

**The Corps'
soil dumping
into the Missouri River**

Update 2012

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Former Chair of the
Missouri Clean Water Commission**

Review

Jameson chute



The U.S. Army Corps of Engineers is digging a series of side channel chutes along the Missouri River to provide shallow water habitat for the pallid sturgeon.

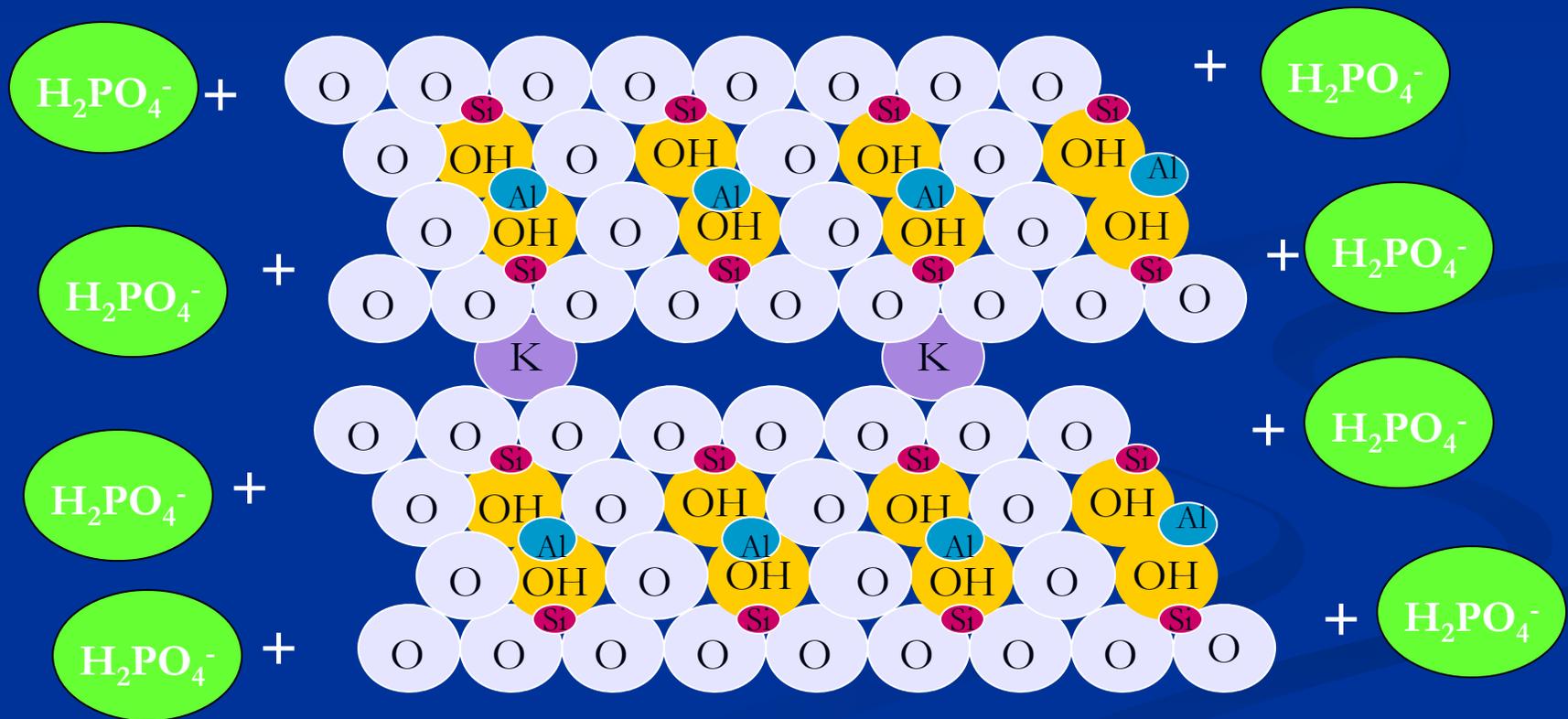
These chutes are up to 25 feet deep, 200-300 feet wide, and over mile long, depending on the site.

The Clean Water Commission did not oppose the projects. They opposed dumping the soil that is being excavated for these projects into the Missouri River.

