



The Flow

April 2013

Friends of the Santa Cruz River Newsletter

President's Message:

Consistency through the Changes

By *Scott Vandervoet*
FOSCR President

Another year has come and gone for Friends of the Santa Cruz River, with some significant changes to mention. Last year at this time, the Board President was Jennifer Parks, who had lead the group for just over a year. Due to a growing family Jennifer stepped down from her position this past summer. For me it has been a learning experience both in time management, as

well as community issues. The natural environment and communities of our region have always been important to me, and as the President of the Board, I am able to focus this energy within a group of people equally enamored by, yet concerned for, the health of our valley.

Over the past year FOSCR has aggressively taken on the issues of development along north Pendleton Drive, as well as educational outreach in local schools and at our own events. FOSCR

spoke to the Santa Cruz County Planning and Zoning Commission during meetings in the late summer regarding proposed commercial zoning along intersection of Pendleton Dr. and the new bridge at Palo Parado. Our message was focused on the need to protect crucial habitat within the land parcels encompassed by the proposed zoning change. Ultimately the Commission recommended that the proposal be denied, and to date, no change has been made in the zoning.

FOSCR has also increased its educational outreach efforts with the creation of a portable aquarium demonstrating aquatic ecology of the Santa Cruz River. We obtained a permit from Arizona Game and Fish in 2012 and have been able to collect native vertebrates and invertebrates, as well as aquatic vegetation from locations such as Santa Gertrudis crossing. We have used the portable aquarium to demonstrate some of the unique aspects of the river's biodiversity to a public that probably wouldn't (and with good cause) put on a mask and snorkel and look under the surface of the flow.

Hear Ye, Hear Ye, Hear Ye

Annual Members' Meeting to Convene

Friends of the Santa Cruz River invites all to our Annual Members' Meeting Saturday, April 6, 2013 at the Tubac Presidio State Historic Park 2 PM – 4 PM. Our featured speaker will be hydrologist and historian Phil Halpenny who will also guide an archeological tour of the Old Tubac Barrio, one of the oldest Spanish settlements in the U.S. Refreshments will be available. Come meet the FOSCR Board, hear what we've been doing to protect our river, join us in honoring our Amigos del Rio, and consider joining us! RSVP to Sherry, 398-8269 or sushi4334@gmail.com.



President's Message, con't.

That being said, it is worthwhile stating that the quality of the perennial surface flow of the Santa Cruz River in Arizona is in much better condition than just a few years ago. FOSCR's quarterly monitoring efforts (in conjunction with the Arizona Department of Environmental Quality) have illustrated that ammonium and nitrogen levels are significantly lower than pre-upgrade levels at the Nogales Interna-

tional Wastewater Treatment Plant in 2009. Native fish populations have also increased.

One area of continuing uncertainty though, is that of potential reduced volumes exiting the treatment facility. The City of Nogales, Sonora has initiated wastewater treatment at their newly inaugurated Los Alisos plant south of the city, and while fluctuation from normal daily deliveries have been noted at the treatment outfall in Rio Rico, further monitoring is necessary

to create a concise assessment of the impact of the Los Alisos operation.

I look forward to another year of engagement and interest in the well-being of the Santa Cruz River and the communities that live near and depend upon its resources. FOSCR is always looking for new membership and fresh ideas to support our ongoing mission of protecting the river, and educating the public in relation to such.

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THE SANTA CRUZ RIVER**

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 Jeremy Moss
 Blue Evening Star

Honoring our Amigos del Rio

Bill Cox

Last year Tumacacori National Historical Park sent out a letter to people and organizations who might be interested in helping the Mission stop trespass livestock from grazing in the Park. Bill Cox stepped up, putting together a group of concerned stakeholders.

The group is trying to solve the problems caused by livestock wandering the Rio Rico area because of the safety issues caused to drivers and the severe ecological damage they can cause in sensitive habitats, especially riparian habitats.

