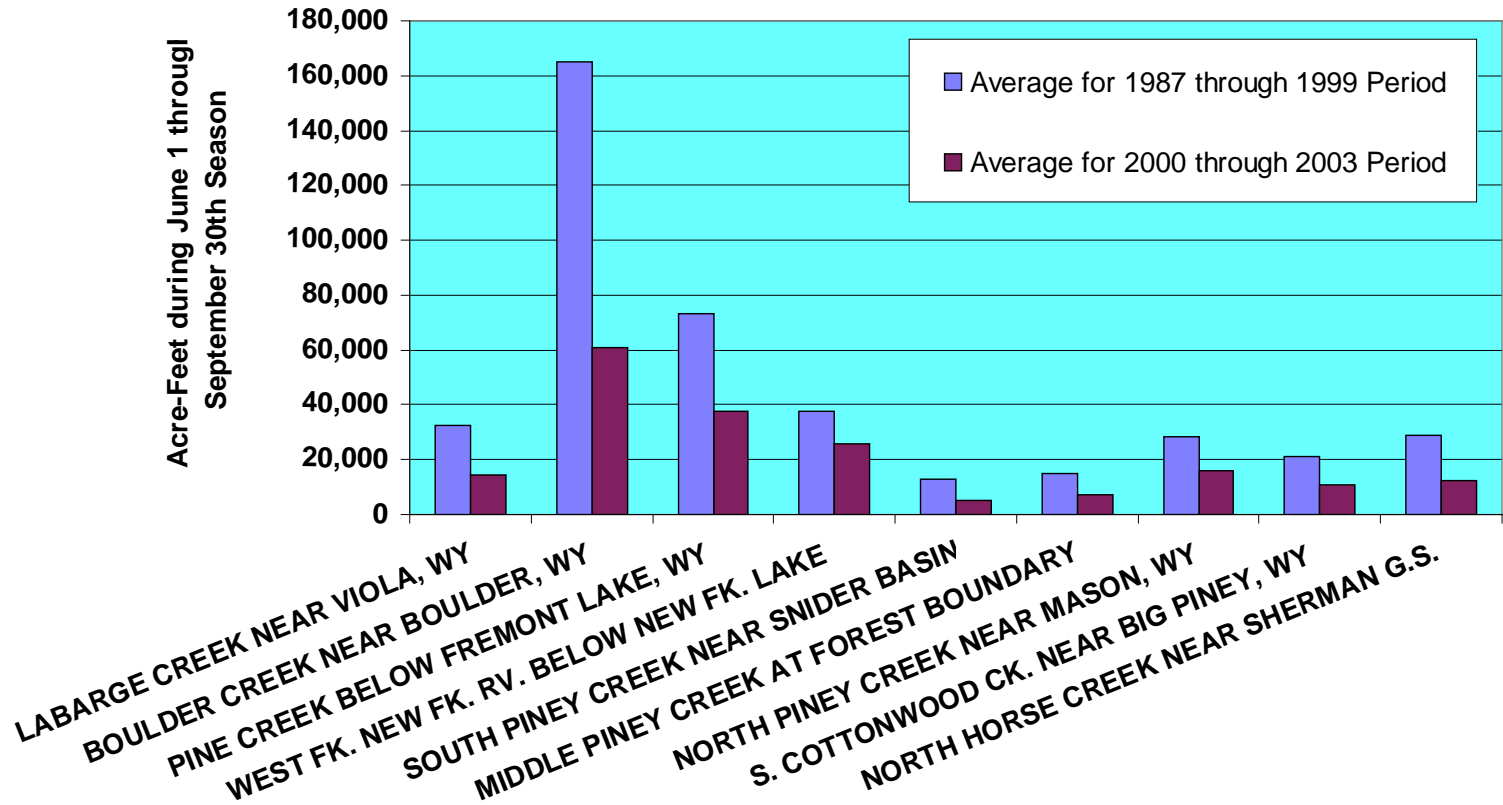
Source: South Piney Creek, tributary to the Green River

