

**RIO GRANDE BASIN  
IMPLEMENTATION PLAN**

**WATER RESOURCES  
REVIEW COMMITTEE**

**AUGUST 28, 2014**

**DiNatale  
WATER CONSULTANTS**

**STATE WATER PLAN PROCESS  
RIO GRANDE BASIN'S ORGANIZATION**

- Based on CWCB Basin Implementation Plan Guidelines
- Grassroots Process!
- Rio Grande Basin Roundtable
- BIP Steering Committee
- BIP Subcommittees
  - Public Outreach
  - Water Administration
  - Agricultural
  - Municipal & Industrial
  - Environmental & Recreational

**OUTREACH AND EDUCATION  
(SECTION 7)**

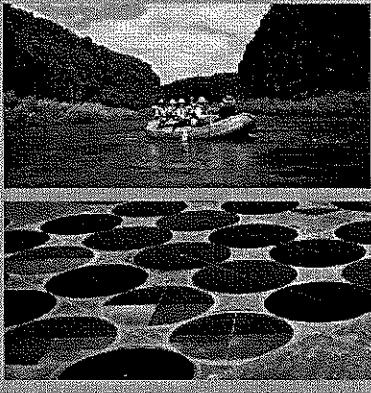
Outreach Type	Number of Events / Attendees	Location
General Community Outreach Sessions	7 Events 87 Attendees Total	Basin Wide
County Commissioners Outreach Sessions	7 Events 57 Attendees Total	Basin Wide
Group Outreach Sessions	9 Events 314 Attendees Total	Basin Wide
Rio Grande Roundtable Meetings	7 Events >300 Attendees Total	Alamosa
Basin Plan Subcommittee Meetings	21 Total Events	Alamosa
Newspaper Articles	11 written 13 planned	Distributed Basin Wide
Radio Programs	5 complete 7 planned	Aired Basin Wide
Water 101 Booklet		Distributed Basin Wide
Website		Accessible statewide
Action Plan for Education and Outreach Beyond 2014	Planned and Developed	Basin Wide
Rio Grande Basin Long Range Outreach Strategies	Planned and Developed	Basin Wide

**FUTURE PUBLIC OUTREACH**

- Disseminate Printed Copies of DRAFT BIP
- Conduct up to 4 Regional, Public Meetings for Discussion/Input
- Media Outreach (web page, news papers, KSLV Radio)
- Disseminate Executive Summary to Public
- Additional Public Outreach on Final RG Basin Implementation Plan

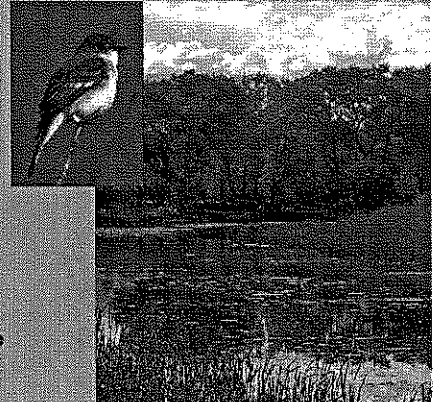
## SECTION 3 RIO GRANDE BASIN GOALS AND MEASURABLE OUTCOMES

- Goals and Measurable Outcomes (G/MO) Identified - 3 month process
- 12 Subcommittee & full RGBRT meetings
- 14 Goals
  - 8 Goals meet needs of all sectors (Ag, M&I, Water Admin & Env/Rec)
  - Only two goals are single purpose: Env/Rec



## RIO GRANDE BASIN GOALS AND MEASURABLE OUTCOMES - SUMMARY

- Rio Grande Compact Compliance
- Sustainability
  - Agriculture
  - Aquifers
  - Watershed & Soil Health
  - Infrastructure
- Protect Water Rights
- Protect & Restore Riparian, Wetlands & Aquatic Habitats
- Promote Multi-purpose Projects