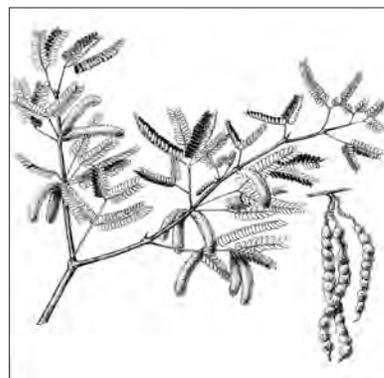
While the problem has been around for a long time and may be difficult to resolve, progress has been made thanks to Bill's hard work and commitment to seeing it thru.

Raymond Frey

Raymond Frey, Course Superintendent at Tubac Golf Resort, has been a crucial collaborator with Friends of the Santa Cruz River working on projects related to soil erosion near the river and Anza Trail.

Raymond has worked in conjunction with FOSCR board members to assess and remediate erosion by supplying materials and labor. He has installed pipe and rip-rap so best control run-off following precipitation.

He is a wealth of ideas related to how best manage land and insure the health of the riparian ecosystem along the Santa Cruz River.



The Flow is published by Friends of the Santa Cruz River (FOSCR), a nonprofit, volunteer organization dedicated to insuring the continued flow of the Santa Cruz River, the life-sustaining quality of its waters, and the protection of the riparian biological community that it supports.

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Opinions expressed in guest articles are those of the author's and not necessarily those of FOSCR.

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Building Alliances for a Thriving Patagonia Region

By Blue Evening Star
FOSCR Board Member

A group of over 60 people met at Cady Hall on Saturday, March 2 to attend a Super Citizen Advocacy Workshop about new mining proposals in the Patagonia Mountains. The workshop was hosted by the Patagonia Area Resource Alliance (PARA), and the speakers were: Dinah Bear (who served over 25 years on the Council on Environmental Quality as General Council); Melanie Emerson (Executive Director of Sky Island Alliance); Jenny Neeley (Conservation Policy Director and Legal Council of Sky Island Alliance); and PARA Board members Kathi Noaker, Michael Stabile, Carolyn Shaffer and Coordinator Wendy Russell.

During the workshop, we were given an overview of recent proposals for mining in the Patagonia Mountains, an excellent overview of environmental assessment and protections afforded by the National Environmental Policy Act (NEPA), and many opportunities to jump in and assist PARA with preserving and protecting the Patagonia region so that it will thrive for all who care about this precious bioregion.

There are now five mining proposals in the Patagonia Mountains. Three proposals are for large scale mining operations and two for smaller “placer” mines. All five are in the beginning stage of the NEPA process.

Workshop presenter Dinah Bear (who oversaw the NEPA process over all federal agencies for 25 years in Washington, DC) emphasized the importance of people’s individual input in the early stages of the NEPA process—particularly in what is called the scoping period—so that studies can be done to insure adequate identification and analysis of areas (both physical and cultural) that may be harmed by the mines. Ms. Bear

also suggested that people go to the sites of the proposed mines to see and feel the area to be impacted. Visiting the sites can also be done with a representative from the USFS (who handles the NEPA process) in order to show them exactly what your concerns are.

The workshop included several brainstorming sessions to create ideas on how to involve more people in building alliances for a thriving Patagonia region. Just a few of the many ideas listed were:

- Participate in letter-writing campaigns
- Crow from the rooftops that this is not necessarily a mining friendly jurisdiction
- Respond to editors who publish opinion pieces about local mining
- Help with tabling at events to get the word out

Many people believe that one of the best ways to address concerns about mining proposals in your own backyard is to become involved in addressing the bigger problem of the 1872 Mining Law. This law has been governing mining operations on the public lands of America for over 140 years. While it has been modified by the 1976 Federal Land Policy Management Act, mining companies continue to have free access on public lands once they find the minerals and successfully “stake their claim”. Amazingly, the \$5.00 per acre cost for companies approved to do mining on public lands has not changed since 1872.

