

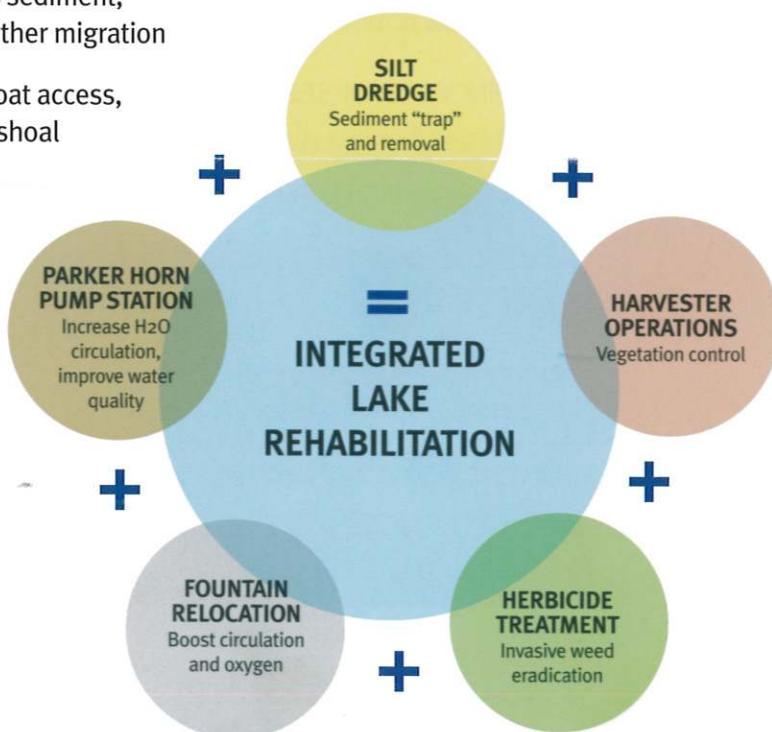
Answers to questions about Moses Lake rehabilitation projects

WHAT ARE THE CUMULATIVE BENEFITS OF DISTRICT PROJECTS NOW UNDERWAY?

After six years, using sound science and the required permits, all District projects are consistent with state-approved lake management plans. Every staff operation and all projects are designed and integrated to rehabilitate the lake. Though certainly not the entire picture, here's a simple overview.

CUMULATIVE BENEFITS:

- Eliminates algae, bad smell
- Restores water quality
- Protects property values
- Eradicates invasive aquatic plants
- Captures sediment, stops further migration
- Opens boat access, reduces shoal build-up
- Improves shoreline, fish and wildlife habitats
- Increases water storage and overall health of Moses Lake
- Supports vital recreation and tourism



INSIDE:

- Thanks LDS!
- Accomplishments
- Property Values
- New Grant Funds
- Treatment Map
- Invasive Aquatic Plants
- Dredging Update

PUBLIC NOTICE:

MLIRD RATE PAYER / DIRECTOR ELECTION

Tuesday, December 13
1:00-8:00 p.m.

Polling Station:
Five Corners
211 N. Elder St.
Moses Lake WA



THANKS, LDS! 379+ VOLUNTEERS DONATE WORK ON NEW RECREATION FACILITY ENTRY ROAD

District staff recently engineered and built a new entrance road at the 125 acre recreation facility on Moses Lake. With a wonderful show of support, 38 trees, 428 native plants and 20,000 square feet of sod were installed in September. On behalf of all MLIRD rate payers, we gratefully express sincere thanks to the Moses Lake Stake of the Church of Jesus Christ of Latter-Day Saints.

Over 379 volunteers from ten LDS congregations were present on a Saturday in September following two days of hard work by youth and men who moved rocks and laid out irrigation pipe. The visuals are a lasting legacy for a recreation facility that originally served Airmen during and after WW II, until purchase was completed in 1980.

"In honor of 9/11 and in appreciation for the many recreation and economic benefits MLIRD provides, we organized our membership to help beautify this fabulous facility as a way of giving back to our community."

