

# A Multi-Media Campaign to Help Mitigate Environmental (In)Justice on Cheyenne River

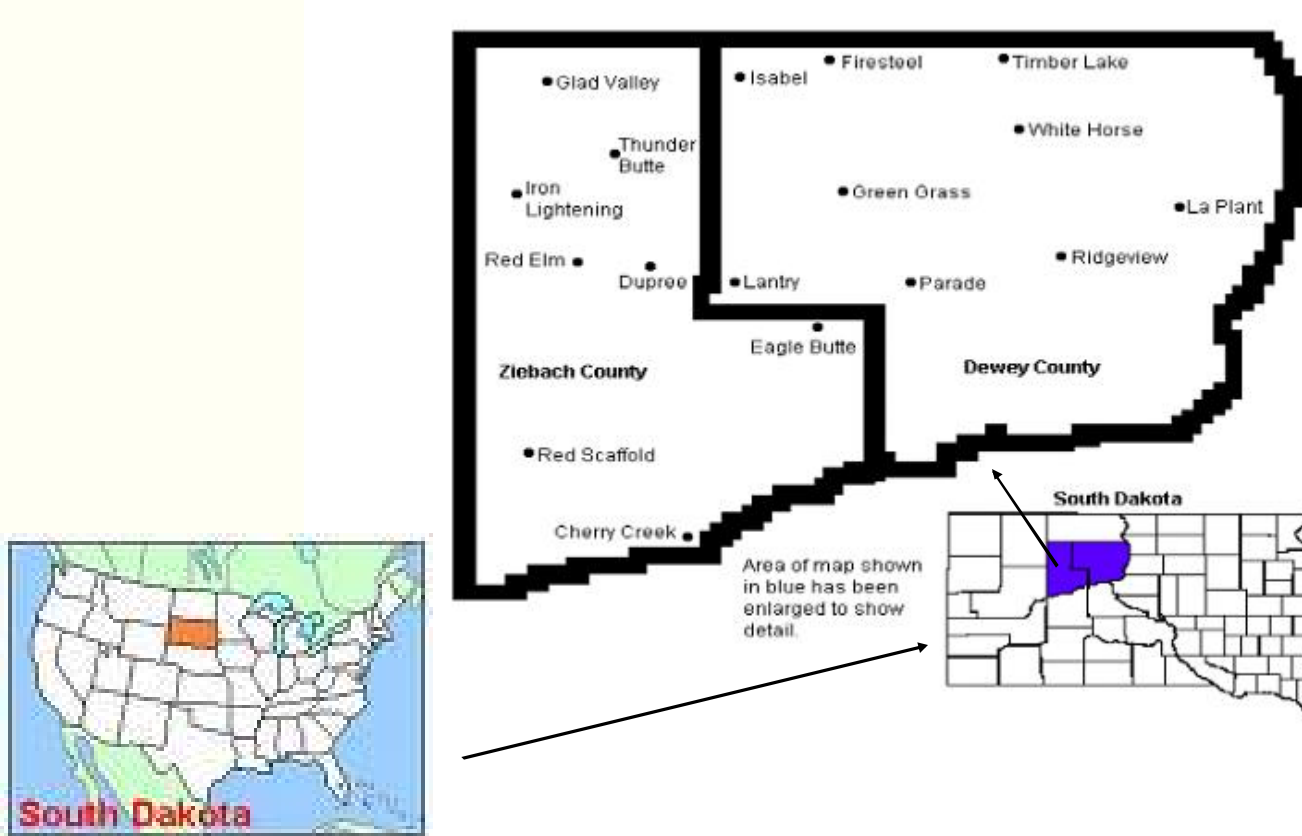
Partners in Environmental Justice on Cheyenne River



