

The Resurgence of a River: a Report on Fish in the Santa Cruz

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1 - School of Natural Resources and the Environment, The University of Arizona, Tucson, AZ 85721

2 - The Sonoran Institute; 7650 E. Broadway Blvd. Suite 203; Tucson, Arizona 85710

3 - US Fish and Wildlife Service, Aquatic Animal Recovery Group, 201 N. Bonita, Suite 141; Tucson, AZ 85745

4 - Friends of the Santa Cruz River (FOSCR); P.O. Box 4275; Tubac, AZ 85646

The Santa Cruz River



The (historic) Santa Cruz River



The (historic) Santa Cruz River



Nogales International Wastewater Treatment Plant



River Watch Program

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Alert!: Interpretive River Walks

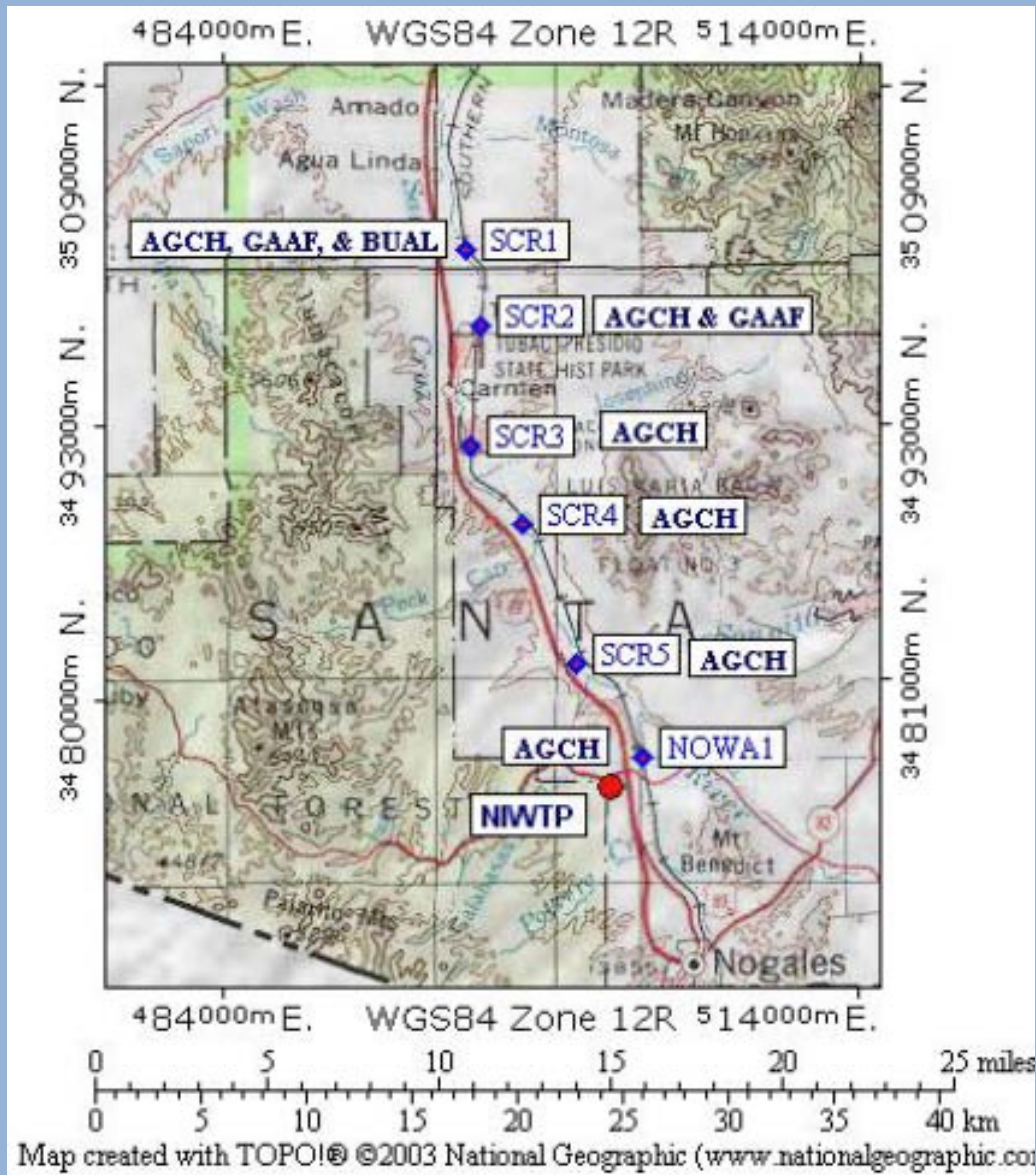
Tumacacori Historical Park January - April

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Upcoming ::

