



# Watershed-Based Stormwater Permitting

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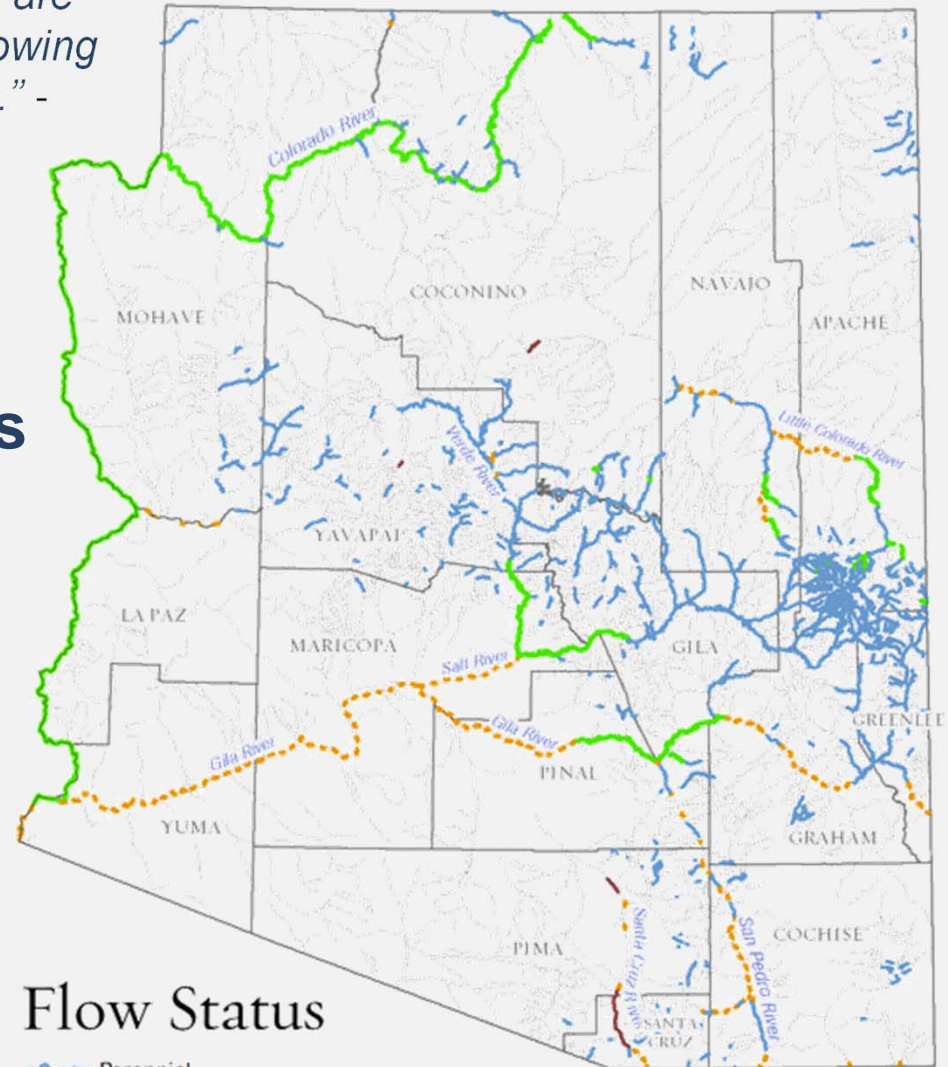
MS4 Statewide Summit  
Arizona Department of Transportation  
Phoenix, Arizona  
June 18, 2013

thanks to: Sarah Holcomb, New Mexico Environment Department  
and Kevin Daggett, City of Albuquerque and Claude Levi-Strauss, L'Académie Française

*“Deconstruction does not show that all texts are meaningless, but rather that they are overflowing with multiple and often conflicting meanings.” - Jack Balkin, 1995*

## The talk . . .

- 1) Discuss the basis of EPA’s model watershed permitting program
- 2) Examine the draft Albuquerque /Middle Rio Grande MS4 Permit
- 3) Talk about how and why this idea might migrate west.