NIEHS R25 ES013292



# Cheyenne River Sioux Reservation



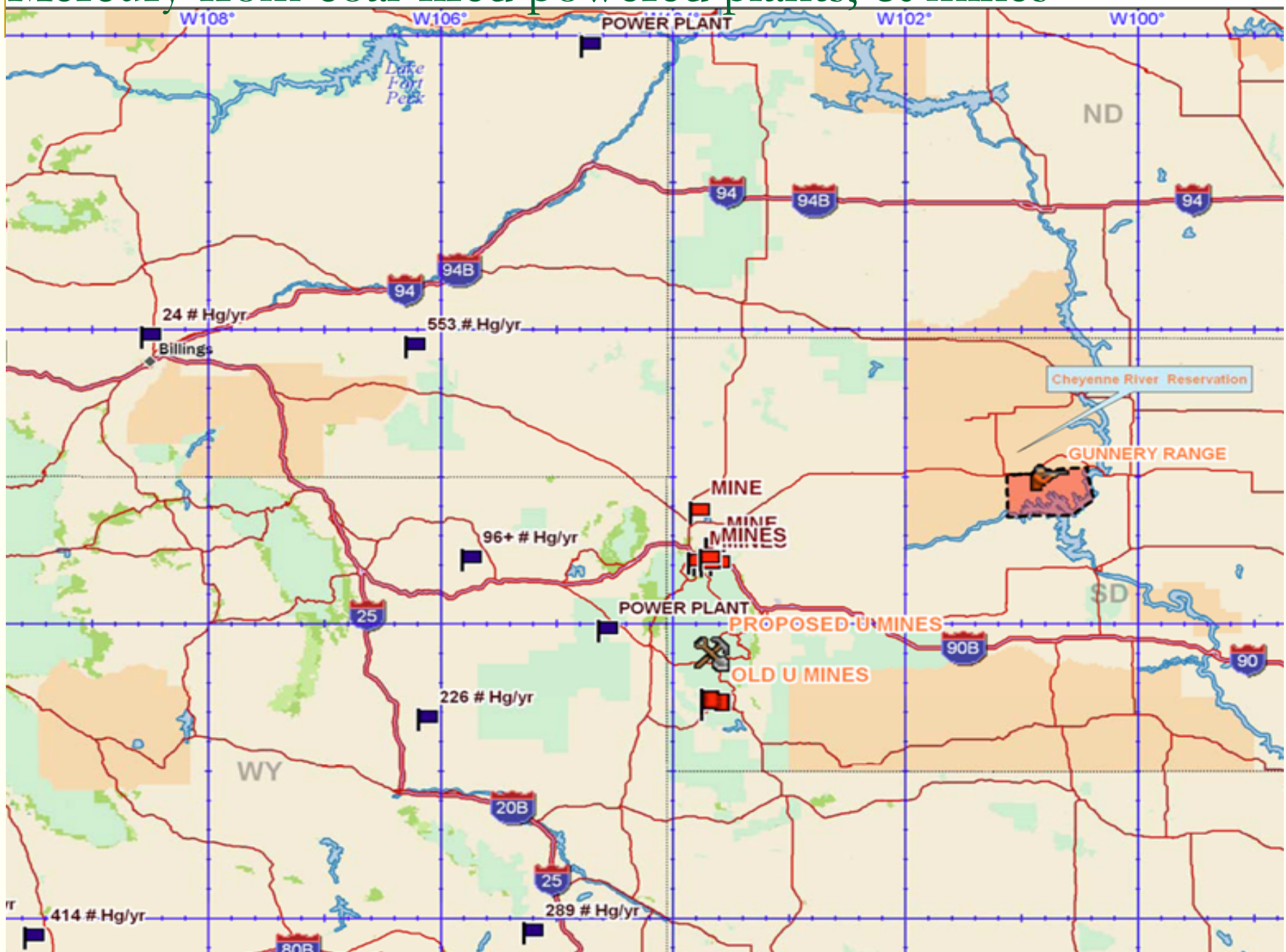
---

# Environmental Injustices on Cheyenne River Sioux Reservation

- Mercury contamination of fishing waters
  - Coal-fired power plants
- Heavy metal contamination of Cheyenne River
  - Run off from Black Hills mines
- Loss and contamination of tribal lands, relocation of tribal communities
  - Oahe dam flooding
  - Armstrong gunnery range

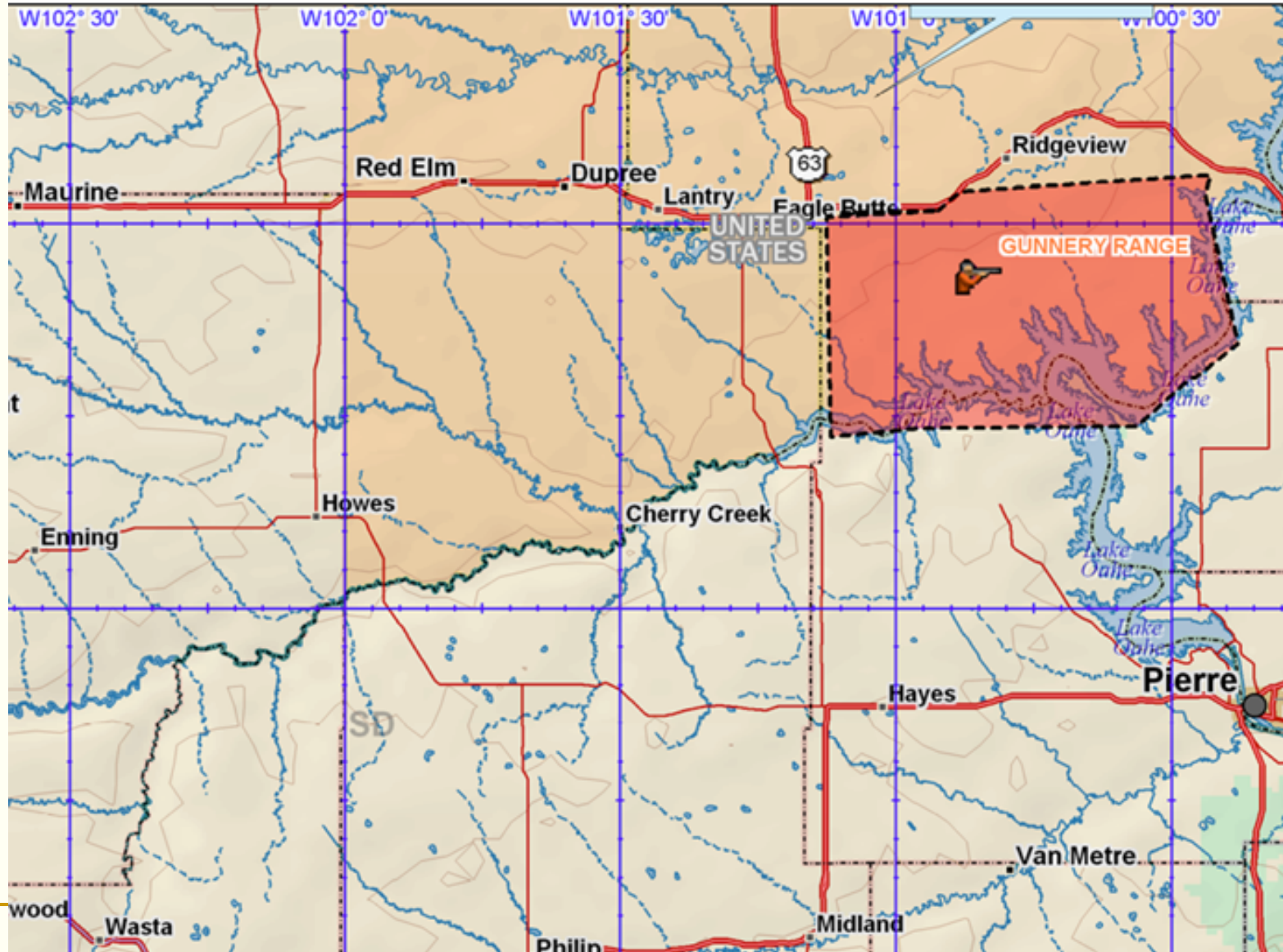
# Mercury from coal-fired powered plants, & mines