Phosphorus

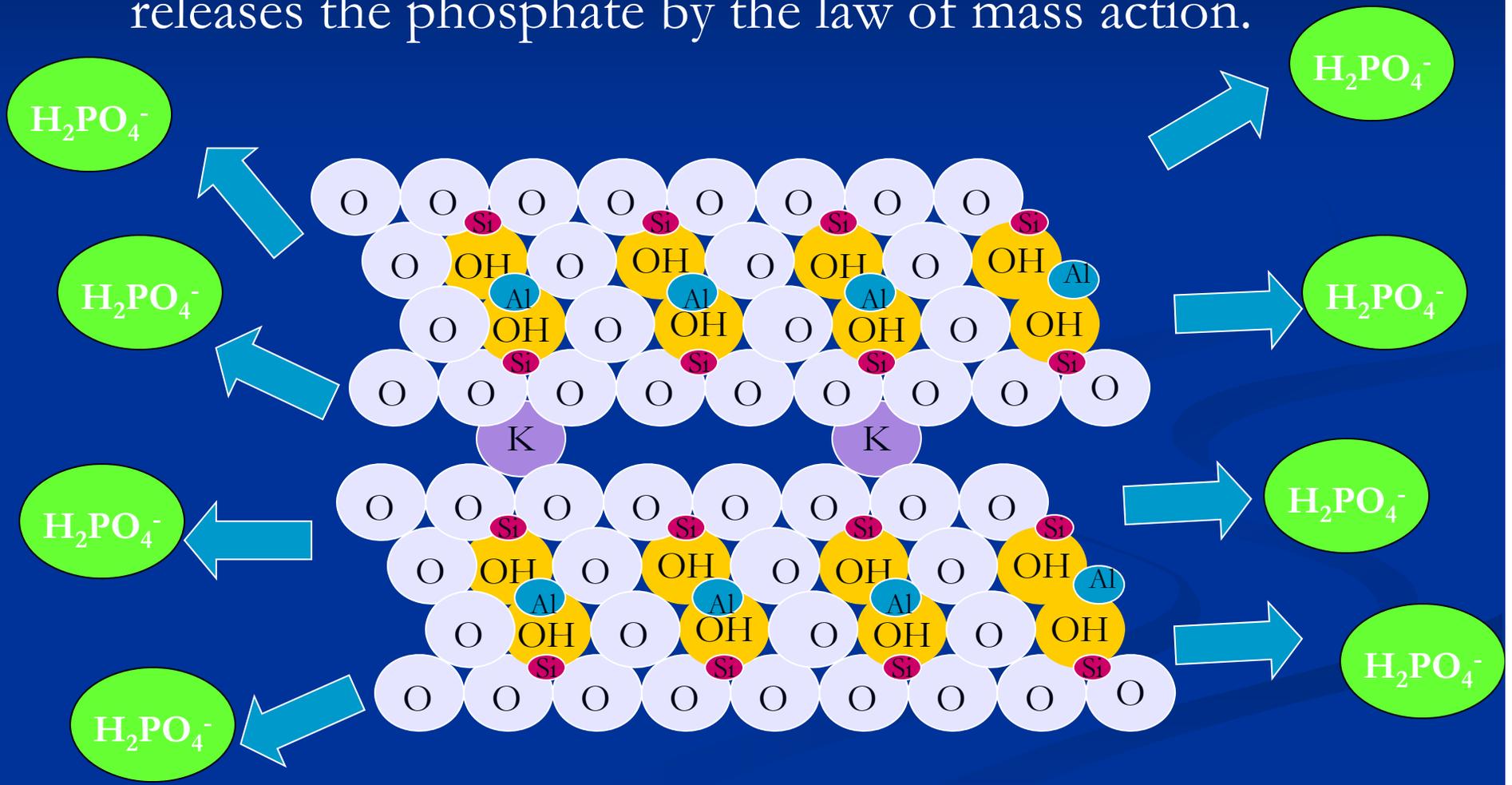
- Phosphorus is an essential nutrient for plant and animal growth.
- Some rock contains phosphorus.
- Bottom land soils (sediment) have a lot of naturally occurring phosphorus. It is a component of the soil, not a contaminant.
- Bottom land soils require very little, if any, applied phosphorus fertilizer to grow crops.

- That positive charge of the clay particle attracts the negative charge of the phosphate H_2PO_4^-
- That happens on land or in water.