Chris Bowes,
LDS Project Leader



"What a remarkable gift! We're blessed with more volunteers every year which helps our small staff save money and keep assessments from rising with inflation."

Curt Carpenter,
General Manager, MLIRD

For more volunteering opportunities, www.mlird.org

Banner year of accomplishments:

What has been accomplished?

Once again, with no rate payer increase, lake rehabilitation projects remain on schedule while the district earned two grants, a new Department of Natural Resources (DNR) contract and staff praise for effective emergency response.

MILESTONES

- ✓ Vision 20/20 Award – projects/economic benefits
- ✓ \$75,000 grant – Moses Lake aquatic herbicide applications
- ✓ \$115,000 DNR management contract
- ✓ \$75,000 grant – Upper Lakes Invasive Plants
- ✓ Ribbon cutting – Moses Lake dredging begins
- ✓ Completed inter-agency Watershed Management Plan - upper lakes
- ✓ Re-built Parker Horn Pump Station
- ✓ New Connelly Park road entrance and volunteer landscaping
- ✓ Second year milfoil and noxious plant treatments
- ✓ Repair Fish Gates at Pelican Horn Rail Crossing
- ✓ Moses Lake Fountain – upgrade and re-locate
- ✓ Airmen's Beach Memorial Dedication
- ✓ Four "Lake Forum" public panel discussions

EMERGENCY RESPONSES

- ✓ Freeze and flooding at pump station
- ✓ Sabotage and sinking of dredge

FOR MORE DETAILS
AND EVENT CALENDAR:
WWW.MLIRD.ORG

How does water quality affect property values?

Research in Vermont shows invasive plants reduce shoreline owners property values over \$12,000 on infested lakes.

Bilay Adams, Lake Protection Manager, CLM, Liberty Lake, WA

Excerpt from Moses "The Lake" Forum, Nov. 14, 2011

Several studies provide strong evidence of just how much clear water can enhance the value of lakeshore property. According to "Water Quality Affects Property Prices: A Case Study of Selected Maine Lakes" (1996)*, an improvement of 3 feet in the depth of water clarity would result in \$11 to \$200 more per

foot of shoreline property, according to the study of 900 properties on 34 lakes. Likewise, declining water clarity caused real estate values to plummet by 10-15% in selling price.

In Colorado, housing prices were 32 % higher if located next to greenbelt buffers in 32 of 39 communities surveyed. California homes near stream restoration projects had 3-13 % higher property values than similar homes along un-restored streams.

Lakeshore property is under tremendous pressure from many factors: pollution, siltation, invasive plants, new development and other historic changes to the landscape. The value of properties nearest to the water will be affected most by decisions you make. If water quality declines, not only would the enjoyment of residents and visitors suffer, so would economic activity. Improving water quality tends to have the opposite effect. Clean lakes increase lakeshore property values, contribute to the economic status of entire communities, and add to intrinsic aesthetics. Thus, there are advantages to good water quality because total property value around a lake could increase or decrease by millions of dollars. Protecting water quality is plain common sense.

*Source: www.maine.gov/dep/

MOSES LAKE WATER QUALITY IMPROVEMENT



NEVER AGAIN!

Rate payer assessments pay for lake restoration projects and equipment to combat algae. The main weapons used to keep algae from re-infesting Moses Lake are the re-built Parker Horn pump Station (water volume circulation), the re-built and repositioned Fountain (Oxygen boost), and the dredge to remove silt and nutrient accumulation.

HOW MUCH OUTSIDE MONEY SUPPORTS THESE PROJECTS?

The District has acquired over \$265,000 in cash grants this year, plus approximately \$60,000 of in-kind services from Department of Natural Resources (DNR). Rate payer budget savings top \$325,000. That total comes in a \$115,000 contract with DNR to manage a joint effort with the Weed Board, plus two (2) Department of Ecology grants of \$75,000 each. One is exclusively for treatments in Moses Lake. The second is to stop invasive plants before spreading from the "upper lakes," Park Lake through Soap Lake.