Topo USA© 6.0



# Gunnery Range-Oahe Dam Flooding

Topo USA© 6.0



# History of Partners

- Dr. Jeff Henderson, director of BHCAIH and tribal member of the CRST initiated discussions with Tribal Council and departments of environment and health
- Searched NIEHS centers for research partners with successful history of working with tribal communities on environmental justice issues
  - Identified UNM-CEHP
- Working team evolved
  - CRST-DENR (Lead Institution)
    - Contract with Dr. Henderson as PI
  - BHCAIH
    - Institution is also partner in team
  - UNM-CEHP
- Council involvement
  - Extensive interactions with Tribal Council to identify roles and responsibilities
    - Regular updates and approval of outreach and new research initiatives



# Engagement of Research Partners

- Cheyenne River Sioux Tribe (CRST)



- Department of Environment and Natural Resources (DENR)

- Inform community members of risk
      - Identify and respond to issues of importance to the community
    - Identify contaminants on reservations
      - Surface water, air, fish



- Department of Tribal Health

- Assist in outreach and trainings of CHRs

- Black Hills Center for American Indian Health (BHCAIH)



- Serve as scientific and medical resource to DENR

- Community Environmental Health Program (CEHP-UNM)

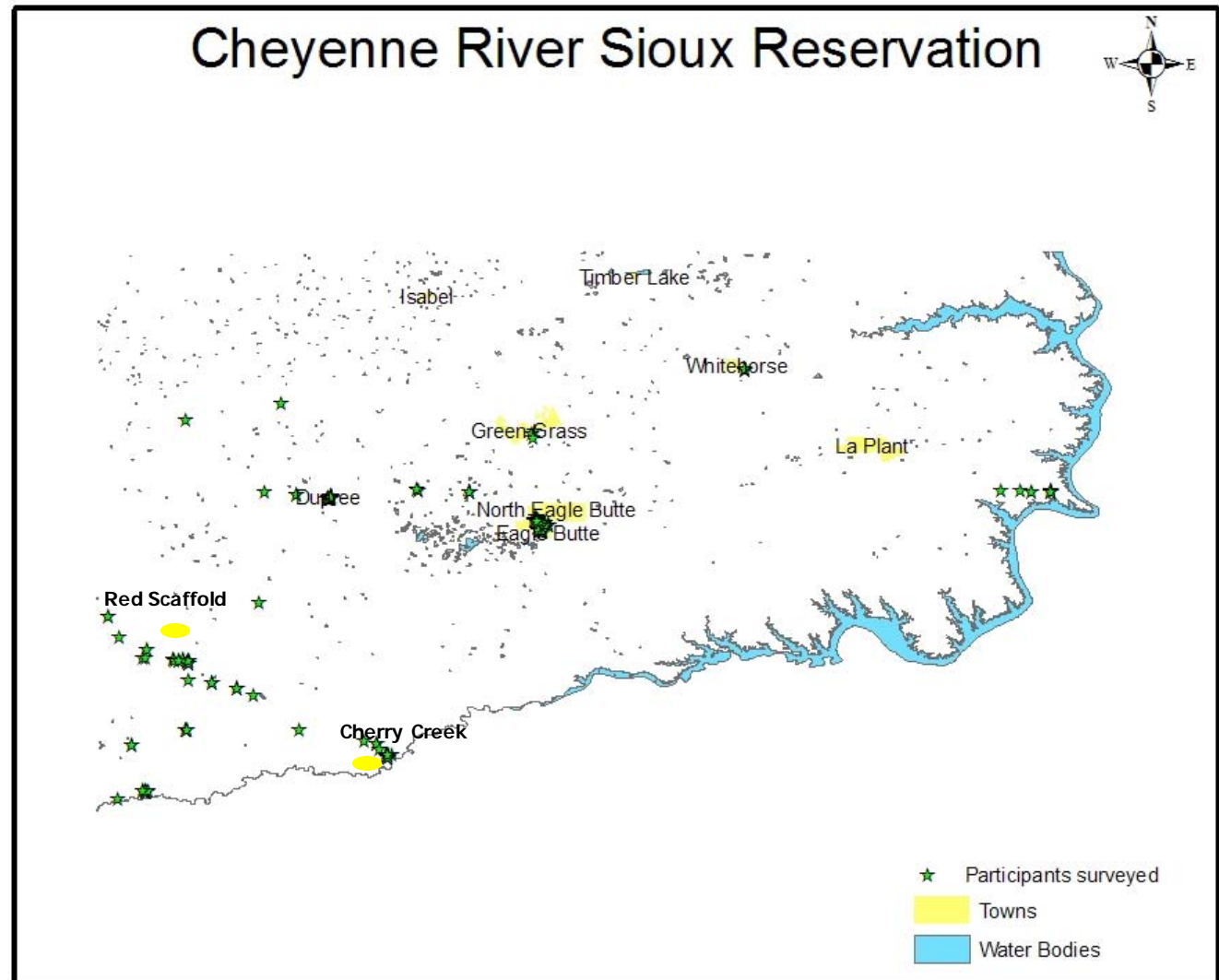


- New Mexico Center for Environmental Health Sciences – Community Outreach and Education Program (NMCEHS – COEP)