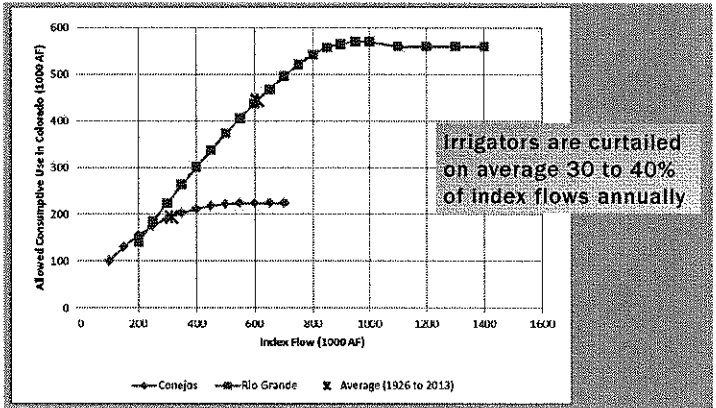


## AGRICULTURE

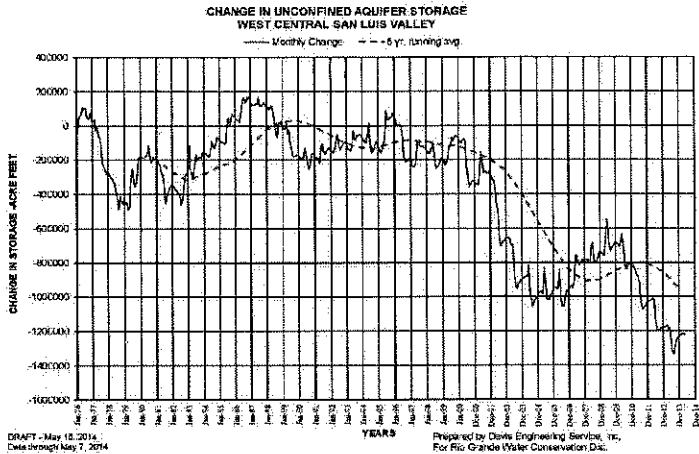
- Agriculture is the Primary Economic Driver Basin & Uses the Majority of Basin's Water
- Highest Value per Acre Production Agriculture In Colorado
- Agricultural Direct Revenues Exceed \$325 Million per Year



## COMPACT CURTAILMENT OF DIVERSIONS A DAILY FACT OF LIFE

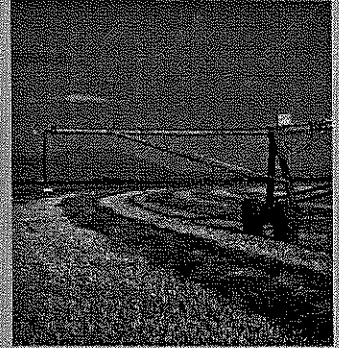


## CHANGE IN AQUIFER STORAGE



## AGRICULTURAL CONSTRAINTS

- Agricultural Community is
  - Restoring Aquifer Levels
  - Replacing Depletions
- Pending Well Rules and Regulations will Impact Basin's Economy

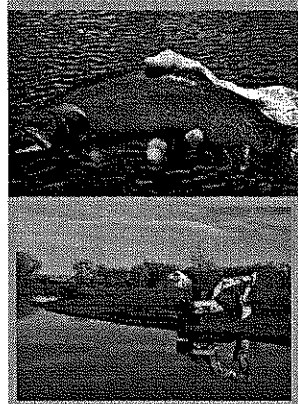


## WATER ADMINISTRATION



- Basin Strictly Administers Rio Grande Compact
- Water Rights, even those Senior to the Compact, are Subject to Curtailment
- Groundwater Management Subdistricts
- Well Rules and Regulations