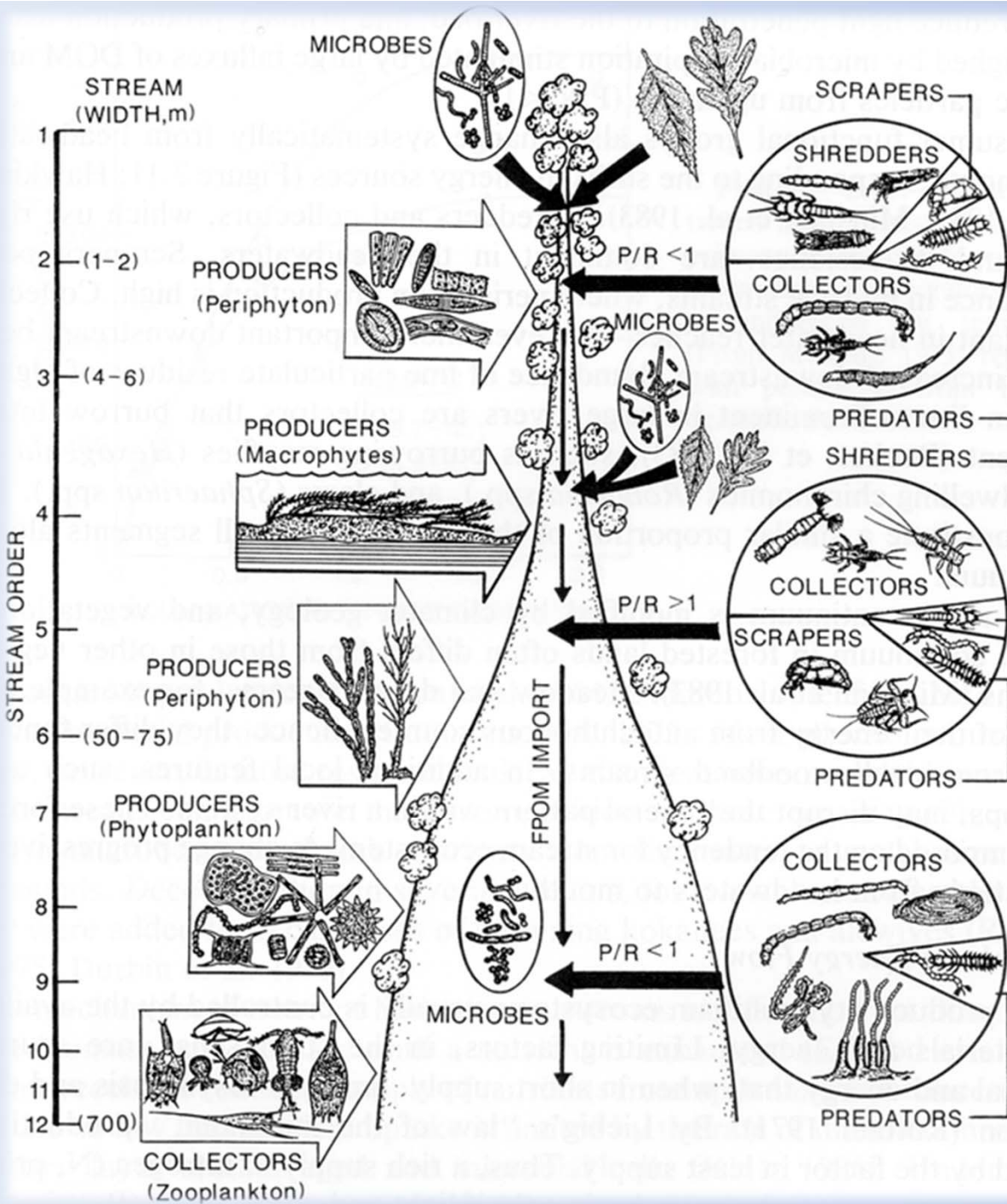


### Flow Status

- Perennial
- Formerly Perennial
- Regulated
- Effluent Dominated (May Be Formerly Perennial)
- Intermittent or Ephemeral

The Nature Conservancy   
Protecting nature. Preserving life.™

Flow status data created from TNC Freshwater Assessment, available from [azconservation.org](http://azconservation.org)



The theory . . .

A well-ordered watershed . . . is a smoothly varied watershed.

Easy to model, even easier to protect

# BIOPHYSICAL GRADIENTS



From headwaters to downstream extent, the physical variables within a stream system present a continuous gradient . . .

-- Vannote et al., 1980

Unregulated rivers exist as geohydraulic continua from continental divides to the ocean.

-- Stanford et al., 1996

Natural watersheds typically develop a sequence of ecosystem types along hydrologic flowpaths . . .

-- NRC 2009

Arroyo Chico @ Puerco River

3

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Arroyo Chico @ Puerco River

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# The 2009 NRC Report

- EPA's water's current approach to regulating storm water is unlikely to produce an accurate or complete picture of the extent of the problem, nor is it likely to adequately control storm water contribution to water body impairment.
- Convert the current piecemeal system into a **watershed-based permitting system**.
- **Flow** and related parameters like impervious cover should be considered for use **as proxies** for storm water pollutant loading.



# *Energy Independence and Security Act of 2007, aka EISA*



Theodore Roosevelt Island, Washington D.C.