- Develop outreach and education materials

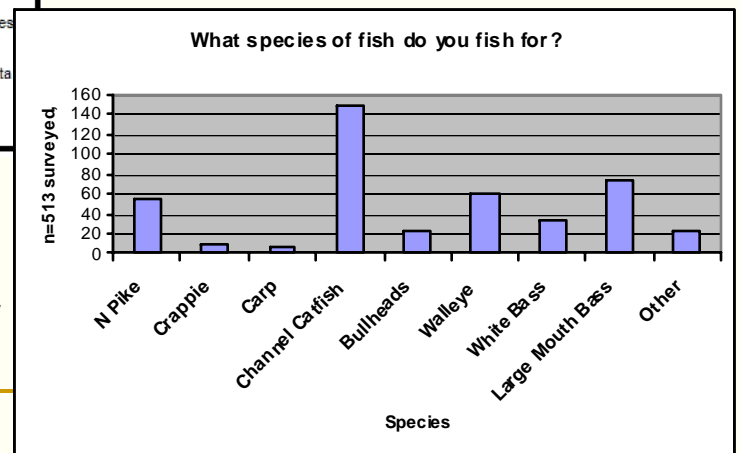
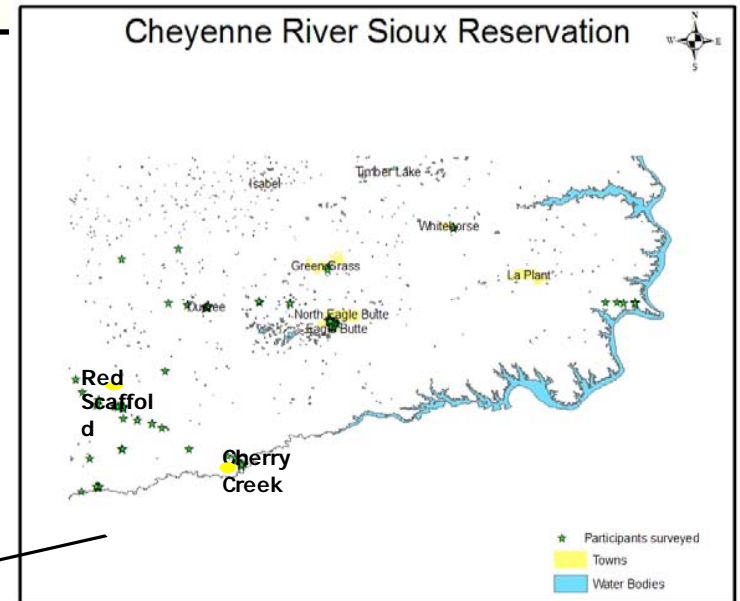
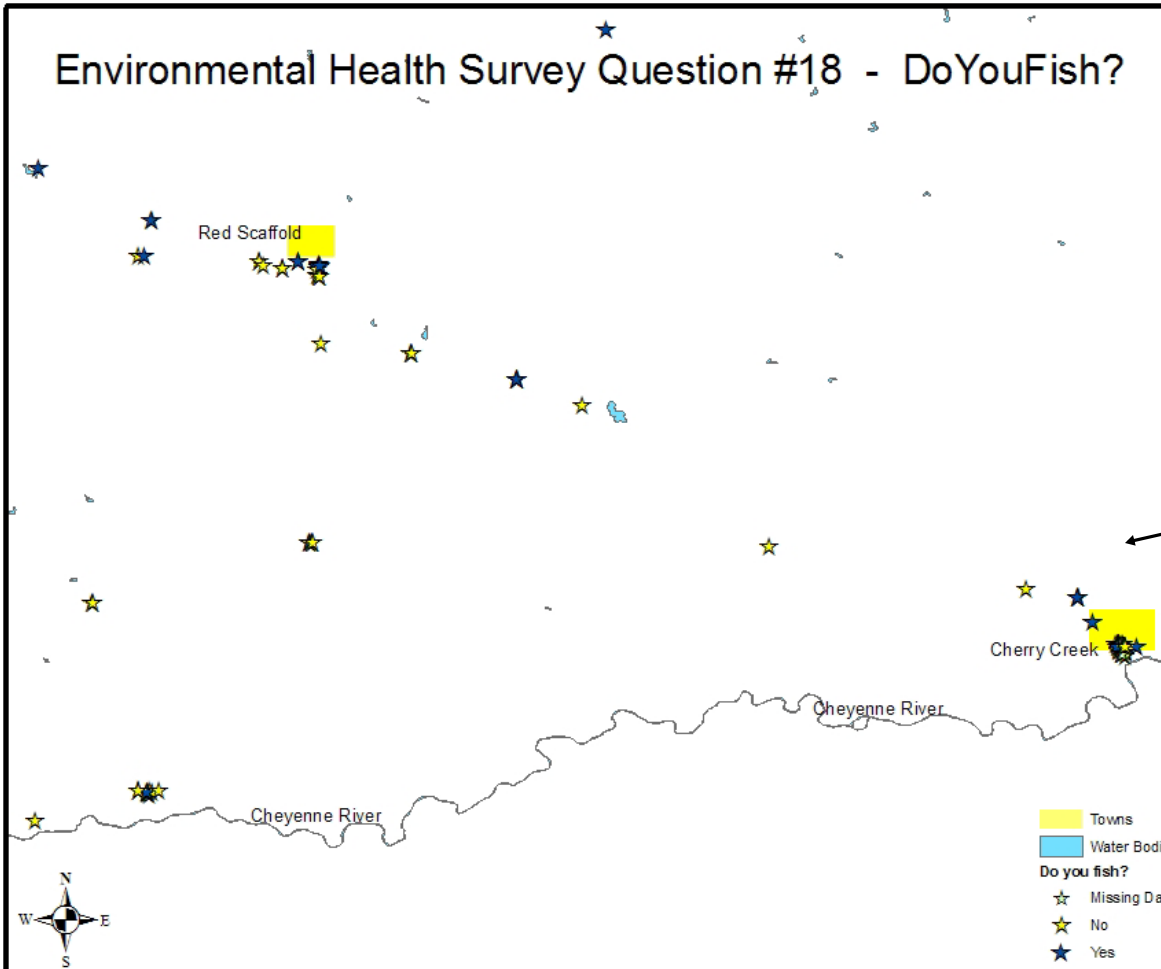
# Research Activities