## ENVIRONMENTAL AND RECREATIONAL



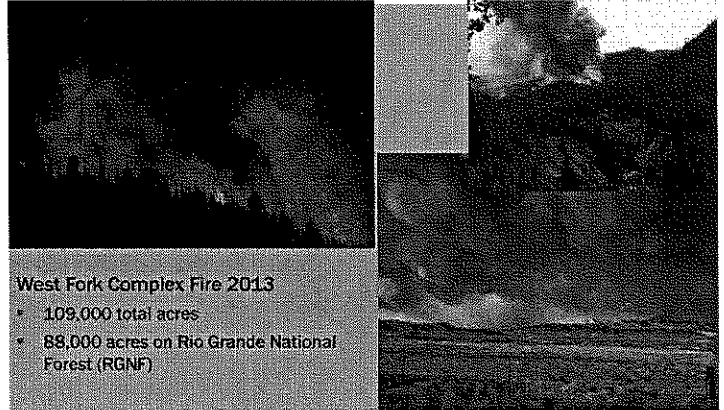
- Watershed Supports Wildlife, Recreation, Agriculture and Compact Deliveries
- Diverse Wetland and Riparian Systems
- Critical Habitat for Many Species
- Waterways = High Recreation and Tourism Values

## MUNICIPAL AND INDUSTRIAL



- Increased Municipal and Industrial Demand will be Small
- Aging Infrastructure
- Limited Ability for Rehabilitation of Infrastructure
- Municipalities will have to Augment Depletions

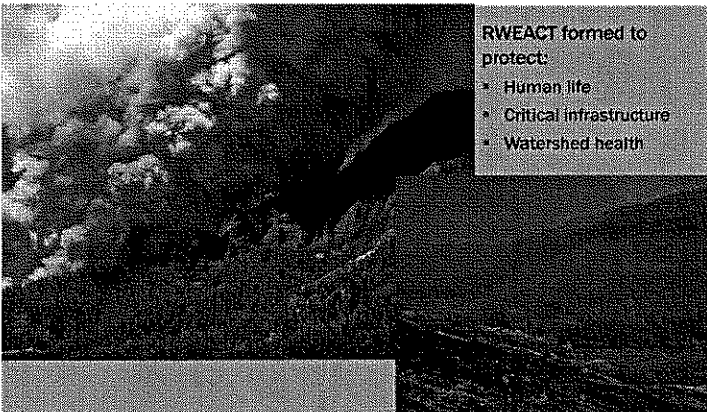
## WATERSHED HEALTH: WEST FORK COMPLEX FIRE



West Fork Complex Fire 2013

- 109,000 total acres
- 88,000 acres on Rio Grande National Forest (RGNF)

## RWEACT FORMATION



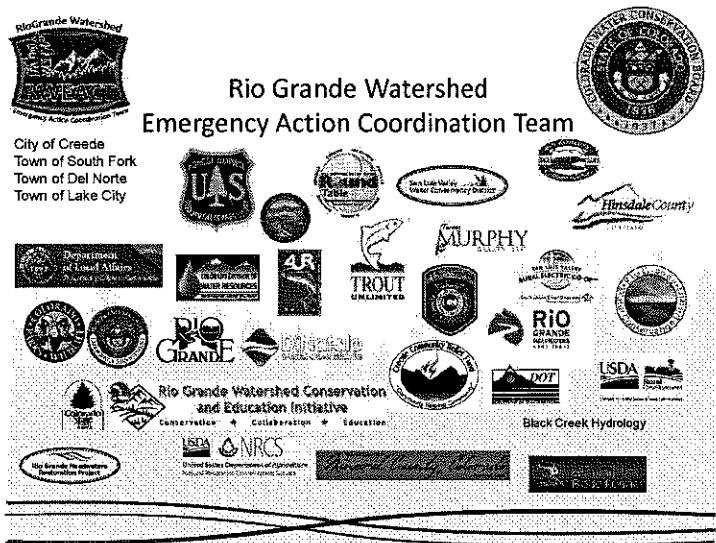
RWEACT formed to protect:

