MSAC
2015 Progress/Accomplishments
The MSAC Mission is to educate the public and promote the intelligent use of all available programs and funds to alleviate the sedimentation-caused problems of the Missouri River main-stem reservoirs.
Missouri Sedimentation Action Coalition www.msaconline.com

Grant funding assists in continued research on Lewis and Clark Lake delta

Information may provide insight on which areas may be better for sediment removal

Getting a better picture of the dynamics of sediment deposition and what is living throughout the delta in Lewis and Clark Lake is the focus of a study in progress by the Missouri River Institute (MRI) and the Missouri Sedimentation Action Coalition (MSAC)

MSAC hopes the information will illustrate which areas may be better for sediment removal, as well as where watershed management would be most beneficial to reducing sediment input to the delta. The study portion of the project is expected to be completed by June of 2016. Public education - also part of the project - will be ongoing up until June and beyond. Funding for the approximately $27,000 project is being funded in part with a $10,000 grant from the 319 Information Minigrant Program. One objective of the 319 Information Minigrant Program, administered by the SD Discovery Center in Pierre, is to promote watershed protection to adult and community audiences.

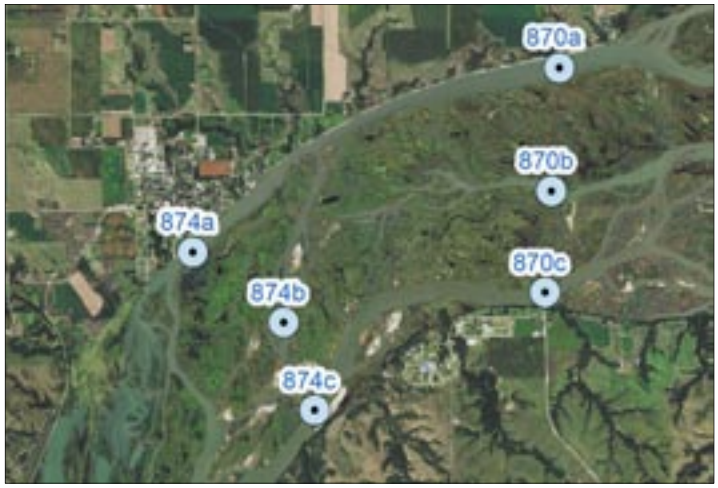
"Detecting characteristics of the Lewis and Clark Lake Delta will provide insight into the watersheds feeding the reservoir. Watershed protection and water quality are very important to those living on and along the Missouri River," said Sandy Stockholm, MSAC executive director. "Reducing the amount of sediment entering Lewis and Clark Lake will lengthen the reservoir's lifespan and benefit water quality. Having another look at the sources of sediment coming in can help focus efforts at reduction."

The MRI research focuses on two goals: characterizing the sedimentation, vegetation, and macroinvertebrate composition of the Missouri River at the Lewis and Clark Lake delta and determining the sources of sediment contributing to the delta by evaluating suspended load measurements of the Missouri River and nearby tributaries, and composition of sand in the delta area.

MRI conducted field work in July of 2015. Vegetation surveys were conducted to determine vegetation types on bars within the delta area. Macroinvertebrate samples were collected at the shorelines of bars within the delta. Vegetation and macroinvertebrate types will provide some information on species diversity in the delta area.

MRI staff collected suspended load samples from major tributaries on May 19 and July 22, 2015. They sampled Bazile Creek, Verdigre Creek, Ponca Creek, Choteau Creek, and Emanuel Creek. The Niobrara River was sampled at three locations: the Railroad Bridge in Niobrara State Park, Redbird, and near the Verdel gaging station.

In addition, staff collected sand samples from the Niobrara River for particle size and compositional analysis.



Top: Some of the delta sampling sites **Bottom Left:** Researchers sampling in the delta **Bottom Right:** Researchers surveying vegetation on delta sandbars

"Knowing the link between flow dynamics, sediment type and biologic diversity may also provide insight regarding potential areas of sediment removal in the delta that may improve environmental conditions in the delta region where sediment aggradation has been a continuing problem," according to the MRI scope of work for the project.

The overall goals of the project also include a public education effort. MSAC has coordinated aerial photography including drone video footage with more planned. The project fuels MSAC's mission of alerting the public to continued sedimentation accumulation problems in the Missouri River reservoirs.