## **SEC. 438. STORM WATER RUNOFF REQUIREMENTS FOR FEDERAL DEVELOPMENT PROJECTS.**

The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to **maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property** with regard to the temperature, rate, volume, and duration of flow.

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"the science of clean water"

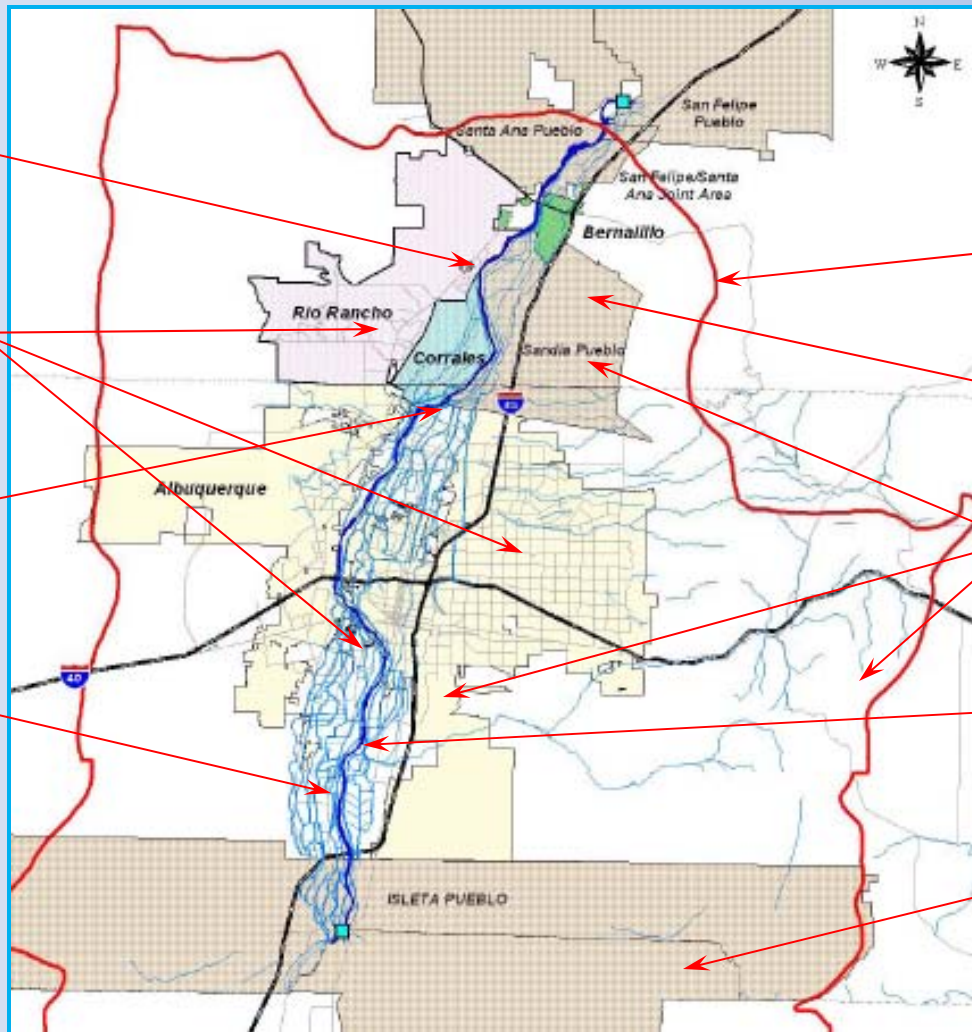
# EPA Watershed Permitting Pilots



New Mexico does not have NPDES primacy



# Middle Rio Grande Watershed MS4 Permit



Rio Grande-ABQ  
(Upper Reach)

Urbanized Areas

North Division  
Channel outfall

Rio Grande-ABQ  
(Lower Reach)

Watershed  
Boundary

Sandia Pueblo  
(Separate WQS)

Rural Areas

Wastewater Plant  
Outfall

Isleta Pueblo  
(Separate WQS)