- Human life
- Critical infrastructure
- Watershed health

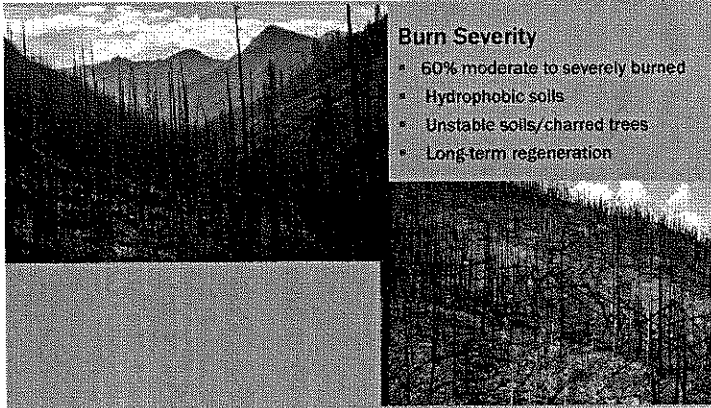


### Rio Grande Watershed Emergency Action Coordination Team

City of Creede  
Town of South Fork  
Town of Del Norte  
Town of Lake City



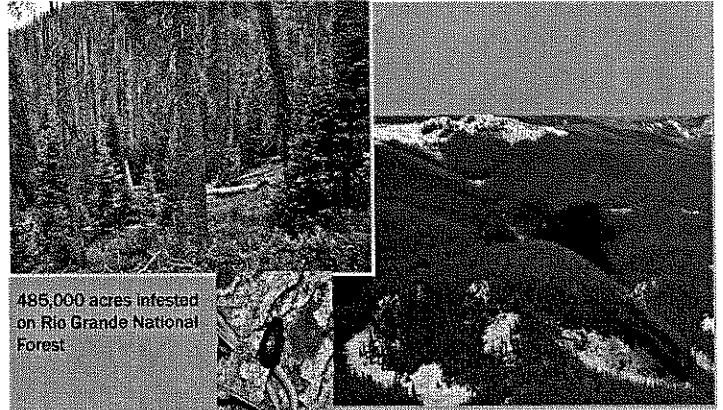
## BURN SCAR



### Burn Severity

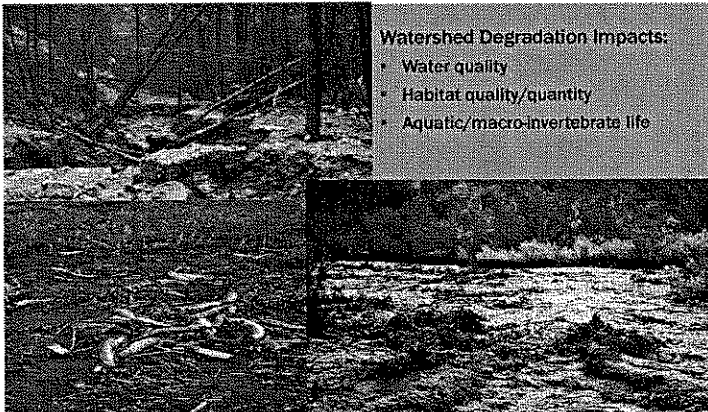
- 60% moderate to severely burned
- Hydrophobic soils
- Unstable soils/charred trees
- Long-term regeneration

## BEETLE KILL



485,000 acres infested on Rio Grande National Forest

## DEBRIS FLOW EVENTS



### Watershed Degradation Impacts:

- Water quality
- Habitat quality/quantity
- Aquatic/macro-invertebrate life

## RWEACT — PATH FORWARD

- Continued: Public Safety/Critical Infrastructure
- Emphasize: Forest Health/Watershed Resiliency
  - RG Basin partnership, Water Plan Projects/Processes participation
  - Water Quality Study with Colorado School of Mines
  - Great Divide Project - Divide Ranger District
  - Biomass Industries Feasibility/Implementation Analysis
  - RGNF Forest partnership, Forest Plan Revision participation
  - Establish RWEACT's future to serve as a "forest collaborative" in partnership with RGNF in Stewardship Agreements for Forest Management Actions



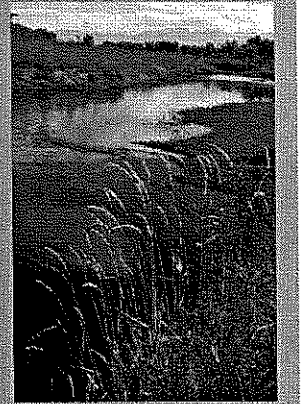
## CHALLENGES TO MEETING WATER NEEDS (SECTION 5)