Blue Evening Star is also a member of Global Community Communications Alliance, in Tumacácori, Arizona



Southern end of Patagonia Mountains with Santa Cruz River and the San Rafael Valley in the foreground. Photo by Glen E. Goodwin (goochgoodwin.com)

Student Involvement in FOSCR Activities: The Annual Fish Survey

Contributed by the Students of the Global Community Schools Bioregional Activism Class

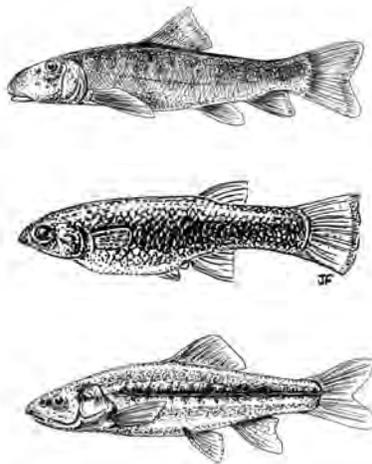
The annual fish surveys of the Santa Cruz River began in 1999. Over the years many agencies have helped out with the fish survey including the Nature Conservancy, State Parks, Sonoran Institute; Arizona Game & Fish Department; U.S. Fish & Wildlife; Tumacácori National Historical Park, U. S. Geological Survey, and the University of Arizona.

A typical fish survey is like this: everyone meets at Chavez Siding Road at about 9 a.m. If there is water there, then we capture and count fish and aquatic inverts. Next, everyone piles into their cars and drives to Santa Gertrudis Lane. This spot contains some of the best native fish habitat and we sweep it thoroughly. The next stop is Rio Rico Bridge. This is often where we have lunch. Sampling of locations upstream from the Nogales International Waste Water Treatment Plant (NIWTP) vary from year to year but can include Las Lagunas de Anza, Kino Springs, and surrounding areas in years when the water is high. Every survey includes sampling of the Nogales Wash near the Pilot gas station – just upstream from the treatment plant.

There are records of a fish survey from 1904 when they found Longfin Dace, Gila Chub, Gila Topminnow, and Desert Sucker. These are all native fish. These fish have been in decline for the past few decades. Much of the decline is caused by an increase in un-ionized ammonia levels causing fish mortality. Riverwatch has also documented an increase in nitrogen levels; however fish have been present although not in abundance (until recently). Representatives of FOSCR observed Longfin Dace,

Desert Sucker, Sonoran Sucker, Gila Topminnow and Mosquito Fish in 1999. Mosquito Fish are an invasive species.

Our Bioregional Activism class (from the Global Community Communications Schools) began attending the annual fish Surveys in 2008. We first found the river smelly and all we found in the river were some bloodworms. In 2008 there were no other aquatic inverts and the only fish were a few sickly looking Longfin Dace, and 1 healthy Mosquito Fish. The next year, in 2009, there was a dramatic difference. The NIWTP had installed upgrades which went online in May 2009. The river showed signs of re-



Top to Bottom: Desert Sucker, Gila Topminnow, Longfin Dace

storing health in that there were many aquatic invertebrates such as dragonfly nymphs, damsel fly nymphs and water boatmen. We also found a big, fat helgromite. That year we found a good amount of fish, but the mosquito fish population almost doubled the number of native Longfin Dace. Since then, every year we find increasing numbers of aquatic invertebrates and fish, with the

Longfin Dace numbers steadily rising.

In the 2012 survey, we found no mosquito fish and a healthy, re-established native Longfin Dace population. Our class really looks forward to going on the fish survey every year. It is fun to meet scientists who do the fish survey and to help them. We get to help hold the seine net to catch the fish, chasing & catching fish with the dip net as they get stunned by the electro-shocker. (Don't worry, they wake up right away and it does not hurt them).

We also count fish and aquatics, carry equipment, and once we were allowed to do a PH test of the water. It is especially fun to catch fish. Just being outside in the beauty of the Santa Cruz River with friends, doing something to help the river is great.