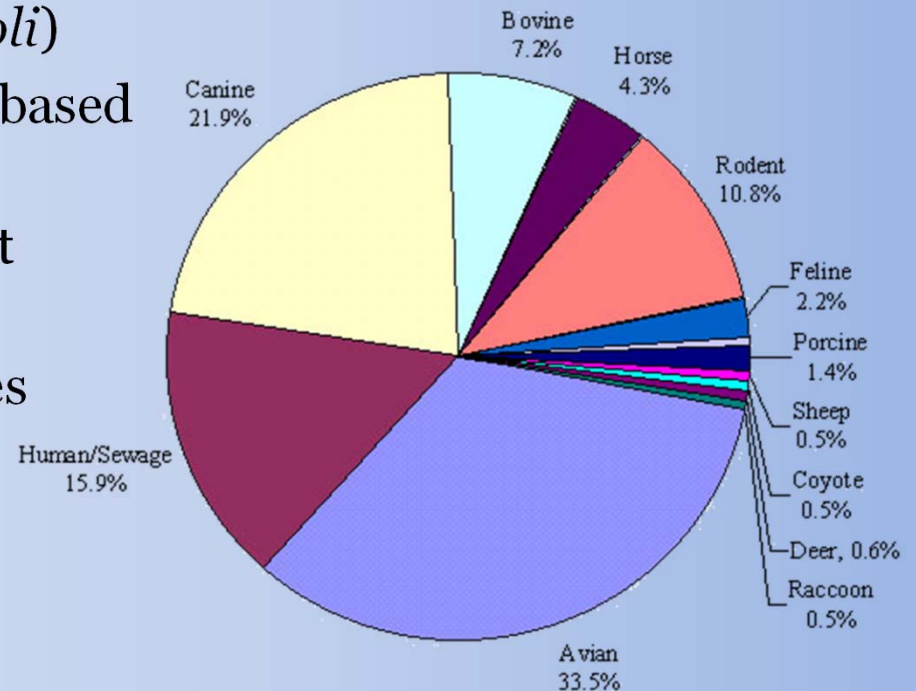
# Middle Rio Grande Watershed MS4 Permit

## Total Maximum Daily Load determinations

- Completed by NMED in 2010 (*E. coli*)
- Determined assimilative capacities based on water quality standard
- Established capacities for non-point source bacterial discharges
- Identified probable bacterial sources
- Suggested pollution reduction alternatives

## Additional impairments from

- Temperature
- PCB in fish tissues, sediments
- Dissolved oxygen



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# Middle Rio Grande Watershed MS4 Permit

So what are the elements of the permit?

## Accumulates all the regulated entities under a single permit

- ◆ Phase I permittees
- ◆ Phase II permittees
- ◆ New permittees (2010 Census)
- ◆ Indian communities

A general permit approach using a Notice of Intent (NOI)

“The proposed permit is flexible so that the development and implementation of a joint SWMP among several permittees can be achieved in cooperation with public agencies or private entities.”



# Middle Rio Grande Watershed MS4 Permit

## On the issue of water quality standards . . .

“Section 402(p)(3)(B) of the (Clean Water) Act is silent on the issue of compliance with water quality standards for MS4 discharges.”

*and*

“Where a TMDL addresses storm water discharges from an MS4 or other regulated storm water discharge, NPDES permits must be consistent with assumptions and requirements of the Waste Load Allocations in the TMDL. EPA expects that most water quality-based effluent limits for NPDES-regulated MS4 discharges will be in the form of Best Management Practices, and that numeric limitations will be used in rare instances.”



# Middle Rio Grande Watershed MS4 Permit

## *Flow as a proxy for pollution . . .*

**“All new and redevelopment projects must design, implement and maintain a system of controls that will prevent an increase in the one-hundred-year, two-hour peak runoff, a change in the time of the peak, or an increase in the total runoff from its pre-development values and manage pre-development runoff values on site.”**

*and*

**“This performance standard must be implemented and enforced via an ordinance and/or other enforceable mechanism(s).”**



# Middle Rio Grande Watershed MS4 Permit

## *Endangered Species Act (ESA) Requirements*

“EPA has included requirements to ensure actions required by this permit are not likely to jeopardize the continued existence of any currently listed as endangered or threatened species or adversely affect its critical habitat.”

## *Monitoring and reporting*

“Permittees may choose either Option A (Individual Monitoring program) or option B (Cooperative Monitoring Program).”

Reporting can also be cooperative

No annual load calculation.

# *The raw and the cooked . . .*

“Certain categorical opposites drawn from everyday experience . . . can serve a people as conceptual tools for the formation of abstract notions and for combining these into propositions.” - Claude Levi-Strauss



Cooperation, flexibility and mutual effort **opposes** political rivalry. inequities in public funding and lawsuits.

- ◆ Tribes vs. States
- ◆ City vs. County
- ◆ Public support for storm water utilities is very soft in the West.
- ◆ the Tucson Green streets experience
- ◆ Virginia DOT v. EPA  
“Stormwater runoff is not a pollutant.”

# *... and the Trickster.*

“The trickster is a mediator. Since his mediating function occupies a position halfway between two polar terms, he must retain something of that duality—namely an ambiguous and equivocal character..“

- Claude Levi-Strauss

And then there is East vs. West!

“Analysis of precipitation data indicates that 90% of the 24 hour (or less) rainfall events are 1 inch or less.”

Really? Conflation of rainfall with runoff.

Need a Trickster to mediate the opposites?







<http://www.epa.gov/region6/water/npdes/sw/ms4/#riograndewatershed>

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