- Participants surveyed throughout reservation  
(n = 700;  
513 entered to date)
- Knowledge, attitudes, beliefs about environmental health issues
- Land use practices



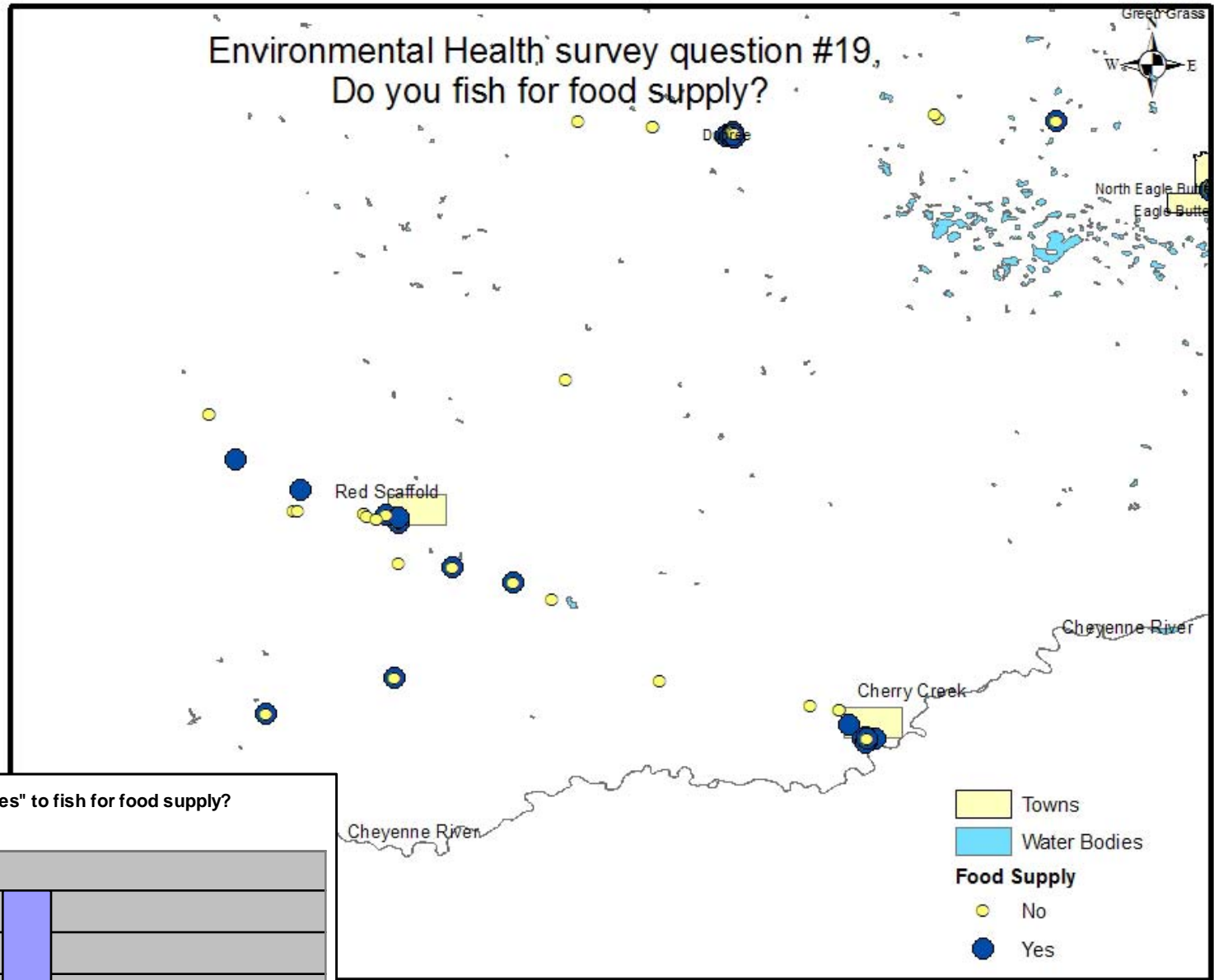


## Environmental Health Survey Question #18 - DoYouFish?

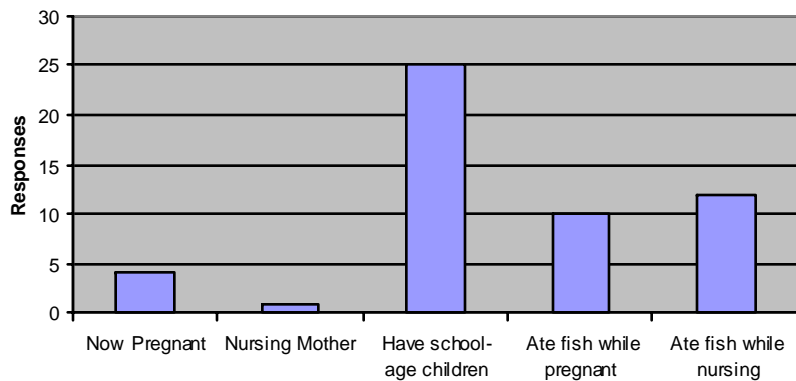


Note: Fish advisories have been posted since November 2000 for 3 largest rivers, and since 2002 for all waters. Survey numbers reflect current, not historic practices.