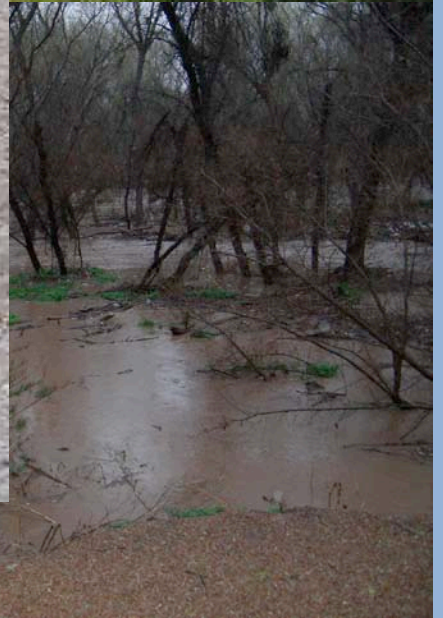
January Monthly Meeting

Sampling sites



- **SCR1** – Chavez Siding Crossing
- **SCR2** – Tubac Bridge
- **SCR3** - Santa Gertrudis Crossing
- **SCR4** – Palo Parado Crossing
- **SCR5** – Rio Rico Bridge
- **NOWA1** - Nogales Wash at Ruby Rd. Bridge

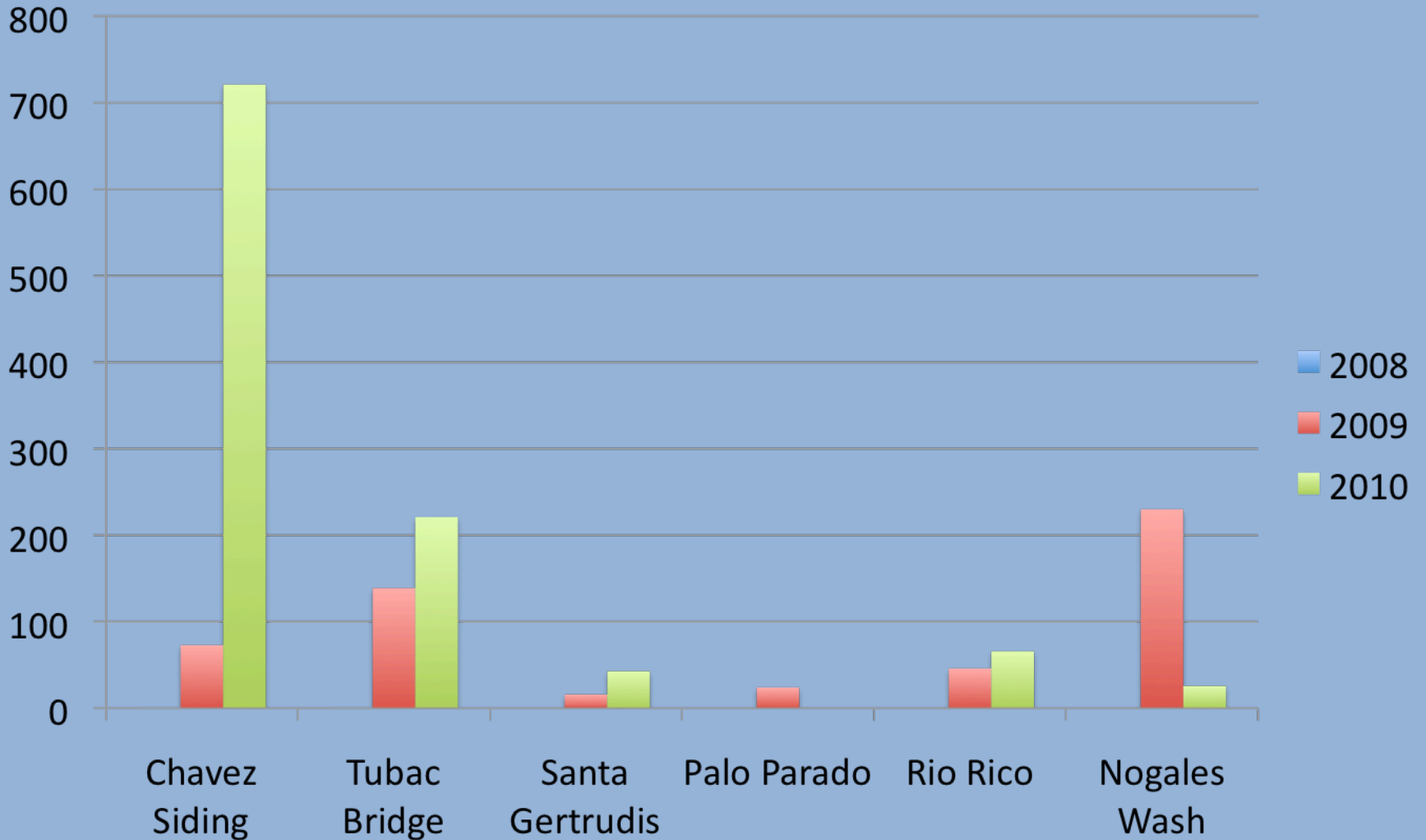
Sampling sites





Backpack electrofishing, seining,
block and shock

Total Fish



Sewage plant to get upgrade

By Tony Davis Arizona Daily Star | Posted: Thursday, December 15, 2005 12:00 am

Nogales' sewage treatment plant, long a bane for people living downstream because of its pollution discharges into the Santa Cruz River, is finally getting an upgrade.