- Climate Change Studies Indicate:
  - Flows reduced by 33%
  - Earlier Runoff
- Hydrology Impacted By:
  - Dust on Snow
  - Beetle Kill
  - Forest Fires

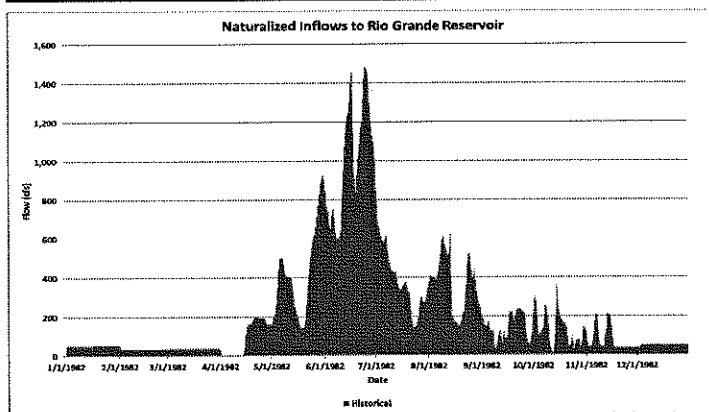


## MODEL FOR BASIN FLOWS

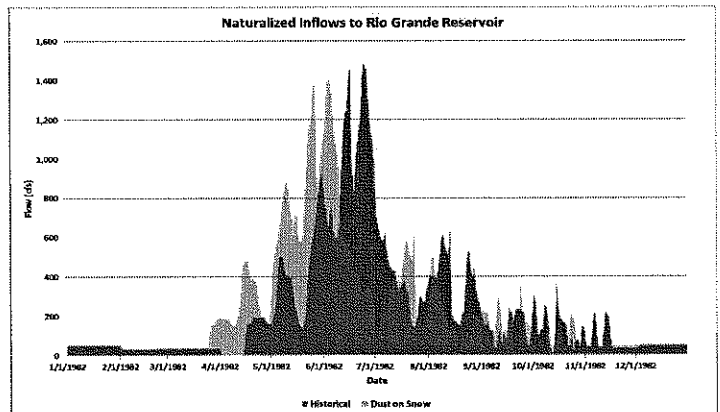
- Considers Changes in Hydrology
  - Dust on snow, beetle kill, wildfire, climate change
  - Identify potential critical needs
  - Impacts of reduced seasonal flows on water rights and aquatic and riparian habitats
- Assist in Decision Making
  - Help Identify and Prioritize Projects
  - Water Management Opportunities



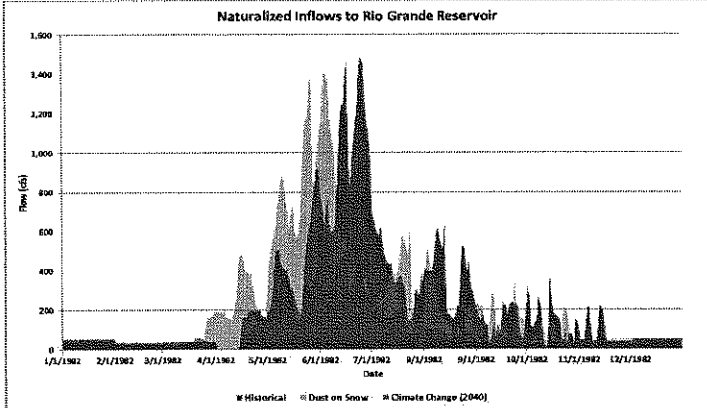
## HISTORICAL YEAR OF HYDROLOGIC INFLOWS



## TYPICAL YEAR OF NEW HYDROLOGIC INFLOWS

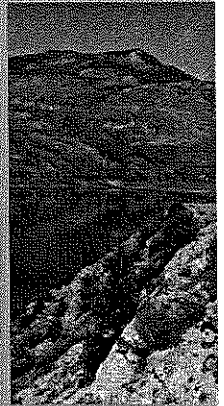


## TYPICAL YEAR OF NEW HYDROLOGIC INFLOWS



## GIVEN THE LIKELY FUTURE, WHAT IS OUR ACTION PLAN?

- Improve Water Management:
  - Within Rio Grande Compact and Colorado Water Law
  - Improve Stream Forecasting
  - Retire Compact and Other Deliveries for Multiple Benefits
  - Bring Surface and Ground Water Into Balance
  - Restore Aquifers