This marks the second river research project conducted by MRI for MSAC. The first focused on illustrating the past, present and future of sediment accumulation in Lewis and Clark Lake and also received funding from a 319 Information Minigrant. Learn more by visiting www.msaconline.com.

"We appreciate the ability of MRI to expand the knowledge base surrounding sediment in Lewis and Clark Lake along with the public education that results from gaining these insights," Stockholm said.

Friends of the River

Since 2001, MSAC has recognized four individuals and one organization as Friends of the River. On March 31, 2015, MSAC recognized the late Rayder Swanson of Niobrara, for his dedication to river issues, including sedimentation. He was a founding member of the Lewis and Clark South Dakota Preservation Association, a group that was instrumental in drawing the attention of elected officials to sedimentation issues in the area. At the time of Swanson's death, he was serving as a Director for the Board of the Missouri Sedimentation Action Coalition, and as District 2 Supervisor on the Knox County Board where he began serving in 2001.

Past recipients of "Friend of the River"

Patrick Callahan, of Oahe TV in Pierre

the late Tony Dean, outdoors broadcaster & conservationist

Howard Paul, MSAC's first Executive Director (12 years)

Missouri River Energy Services, of Sioux Falls

Top: Kim Swanson, right, widow of Rayder Swanson, accepted the Friend of the River recognition on behalf of her husband Rayder at MSAC's annual meeting March 31, 2015. MSAC President Larry Weiss and Vice President Mary Hurd make the presentation.

Could Lewis and Clark Lake delta sand be suitable as a proppant?

Nebraska Water Science Center study takes a closer look at the properties of delta and Niobrara River sediment

Determining whether sand coming from the Nebraska Sandhills into the Lewis and Clark Lake reservoir delta is suitable as a proppant is the subject of a study being conducted by the USGS - Nebraska Water Science Center (NEWSC) in Lincoln.

Proppants are used in unconventional oil and gas wells that receive hydraulic fracturing (fracking) treatment. Proppants are small particles that are part of the fracking fluid mixture injected into a well to hold open the fractures created during the hydraulic fracturing process.

MSAC and the public heard from NEWSC staff concerning this study and other river research at the 2015 MSAC Annual Meeting in Niobrara on March 31.

According to NEWSC publications, providing dredged sand to fracking companies could allow dredging to become a more economically feasible sediment management approach for the US Army Corps of Engineers while also providing a source of proppant that may be geographically closer than other sources.

NEWSC had three core tasks in the study: 1) coordination with stakeholders/agencies, 2) sample collection and processing and 3) evaluating the results. Lake delta deposits will be compared with upstream sources. Sampling included 24 sites on the lake delta along with six taken behind the Spencer Dam impoundment, 10 from channel bars of the lower Niobrara River and 10 from streambeds of tributaries to the lower Niobrara River. Results will be compared with the minimum requirements and preferred values for proppant. The Montana Tech Proppant Research Group evaluates particle-size distribution, bulk density, sphericity, roundness and crush resistance.

Study results are expected by June 30, 2016.

MSAC continues education efforts in 2015 and looks ahead to 2016

MSAC to move office to Yankton in February 2016

In 2015, MSAC expanded its library of aerial images of Lewis and Clark sedimentation via photographs taken from an airplane and video footage from a drone.

The aerial photos were taken in October and several are posted at www.msaconline.com with more to come in the near future. In addition, to photos in the Springfield area, Sandy Stockholm, executive director, also took aerial photos near the Spencer Dam area on the Niobrara River.

Plans for the drone footage, taken by a Yankton firm, were somewhat hampered by the weather in November, so locations and time were reduced with plans to go out again in the spring of 2016. Look for this preliminary footage to be part of a short video to be released on the Web in 2016.

People continue to view MSAC's videos on YouTube with 1,400 views logged, an increase of nearly 400 from last year.

Along with other updates, MSAC enhanced its website with a feed from the US Army Corps of Engineers website featuring recreation and public notice news.

MSAC is moving its office to 100 Douglas Street, Suite 103, in Yankton in February. Contact information will remain the same.
By mail: PO Box 2, Springfield, SD 57062
By phone: 605-661-1594
By email: msaconline@gmail.com or sandrak@gwtc.net

PO Box 2
Springfield, SD 57062
605-661-1594
www.msaconline.com

MSAC