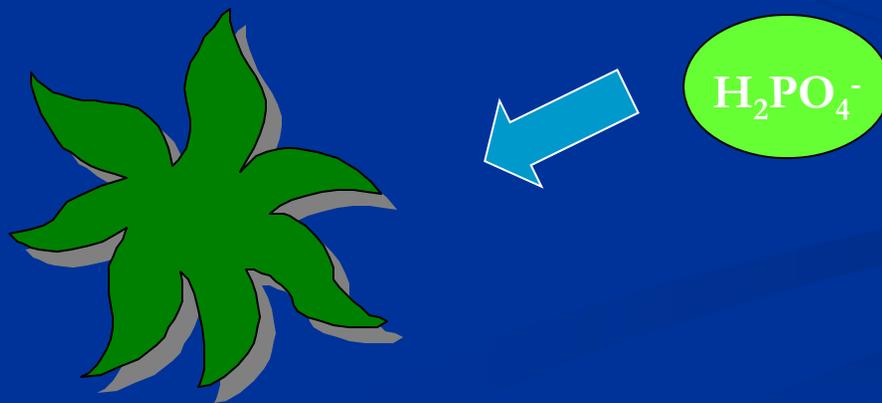
- On land, plant roots extract the phosphate tied to the clay colloid (sediment/soil).
- In the fresh water of the Missouri River or Mississippi River, because the phosphate attaches to the clay colloid (sediment/soil), the phosphate is “unavailable” - - tied up.
- If you test for it, it will not show up as available phosphate. You must test for TOTAL phosphate.
- The best way to know what you are putting into the river is to test the soil that is being put into the river.

- When the sediment/clay colloid hits the SALT water of the Gulf of Mexico, the phosphorus is “desorbed”- LET GO - and it becomes “bioavailable”. The salinity releases the phosphate by the law of mass action.



Hypoxia – the dead zone

- The phosphate fertilizes the plankton in the Gulf, which causes excessive growth of plankton. When the plankton dies, its decomposition consumes too much oxygen out of the Gulf. Then there isn't enough oxygen to support other life forms. That causes the dead zone.



Other causes

- Phosphorus is not the only cause of hypoxia. Scientists find fault in nitrogen, organic matter and silica. But they are ALL contained in sediment.
- THEREFORE, the best way to avoid causing hypoxia in the Gulf of Mexico is to avoid dumping the sediment in the Missouri River.

How MUCH phosphorus?

- On page 78 of the PIR, the Corps says the soil they want to dump in the Missouri River is 492 ppm Phosphorus (P).
- To put that in perspective, the EPA Task Force on Hypoxia recommends that all municipalities limit their discharge to 0.03 ppm P.
- A hog lagoon effluent, by comparison, is less than 100 ppm P. Hog lagoons are not dumped into any river.

- Just the Jameson site will be 1.01 metric tons (2200 lbs) total phosphorus per day for 243 days.
- But that's only the first half. On page 3 of the PIR, it says the construction will remove 420,812 cubic yards and that erosion will take an addition 546,580 cubic yards.
- So the total phosphorus from Jameson is 564.49 metric tons (1,241,878 lbs.)

Phosphorus load of MO River

- Col. Roger Wilson of the Corps wrote a letter to Director Childers of MO DNR on April 28, 2008 regarding the Commission's order prohibiting putting topsoil in the river:
 - “If these topsoil conditions were to apply to all SWH construction, the total volume of material and fill associated with all SWH construction would amount to a 5-ft average spoil height over approximately 40,000 to 60,000 floodplain acres.
- 40,000 ac x 5 ft. = 548 MILLION TONS of SOIL

548 MILLION TONS of DUMPED SOIL

- At 492 ppm P, the phosphorus in that 548 million tons would be 269,616 tons of P.
- According to the EPA Science Advisory Board on Hypoxia, the annual load of all phosphorus going down the entire Missouri River Basin is 33,440 tons.
- Therefore, these SWH projects alone would account for the entire annual load of phosphorus of the entire Missouri River Basin for 8 to 12 years.

Just the beginning:

- Page 133 of Appendix F says SWH acreage already created is 3,443 acres. (25 ft. deep)
- Jameson is 30 acres. (Chute is 27 ac; 3 ac is backwater) 150 ac., 5 ft. deep
- But they plan to dig out up to a total of 19,565 acres. (25 ft. deep)
- **So this number is 97,825 acres, 5 ft. deep.** (Not just 40,000 like they told us 5 years ago.)

548 MILLION TONS of DUMPED SOIL

- According to a July 28, 2008 Associated Press article, USDA spends \$2 Billion a year on the Conservation Reserve Program to save an estimated 450 million tons of soil each year.
- The Corps is dumping more into the river than \$2 Billion saves.