# Environmental Health survey question #19, Do you fish for food supply?

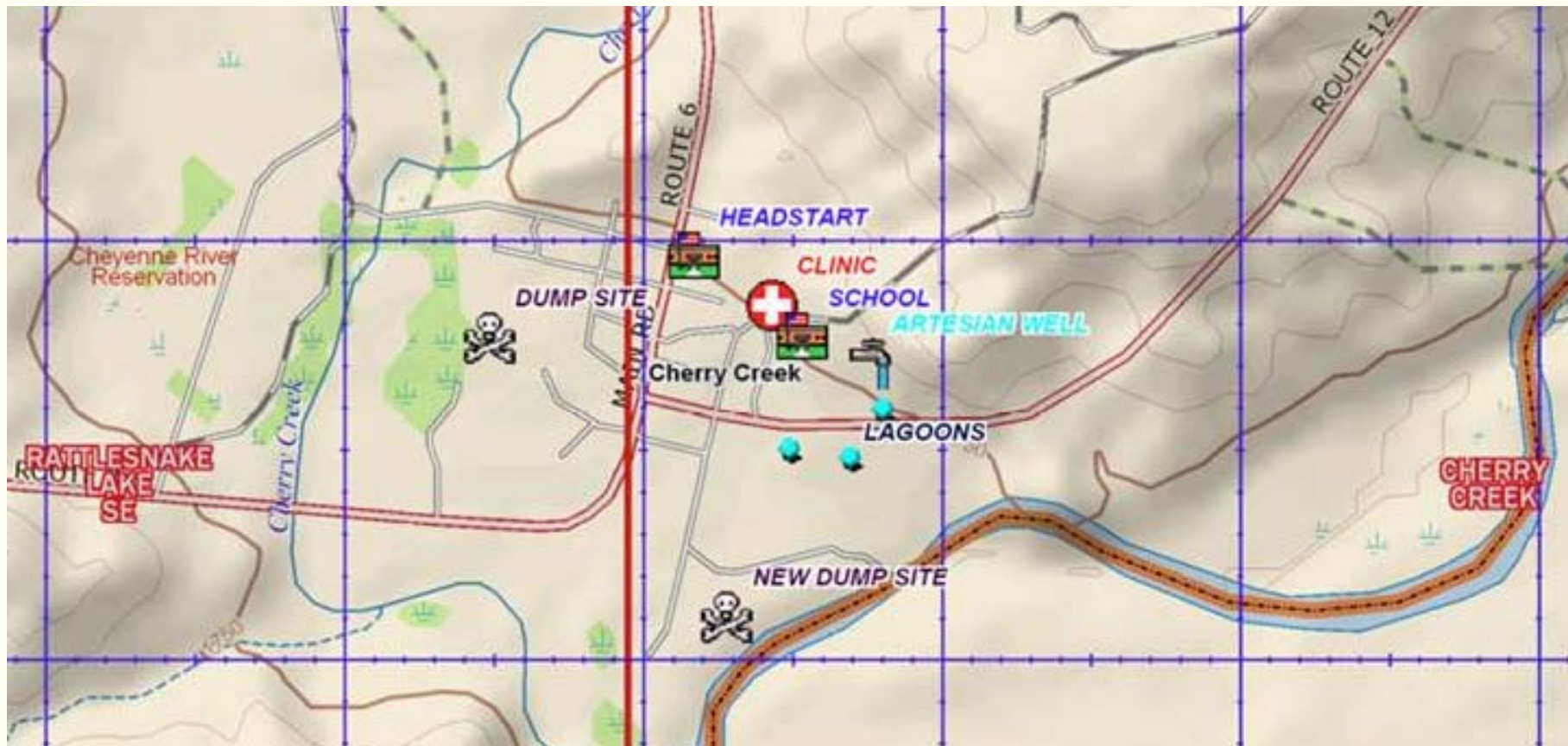


If participants answered "Yes" to fish for food supply?



# Cherry Creek Community

- Requested studies on heavy metal exposure and health because of historic and current fish consumption



# MEDIA CAMPAIGN: Posters

**Environmental Justice on Cheyenne River**  
A partnership among CRST DENR, BHCAIH, and UNMICEHP

## Mercury: Protect Yourself & Your Family

**Mercury**

- Is a heavy metal
- Is used in mining & milling
- Is found in coal
- Gets into the air & water
- Gets into large fish, and

**Those who *should not* eat fish caught locally are**

- Women who are pregnant or breastfeeding,
- Children under the age of 6, and
- Elders over the age of 65

**Environmental Justice on Cheyenne River**  
*Don't Pollute...*  
**Protect Unci Maka - Mother Earth**

## “Wakpa Waste Oyate”

*“The Good River People”*

Let's live up to our name, “Don't Pollute”, is the name of the

**Don't Pollute!! It's Illegal!!!**

**It Disturbs...**

- Rivers and creeks
- Plants, livestock and wildlife habitat
- Drinking water
- Health
- Fishing
- Economy

**It Causes...**

- Fires
- Releases toxic chemicals
- Health risks
- Safety concerns
- Mosquito and vector borne diseases
- Eyesore to residents and visitors

**Put trash in it's place!**

Place bagged everyday household trash in the dumpsters provided.