Headgate Section, Township, Range: S9, T29N, R112W

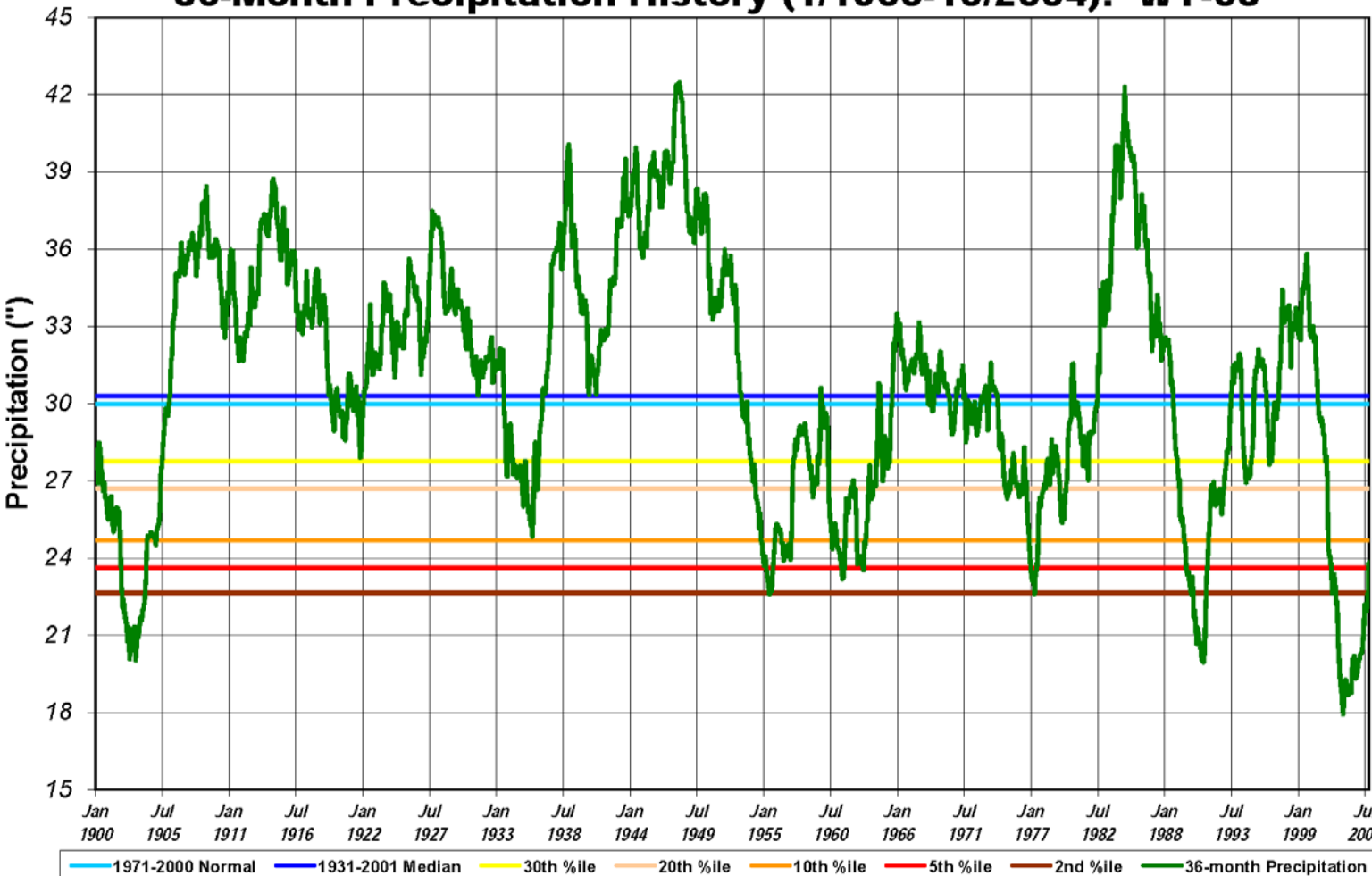
Conveyance Description: Open Channel Canal approximately 3 miles in length.



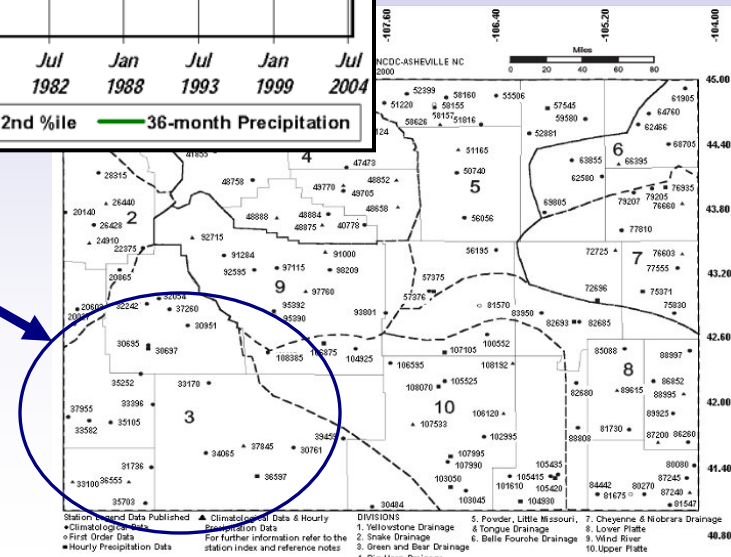
Comparison of Wyoming Green River Basin Streamflow Volumes Pre-Drought and During Drought



36-Month Precipitation History (1/1900-10/2004): WY-03



Wyoming Climate Division 3
Green and Bear River Basins



Key Issues for Wyoming:

- Aggressive pursuit of projects to meet existing needs of all kinds (rehabilitation, conservation, storage)
- Protection of our ability to develop our full Compact apportionment
- Protection against compact curtailment conditions but prepare for what that means if it occurs
- Protection against loss of power revenues:
 - Power cost ramifications
 - Salinity Control program ramifications
 - Endangered Fish Recovery Program ramifications
 - O&M funding for system components

Potential Solution Components

- The entire basin (including Mexico) needs to resolve to share shortages. Right now, only the upper basin sees true shortages.
- At current rates of growth, the LB must develop other sustainable sources.
- Sustainable development practices must be instituted for future demands.
- Intrastate transfers are preferable to interstate transfers.
- Market-based transfers must be in line with the law of the river.
- Additional storage must be pursued

Thanks!