We tax ourselves to save soil in Missouri

- Missouri citizens paid \$40.9 million dollars in 2007 for state soil and water conservation taxes.
- \$27 million dollars of that was to be matched by landowners who take advantage of cost share programs to keep soil out of their watersheds.
- \$6.9 million is allocated to be matched by landowners in counties along the Missouri River.

It is against the law.

- Sediment is a pollutant under the Missouri and Federal Clean Water Act.
- The Missouri River is not treated differently from any other river under the Clean Water Act to encourage higher sediment levels.
- I can't find any statute, act of Congress or appropriation that states as its purpose to restore the Missouri River to historic sediment conditions.

Citizens are being fined

- July 13, 2007
 - Article in STL Post-Dispatch reported that Berra Construction was fined \$590,000 by EPA for soil runoff
- Also in 2007
 - Wal-Mart construction fined \$400,000 plus for soil runoff from 2 acre parking lot
 - Home Depot settled for \$1.3 million for soil runoff at construction sites.

Government should not be allowed to do something that it declares is illegal for its citizens.

Another one

- On August 18, 2009, EPA announced a consent decree with Cooper Land Management.
- Using the same construction sediment penalty rate the EPA gave Cooper Land Development, Inc., the Corps would have to pay \$4.027 billion dollars for the 34 million metric tons they dump per year.
- At the time of the CWC order, we had 10 actions pending against citizens of Missouri for sediment into the Missouri River.

Do they have a permit?

- Numeric criteria have not been established for the Mississippi River or the Missouri River.
- EPA, nonetheless, gives permits with numeric limits. Often 1 ppm P or less.
- The Corps says they won't have to pay a fine and don't violate the law, because they don't have one of those permits.



A dredger eats away at the soil bank and the slurry is piped to the center of the Missouri River.



Rush Bottoms site: Slurry from dredger pumped 3500 feet to Missouri River



**Rush Bottoms site:
13,000 tons per day
Soil dumped into river**



The Corps
Stopped the Dirt Dumping!

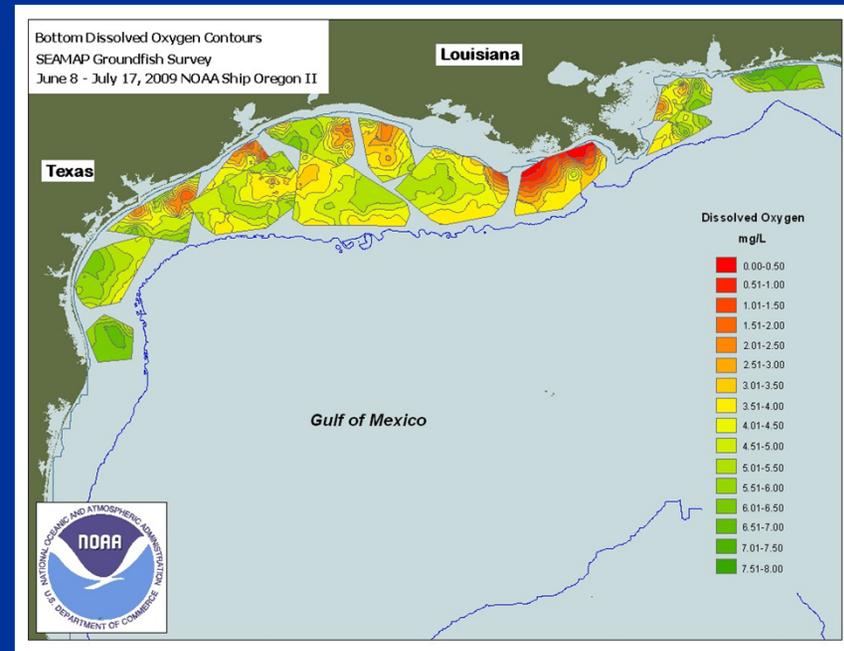
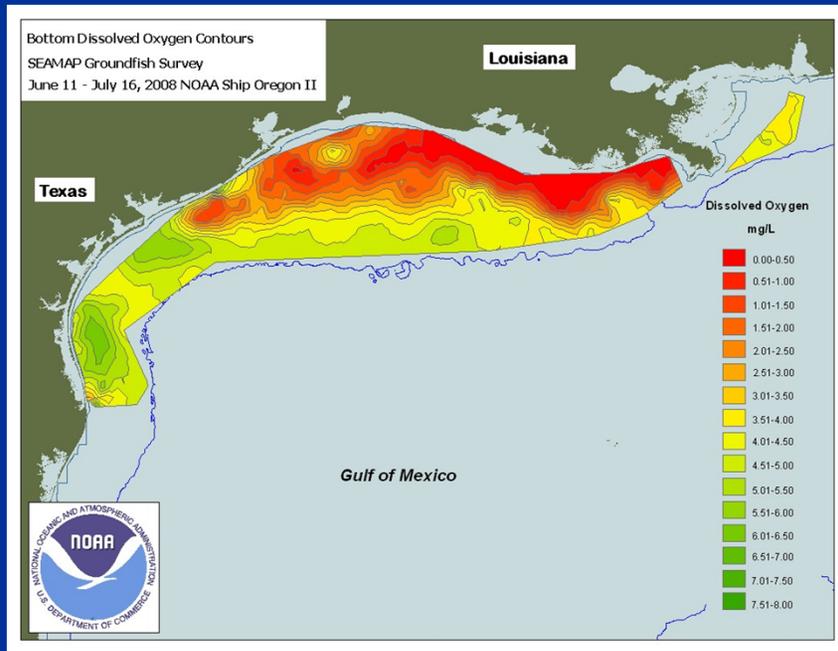
The Corps suspended the soil dumping in September of 2007 when the Missouri Clean Water Commission issued an order to stop the dumping.