The Longfin Dace are a pioneering fish species that are like miniature salmon. Once an aquatic habitat becomes healthy and available, they are among the first to settle there. They are very determined and resourceful when going upstream. When they have to scale a waterfall or a fast moving rapid, they will jump out of the water and cling to a rock by hooking their dorsal fins into algae in the rock. Once rested they will jump again and again to reach their destination. When the river has a dry spell, they will wrap themselves into a sponge of damp algae and can survive up to a few weeks till the river comes back.

The Gila Topminnow is a less active fish who prefers slow-moving water, pools, and deep bank pockets. They require very healthy water and certain conditions to survive. The Santa Cruz River is nearly healthy enough for the Gila Top minnow to return. All he needs is the right flood conditions so they will be carried down to the river from mountain pools and to



FOSCR and EPCOR Water Partner to Provide Water Harvesting Workshops

FOSCR spent nearly a year and a half helping the Tucson based non-profit Watershed Management Group host water harvesting workshops at the Guy Tobin Anza Memorial Trailhead in Rio Rico. Water harvesting is a great way make use of the precipitation that falls on our landscape and reduce water use for landscaping purposes.

FOSCR has continued to offer opportunities for community members to learn about water harvesting. In October FOSCR partnered with the water utility EPCOR to provide a classroom based workshop in Tubac. In February a hands-on workshop was held in Rio Rico.

FOSCR and EPCOR plan to hold more of these with the next hands-on workshop scheduled for April 20th from 8 - 11 in Rio Rico.

If you are an EPCOR utility customer, check your bill inserts as this is one way future workshops will be announced.

For more information about the April 20th workshop or other water harvesting questions, please contact Jen Parks at j_parks78@msn.com or (520) 235-4325.



This water harvesting basin created at a recent workshop will direct more water to the existing tree.

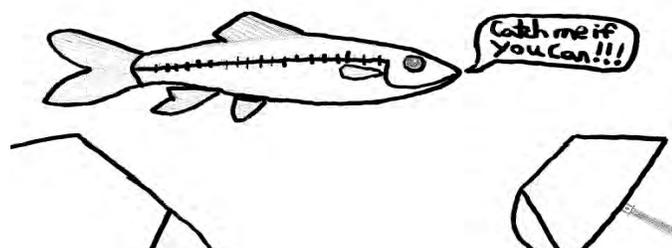
Fish Survey, Con't.

find a proper habitat in a slower part of the stream. The Gila-Topminnow is the only live-bearing fish in the region it is endangered.

FOSCR recently acquired a permit that gives them permission to catch fish in the Santa Cruz River for scientific display purposes at the FOSCR booth at events. We are the ones who get to help catch the fish. We did this in 2012 for the Celebrate the River Picnic & Tumacacori Fiesta events. First we practiced at Santa Gertrudis and were able to catch Longfin Dace & aquatic invertebrates along the cut bank even though did not have a shocker. We just dip netted & seined them. It was great to display the live fish and bugs in the aquarium at those events and we look forward to doing it again.

Tips For Catching Fish On Fish Surveys

1. Try different areas of the river to find out where the fish are.
2. Use the dip net to catch fish and to herd them into the seine net.
3. Only sample in each spot one time because once they are stirred up the fish will leave the area and return later.
4. Have high rubber boots and make sure they don't leak.
5. When using a backpack electro shocker-do not walk in front of it, and don't step on the rat's tail.
6. Be aware not to let your shadow cross fish habitat or step in the water before sampling.



Making Homemade Green Cleaning Supplies

By Jen Parks
Former FOSCR Board Member

In past editions of *The Flow*, green personal care and household products available on the market have been discussed. I'm a rather "thrifty" gal and I find many of these products a little pricey for my family's budget. I did some research about making my own cleaning supplies and found many online resources and a great book called *Green Housekeeping* by Ellen Sandbeck. The websites I have gleaned information from include: practicalsaver.com, thecentsable-shoppin.com and simpleorganizedliving.com. Most of these websites are more focused on making homemade cleaning products to save money, so I have tweaked a few recipes so they were a little more "green."