The federal government approved a \$59 million grant to the city of Nogales on Wednesday to overhaul the Nogales International Wastewater Treatment Plant.



State orders IWBC to clean up discharge into river

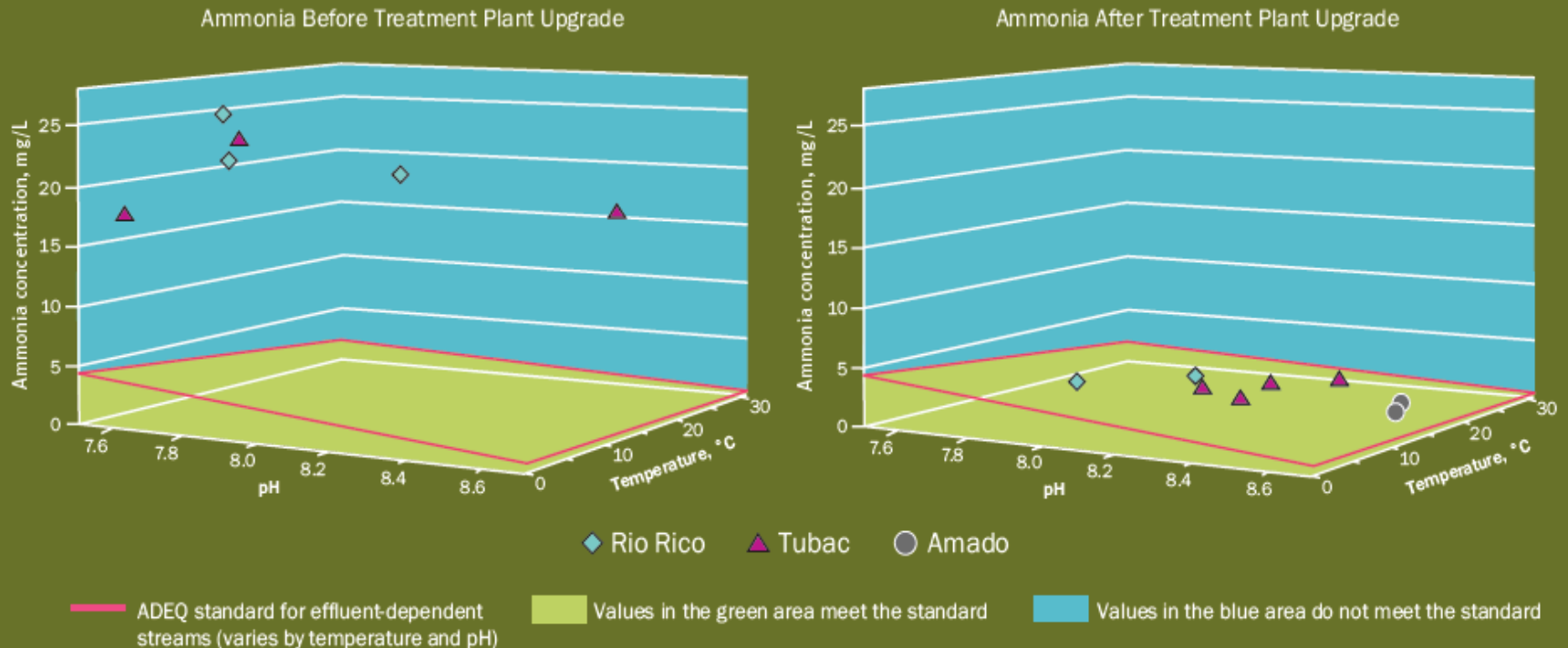
By Wren Abbott
Nogales International

State environmental officials have ordered the International Boundary and Water Commission (IBWC) to decrease the amount of pollutants being discharged into the Santa Cruz River by the international sewage treatment plant in Rio Rico.

In a compliance order issued Oct. 22, the Arizona Department of Environmental Quality (ADEQ) cited elevated levels of cadmium in effluent from the Nogales International Water Treatment Plant (NIWTP) in reports from May 2008 to June 2010.

The levels peaked at over three times the legal limit in November 2009, ADEQ said.