## GIVEN THE LIKELY FUTURE, WHAT IS OUR ACTION PLAN?

- Improve Watersheds' and Soil Health
- Agricultural Improvements
- Protect and Restore Riparian Areas and Wetlands
- Maintain & Improve Infrastructure
  - Reservoirs and Diversion Structures
  - Municipal



## PROJECT SHEETS

- Project Name
- Location and Map
- Sponsor(s)
- Uses /Needs Met
- BIP Goals /Needs Met
- Description and Picture
- Estimate Project Costs (2014)
- Potential Funding Collaboration /Sources
- Project Timeline & Budget
- WSRA Funding
- Project Beneficiaries

**Project Fact Sheet** **Rio Grande Cooperative Project**

**Location:** The project area is located in the Rio Grande watershed, specifically in the area of the Rio Grande Reservoir.

**Project Description:** The project is a cooperative effort between the Rio Grande Compact and the Colorado Water Law to improve water management and infrastructure in the Rio Grande watershed.

**Project Objectives:** The project aims to improve water management, restore riparian areas, and improve infrastructure in the Rio Grande watershed.

**Project Budget:**

Category	Amount	Total
Construction	\$1,000,000	\$1,000,000
Operation & Maintenance	\$500,000	\$500,000
Administrative	\$100,000	\$100,000
<b>Total</b>	<b>\$1,500,000</b>	<b>\$1,500,000</b>

**Project Beneficiaries:** The project will benefit the Rio Grande Compact and the Colorado Water Law, as well as the communities and businesses in the Rio Grande watershed.

**EXAMPLE OF HOW PROJECTS MEET BASIN GOALS**

Project or Method TYPES	Needs Met				Basin Goals Met													
	Ag	MAI	Env/Rec	Water Admin	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Rio Grande Cooperative Project	X	X	X	X		✓	✓	✓										
Trujillo Meadows ATM Project	X	X	X			✓	✓	✓	✓									
Jim Creek Riparian Protection and Restoration Project	X		X		✓				✓						✓	✓		
Formation of Remaining Subdistricts	X	X	X	X		✓	✓	✓	✓	✓	✓			✓				
Acquisition of Replacement Supplies for Pumping Depletions	X	X	X	X		✓	✓	✓	✓	✓				✓				
Retirement of Irrigated Lands Necessary to Comply with Aquifer Sustainability Roles	X	X	X	X		✓	✓			✓				✓				
Alternative Cropping Education and Promotion Program	X		X			✓	✓	✓	✓			✓						
Restoration of West Fork Complex Fire Burned Areas	X	X	X	X	✓					✓				✓	✓	✓	✓	✓
Basin-wide Water Public Education Program	X	X	X	X	✓	✓	✓			✓			✓	✓	✓	✓	✓	✓
Streamflow Forecast Improvements	X	X	X	X		✓	✓			✓				✓				✓
Rio Grande Initiative Conservation Easements	X		X	X	✓					✓			✓		✓	✓		
Rio Grande Headwaters Restoration Project	X	X	X	X	✓	✓	✓			✓			✓	✓	✓	✓	✓	✓

**RIO GRANDE BASIN IMPLEMENTATION PLAN & COLORADO PLAN**

- Rio Grande Basin Roundtable Supports the Development of the Colorado Water Plan
- Rio Grande Basin Roundtable Supports the IBCB's Development of the Conceptual Agreement



**"THANK YOU!"**

- Citizens of the Rio Grande Basin
- Members of the Rio Grande Basin Roundtable
- Volunteers who contributed countless hours to the Basin Implementation Plan
- CWCB Board and Staff
- Water Resources Review Committee
- DINatale Water Consultants
- [www.riograndewaterplan.com](http://www.riograndewaterplan.com)