All Purpose Cleaner:

- 1 tsp. Borax
- 1/2 tsp. dish soap
- 1/2 tsp. lemon juice
- 16 oz. water

Mix together in a spray bottle. I often use Dr. Bronner's Sal Suds for dish soap and other uses. I have purchased large bottles of Sal Suds locally at The Yard Woman in Tubac.

Dusting Spray:

- 1 part lemon juice
- 1 part Olive Oil

Mix in a spray bottle. One note, you want to use this stuff fairly quickly (within a month or so) or it starts to mold...trust me. I actually don't use this anymore after the mold incident. I just use a microfiber cloth

and water to wipe up dust.

Windows:

I usually only use a microfiber glass cloth and water. Mine is made by Casabella and was about \$5. Wet the cloth, rub the window and voila, it's clean! If you live in the area, you can purchase a similar type of cloth at Tumacookery in Tubac and they'll even provide you with a demonstration on how to use it! However, I do have a toddler whose sometimes

goopy handprints on the bathroom mirror require a little more than water to get clean. In that case I use this recipe:

- 1 part water
- 1 part rubbing alcohol
- 1 part vinegar
- 1 small squirt of dish soap or Sal Suds

Mix in a spray bottle.

Powdered Laundry Detergent:

I have been using this recipe for a couple years now and it cleans clothes well, including my children's cloth diapers and I also triple the recipe when I make it. I have read that this recipe works for HE washing machines because it is low-sudsing.

- 2 cups finely grated soap such as Ivory, Fels Naptha or Castile soap (you don't want to use soap with added oil such as Dove. Also, I use Ivory because I don't care for the smell of Castile soap and I thought using Fels Naptha faded clothing more quickly.)
- 1 cup washing soda (in Santa Cruz County I have reliably only found this at WalMart)
- 1 cup borax

Mix it all together and store in a container and use 2 Tbs per full load.



Placing the recipe on the spray bottle and covering it over with clear packing tape makes it easier to quickly replenish your cleaner.

Note from the FOSCR Board: After 9 years of service Jen Parks has resigned as a board member. We send a heartfelt thanks for all she has done for FOSCR and the Santa Cruz River, and we look forward to continued alliances with her.

Support the Friends of the Santa Cruz River

Thanks to all who donated last year. If you'd like to be a member for the 2013 season, you can fill out and mail the membership/donation form below or you can use PayPal

PayPal can be accessed by visiting our website at friendsofsantacruzriver.org. With a couple clicks you can select your level of support and pay with your

credit card. Using PayPal allows you to donate annually—reminding you when it's time to renew your contribution. You can also offer a one-time donation—or donate as often as you like.

Thanks for helping us replenish our financial aquifer!

FRIENDS OF THE SANTA CRUZ RIVER

Membership/Donation Form

Joining for the first time? GREAT!

Already a member? Want to Renew your membership?

Inspired to Donate?

Date _____ New ___ Renewal ___ Donation _____

Name _____

Address _____

City _____ State _____ Zip _____

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Have you received "A Rambler's Guide to the Santa Cruz River?" (Free with membership!) Yes ___ No ___

___\$5 Student Membership ___\$15 Single Membership

___\$25 Family Membership ___\$50 Supporting Member

___\$100 Sustaining Member ___\$500 Life Member ___ \$ Other: _____ (Amount)

___Please contact me for volunteering opportunities.

Please enclose a check made out to FOSCR

P.O. Box 4275, Tubac, AZ 85646

Would you be interested in supporting efforts of other organizations on issues that FOSCR believes are important to the health of the river and the life that depends on it? If so, check the box below and we will forward you action items that you may choose to respond to.

Yes, please send me links to take action!



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