The Corps said that they would do so pending a study by the National Academy of Science.

Hypoxia in the Gulf

2008

2009



Recent measurements by scientists found that the dead zone measured 3,000 square miles this summer, much smaller than the expected size of between 7,450 and 8,456 square miles predicted in the annual forecast.

Despite two very wet years with very similar weather patterns, the hypoxia problem, which had been predicted to get worse, actually got better....

What caused that?

What was the effect
of halting the dirt dumping
on the decrease in
hypoxia?

National Academy of Science Review

The Corps commissioned a \$658,000 review by the National Research Council (NRC) Committee on Missouri River Recovery and Associated Sediment Management Issues.

Four meetings were held in fall 08, January 09, April 09 and in October 09 .

The Missouri Clean Water Commission requested that prior to such an NAS review, the Corps should obtain a statement from EPA that this dumping does not violate the Clean Water Act.

The EPA would not make any such statements nor would EPA get involved in any of the NAS meetings. Finally they had one speaker from EPA.

The Corps said they would have a speaker from EPA at the last meeting in Kansas City.

When asked about nutrients, the EPA speaker said that he could not comment. He said “That is above my pay-grade.” Then he added “The bottom line is that we are not going to let the Clean Water Act impede these projects.”

The Commission sent a letter to the acting head of Region 7 EPA and asked what that meant. He answered that the spokesman was there “to only discuss the nutrient criteria process.”

Corps
National Academy
of Science Report

p.95 and 105:

The Missouri River contributes about 20% of the phosphorus load to the Gulf.

The Corps projects contribute 6-12% of the phosphorus load to the Gulf.

So the Corps projects contribute somewhere between 30 to 60 % of the entire load on the Missouri River.

p. 99:

The Corps loading (12%) is small compared to current loads and unlikely to influence the extent of the hypoxic zone.

BUT....

p.99:

Increases in nutrient loads from any source, including that associated with sediment discharges from the mitigation and restoration projects, may have to be avoided or mitigated.

Someone is going to have to make up for what the Corps puts in the River.

Remember the EPA guy?

EPA's NAS Report

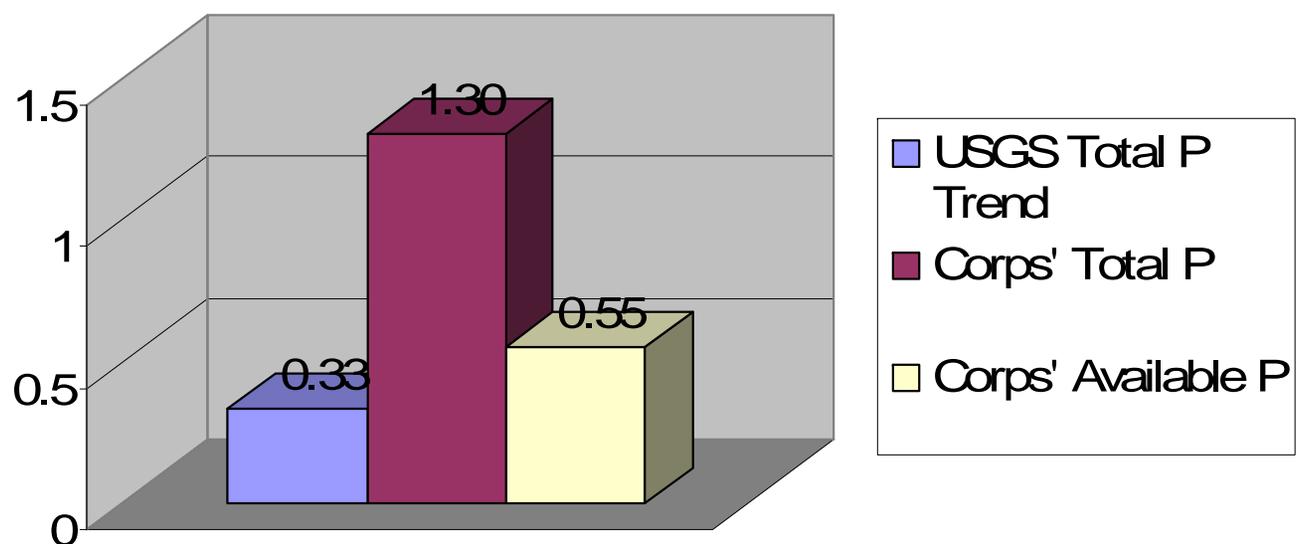
Two weeks after the Corps report, EPA published a NAS report:

“Improving Water Quality in the Mississippi River Basin and Northern Gulf of Mexico: Strategies and Priorities.”

- Same NAS director as the Corps report.
- “The nutrient pollution from thousands of farms and municipalities across the Mississippi River Basin has significant environmental consequences in northern Gulf of Mexico.”
- No mention of the Corps contribution.

Testing...Testing...

Mo. River Phosphorus Results ppm



THE CORPS' READINGS AT THE CHUTE SITES WERE 4 TIMES THE TREND LEVELS BY USGS.

Elutriate analysis (p.7 Appendix E)

- The elutriate is prepared by sub sampling approximately 1 L of the dredged material from the well mixed original sample. The dredged material and unfiltered water are then combined in a sediment-to-water ratio of 1:4 on a volume basis...Then mixed for 30 minutes and then allowed to settle. The supernatant is then siphoned off without disturbing the settled material and centrifuged (2,000 RPM for 30 minutes until clear) to remove particulates PRIOR to chemical analysis.
- Appendix E, p. 11: Method : N/A

Lab Demo

What to do

- Putting the soil into the water is not necessary for the SWH construction or success
- It does violate
 - A valid order from the CWC
 - Missouri Nationwide Permit general conditions
 - The anti-degradation regulations of Missouri
- Alternate 3 of the PIR allows the construction to continue and complies with all the above.

Corps opposition to Alternate 3

- The Corps objection to Alternate 3 is that it cost more to dig the soil all up, rather than to have half of it erode down the river.
- Just like anyone else in Missouri, they should have to land apply ALL the soil.
- I suggest that you require annual measurements of the bank to check for erosion.
- And require non-elutriate chemical analysis testing at the exit of the chute.

Monitoring

- The Corps NAS report (p. 11)

Said that the Corps should be subjected to monitoring requirements for sediment physical and chemical characteristics.

There is no evidence of testing beyond that which the CWC required in 2007 at Jameson.

Sediment in the gulf is a problem

- How do we make things better?
- Note the channels



South Pass



Take the soil out of the river and put in on the
land

BOBBY JINDAL
GOVERNOR



SCOTT A. ANGELLE
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF THE SECRETARY

November 23, 2009

The Honorable Gary Locke
Secretary
U.S. Department of Commerce
1401 Constitution Ave., NW
Washington, DC 20230

Re: U.S. Army Corps of Engineers, New Orleans Districts'
Recent Consistency Determination for Dredging
Activities on the Lower Mississippi River

Dear Secretary Locke:

The State of Louisiana has objected to and continues to object to the plan as proposed by the Corps because of the failure of the NOD to provide for beneficial use of dredge material as required by Louisiana's federally-approved coastal program, because the current disposal practices are environmentally unsound and inconsistent with Louisiana's federally-approved program and because of the plan's failure to implement the provisions of the Corps' federal standard provisions regarding the disposal of dredged material resources. For these reasons, the proposed plan does not meet the mandatory requirements of the Coastal Zone Management Act of 1972 ("CZMA") and the implementing regulations regarding consistency, specifically 15 C.F.R. 932.32.

- Does it make sense for the Federal Gov't. to borrow money from the communist Chinese to buy your neighbor's land, dig it up, dump it in the river and say that agriculture is polluting the Gulf of Mexico?



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