Ammonia levels



Data Source: Arizona Department of Environmental Quality, Friends of the Santa Cruz River, National Park Service Sonoran Desert Network, and Sonoran Institute



	Location	Year	AGCH	GAAF
	Chavez Siding	2008	1	0
		2009	26	47
		2010	266	455
	Tubac Bridge	2008	1	0
		2009	36	103
		2010	214	7 (800+)*
	Santa Gertrudis	2008	0	0
		2009	10	6
		2010	43	0
	Palo Parado	2008	0	0
		2009	24	0
	Rio Rico	2008	0	0
		2009	46	0
		2010	66	0
	Nogales Wash	2008	0	0
		2009	232	0
		2010	26*	0

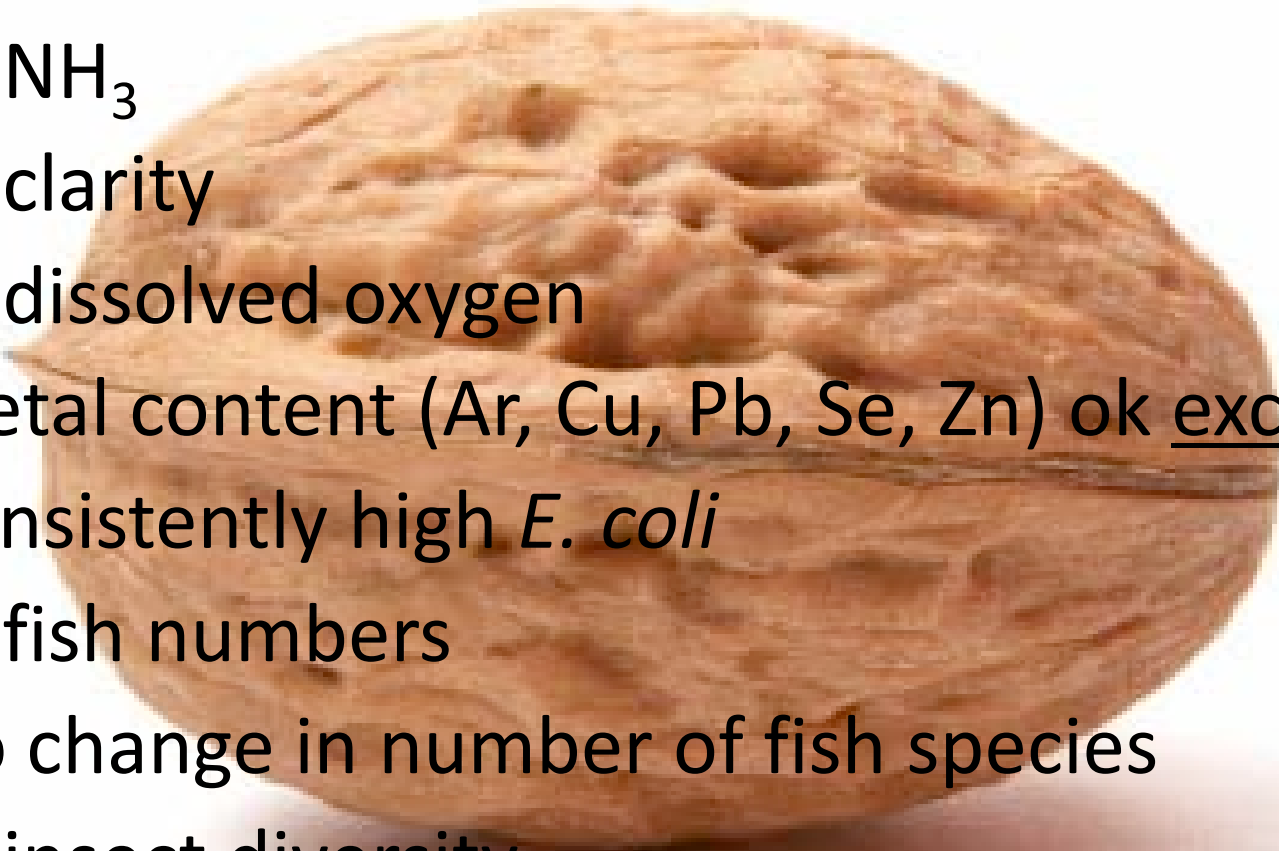
No increase in number of fish species



In a Nutshell:

NIWTP upgrades completed in 2009. Since then:

- ↓ NH_3
- ↑ clarity
- ↑ dissolved oxygen
- Metal content (Ar, Cu, Pb, Se, Zn) ok except Cd
- Consistently high *E. coli*
- ↑ fish numbers
- No change in number of fish species
- ↑ insect diversity
- Change in substrate



Questions?



Friends of the Santa Cruz River