**Designated drop-off sites are specifically for:**

White goods (appliances such as, refrigerators, stoves, microwaves, washer, dryers) and tires.

• Clean up is not just an ANNUAL event  
• Keep Cheyenne River Clean

This is our land. Protect Unci Maka. Keep Cheyenne River Clean and Beautiful.  
If you see consistent dumping in an area please call Kim or Carlyle at DENR (605) 964-6568.

**For more information please call The Cheyenne River Sioux Environmental Protection Department at (605) 964-6568.**

**Working to Right a Century's Wrongs:**  
**Environmental Justice on Cheyenne River**

## “Wakpa Waste Oyate”

*“The Good River People”*  
**Historical Impacts**

**What is Environmental Injustice on Cheyenne River?**

The unfair, unjust impact of human and corporate activities to the people of the Cheyenne River reservation.

**Definition:**  
Injustice: unfair, not right, wrong  
Environment: Land, water, air (where you live, work and play)

**Environmental Injustices...**

- ... mining
  - Whitehead Creek Superfund Site
  - Gilt Edge Mine—listed on Superfund National Priority List (NPL)
- ... military activities
  - Araratong Quary Range
- ... Oahe Dam flooding
  - Economic and cultural losses
- ... Heavy metals in rivers, streams, stock dams

**What is EJ on Cheyenne River doing?**

- Providing information for tribal members to become aware of pollutants on tribal land
- Protecting health
- Working with EPD to improve natural habitat
- Assisting trained environmental health advocates
- Serving as a liaison between communities and the tribal government
- Surveying tribal members to understand how polluted natural resources may affect health
- Updating the tribe on environmental health issues
- Creating the environmental health advisory board
- Implementing health advocacy programs
- Identifying, educating, and assessing environmental health concerns in a culturally sensitive manner

**Drinking water**   **Health**   **Fishing**   **Economy**

**For more information please call The Cheyenne River Sioux Environmental Protection Department at (605) 964-6568.**

---

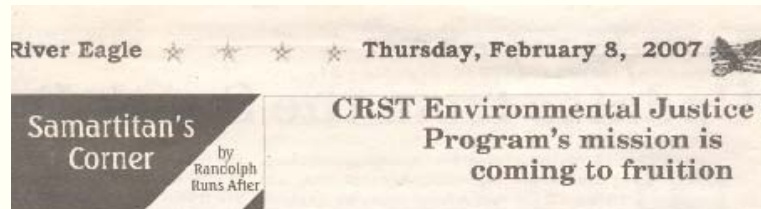
# MEDIA CAMPAIGN: Public Service Announcements

- Radio PSAs
  - Fish Advisory 🗣️
  - Illegal Dumping 🗣️
  - Trihalomethanes
  
- Visit  
[healthyvoices.org](http://healthyvoices.org)



# MEDIA CAMPAIGN: Newspaper Articles

2/8/07 Article written by  
Randolph Runs After,  
Tribal Health Sanitarian



In a previous article I mentioned the inception and development of the Cheyenne River Environmental Justice Program from its early beginnings and the projected role for this program in the CRST. I also mentioned he work yet to come and the challenge to fulfill its mission. That mission has been slowly coming to fruition thanks to the dedicated staff within its program. My program has welcomed being a part of this process in whatever manner possible to contribute to the overall mission of identifying and evaluating health hazards in the Cheyenne River Sioux Reservation.

The Environmental Health Program within the CRST Tribal Health Department and the Department of Environmental and Natural Resources (DENR) formerly the Tribal Environmental Protection Department (EPD) are often confused with each other in many respects. The Environmental Health program is a Tribal 638 program funded under the Indian Health Service. Previously in years past under my father Clarence, Sr.'s tenure, CRST Environmental Health

There are other, newer aspects to each of our respective departments / programs such as a renewed focus on injury prevention, monitoring emerging health threats, e.g. west Nile virus, bird flu, etc. for environmental health, and Brownfield's contamination work and inclusion of the sanitary landfill under EPD, but basically that's what both tribal entities do.

The Black Hills Center for American Indian Health (BHCAIH) has been a dominant player in the field of health research for natives locally and regionally for the past few years under the direction of Drs. Jeff and Patricia Henderson. Research grants that traditionally would have gone to major university research centers are now being granted directly to Tribes and native institutions such as the BHCAIH. One such recent effort was the compilation of a National Institutes of Health (NIH) grant for the Cheyenne River Sioux Reservation which builds on prior research conducted by the Dept. of Natural Resources (tribal EPD), including mercury in fish studies.

initial studies had indicated the presence of fish contamination in CRST waters, the EPD placed fish consumption warning signs on the public use areas of the Moreau and Cheyenne Rivers. These signs indicated a set of criteria that the public should adhere to with regard to eating fish on these waterways.

There was, however, little public education in explaining the "who's, why's and how's" of these public signs. Further fish sampling by EPD has resulted in the inclusion of local dams, ponds, and lakes to the same fish consumption guidelines as used for the rivers. Thus, one strategy of the Environmental Justice on Cheyenne River project is to create and disseminate public education materials, including those for schools, news media articles, and airing public service announcements (PSAs) on mercury contamination via radio media. Professionally developed PSAs are currently being disseminated to the media with Tribal Council approval and support which is paramount to the success of the program goals. This process has begun and will



5/18/06  
Article  
submitted by  
the project  
staff

## Speak out against environmental hazards

A series of environmental justice workshops will begin on May 23, sponsored by the CRST Department of Environmental Protections, the Black Hills Centers for American Indian Health and the University of New Mexico.

The workshops are provided for community members as well as community health representatives and anyone who is interested in gaining knowledge about environmental health.

They are scheduled as follows: Eagle Butte - Tuesday, May 23, from 9 a.m. to 4 p.m. at the Super 8 Conference Room.

Cherry Creek - Wednesday, May 24, 9 a.m. to 4 p.m. at the Zankals Hall

LaPlant - Thursday, May 25, 9 a.m. to 4 p.m., Tiospaye Topa school cafeteria.

The workshops will hope participants have a better understanding of the basic concept of environmental health and will identify environmental health concerns or issues in their own communities.

There will be demonstrations on a variety of topics to help participants identify environmental health contributors and how they can affect themselves and their communities.

The purpose of the National Institute of Environmental Health Sciences grant, Environmental Justice on Cheyenne River, is to raise awareness of environmental health issues faced in Sioux lands. The collaborating agencies will develop advocacy programs to improve tribal awareness, influence knowledge, attitudes, beliefs and behaviours to reduce risk to the Sioux people and improve the health of communities.

Some of the topics to be addressed are environmental injustice from mining, military activities, Oahe Dam flooding, and heavy metals in surface waters.

For more information or to register, call CRST EPD at 964-6538.


# MEDIA CAMPAIGN: Magnets

Fish Advisory distributed at outreach events


**Those who *should not eat* fish caught locally are**

- Women who are pregnant or breastfeeding,
- Children under the age of 6, or
- Elders over the age of 65


If you are not in one of the above groups, limit the amount of fish you eat. Each month, it is safe to eat one of the servings recommended:




1 serving of Northern Pike or



2 servings of Bass or Perch or



3 servings of Walleye or



4 servings of Catfish

**Eat the small ones and throw the big ones back.**

**For More Information  
Call: (605) 964-6568**

**Environmental Justice on Cheyenne River**

Funded by the NIEHB Grant #26 EBO #282-01 and FRD EB #2072-03



Hmmm — I think I'll raise this chick on mice instead of fish. Environmental Justice on Cheyenne River warned us about mercury in local waters and fish not being safe for children, pregnant women, and the elderly any more. We have to be careful how much fish we eat these days, especially you, my little one.

If you are **NOT** a pregnant woman, a child under the age of 6, or elderly, limit the amount of fish you eat. Each month, it is safe to eat one of the servings recommended:



1 serving of Northern Pike or



2 servings of Bass or Perch or



3 servings of Walleye or



4 servings of Catfish

**Eat the small ones and throw the big ones back.**


For More Information  
Call: (605) 964-6568  
Environmental Justice on Cheyenne River

Funded by the NIEHB Grant #26 EBO #282-01 and FRD EB #2072-03



Hmmm — I think I will raise this chick on mice instead of fish. Environmental Justice on Cheyenne River warned us about mercury in local waters and fish not being safe for children, pregnant women, and the elderly anymore. We have to be careful how much fish we eat these days, especially you my little one.

If you are not in one of the above groups, limit the amount you eat. Each month, it is safe to eat one of the servings recommended below:



1 serving of Northern Pike or



2 servings of Bass or Perch



3 servings of Walleye or



4 servings of Catfish

**Eat the small ones and throw the big ones back.**

For More Information  
Call: (605) 964-6568  
Environmental Justice on Cheyenne River

Support provided by NIEHB 1R06 EB015282-2, 200506-0001

# OUTREACH: Trainings

## ■ Involvement

- CRST-DENR, CEHP-UNM/NMCEHS, BHCAIH
  - Trainings led by CEHP
  - Question/Answer session by DENR and BHCAIH

## ■ Audience

- Community Health Representatives
- General Community
  - Cherry Creek
  - Eagle Butte
  - La Plante

## ■ Topics

- Basic Risk Assessment
- Introduction to Environmental Health
- Environmental Mapping
- Community Involvement
- Hands on involvement and demonstration activities



Cherry Creek Community, May 2006



# OUTREACH: Community Meetings

- CEHP-UNM/NMCEHS
  - Intensive train-the-trainer model
    - DENR staff trained to:
      - Present scientific data to public
      - Address field questions
      - Facilitate discussions
      - Capacity building and confidence in DENR staff to talk about health to the community



# RESPONSE:

- More phone calls to DENR office resulted from
  - Surveys
  - Outreach
  - Community Meetings
- Identification of information & research needs by the community
  - Exposure
  - Health
    - Immune function & autoimmunity



---

# Summary

- Development of an Environmental Health Advisory Committee
- Future research
  - Cherry Creek residents
    - Specifically requested more information on level of exposure to metals
      - Tissue analysis
        - Hair
- Developing a research protocol
  - Based on follow-up concerns by community members and clinicians
    - Autoimmune disease (known to be linked to heavy metal exposure)
    - Status of immune system
    - Pilot to be funded by Center for Clinical and Translational Science Center at UNM
- Research team will begin working with Tribal Council of approval and input on research goals and design

---

# Acknowledgements

- BHCANH

- Dr. Jeff Henderson, PI
- Dr. Shalini Kanekar

- CRST-DENR

- Carlyle Ducheuneaux
- Kim Whitewolf, Project Coordinator
- Brenda Veit

- CEHP-UNM

- Dr. Johnnye Lewis
- Mallery Downs RN
- Miranda Cajero