Rate payer budget savings top \$325,000



"Congratulations MLIRD on the new contract and for successful invasive shoreline aquatic plant treatment in Moses Lake this season. Expanding upon this to include the Grand Coulee Waterway deserves special recognition for your staff, Grant County Weed Board and your contractor, Lakeland Restoration Services. DNR is pleased to donate additional staff and equipment time."

Todd Palzer, DNR, Aquatic Invasive Species Program Manager

MOSES LAKE

6,800 acres of water and
130 miles of shoreline



KEY

Invasive Aquatic Weed Treatments

2011

- Tree of Heaven
- Purple Loosestrife
- Phragmites
- Yellow Iris
- Eurasian WaterMlfoil

2010

- Yellow Iris, Phragmites, Purple Loosestrife, Tree of Heaven
- Eurasian WaterMlfoil



Curly Leaf



Milfoil



Elodia



Coontail



Sago

Talking about Moses Lake at national conference on lake management

David Kluttz, Lakeland Restoration Services , Oct. 27, 2011

While surrounded in Spokane by lake management pros, agency reps and consultants from all over the world, it's no surprise people are talking about the success of Moses Lake rehabilitation projects. It's the most aggressive aquatic program in Washington State! I'm reminded of the hurdles and knowledge needed to navigate from plans to permits to results. The conference topics are staggering.

(*)

My firm improves lake habitats using herbicides to control unwanted plants. I first met with Curt Carpenter [MLIRD general manager] in 2008, to help survey native and invasive plants. The District board had set a budget; Curt had applied for grant money and begun the task of permitting, survey, analysis and public notices. Yup, all part of cleaning up Moses Lake. Three years later, sediment is also being removed. Another huge step, but work remains.

MLIRD attacked the heaviest infestations first, then near shorelines to protect home values and the recreation economy. Today, 650 acres of Eurasian water milfoil are gone and 130 miles of shoreline have been treated twice for nasty plants like Phragmites, Yellow flag Iris, Tree of Heaven and Salt Cedar. Next up, Curly Leaf and other "pondweeds"

Results are truly impressive, though often hard to "see" on such a big lake, even for pros. Lakes are not swimming pools! Moses Lake is a complex, living environment with strict laws to protect every species, but public health above all. Sometimes it's difficult to keep everything in perspective, but let's count our blessings. Beautiful Moses Lake is coming back!

* Algae, Phosphorous loading, Invasive species, Hypomaniac Aeration, Paleolimology, Alum, Stewardship, Mercury, Zooplankton, Cyanobacteria. Fish habitat, Mussels, Hydroacustics, Anthropogenic impact assessments. Plus remote sensing, climate, weevils, data analysis, sewers, shoreline restoration, oxygen levels, sediment. OMG!!

WELCOME LAGUNA AND COVE WEST

Thanks to the property owners who joined the district during the County's recent boundary line adjustment process. Your support pays for irrigation water and helps with lake restoration projects and maintenance of the District's recreation facility at Connelly Park.

IS OUR "ONCE-DYING" LAKE GETTING BETTER?

Yes! Plans are on schedule. Even with 85% success controlling Milfoil after just 2 years, rehabilitating Moses Lake also obligates District staff to attack all lake problems with a science-based battery of "integrated" projects, treatments, and state-approved Best Management Practices. Plan achievements this year include:

- Expand treatments: 650 Milfoil acres + all shoreline noxious weeds
- Began dredging to trap and remove silt, stop further migration
- Implement more efficient, time-saving Harvester program
- Increase oxygen levels with higher volume Fountain pump
- Controlled water circulation now runs longer into the growing season
- Upgrade Parker Horn pump equipment - more effective, saves energy
- Bi-weekly water quality tests track project effectiveness

Milfoil control has been extremely successful. Annual surveys will continue in 2012 to evaluate all aquatic plant locations, because Milfoil is only one of several plants that impede or block boat traffic.

Surveys help adjust the management plan to restore lake health and improve boat access throughout 6,800 acre Moses Lake.

Find out more at www.mlird.org.

**FOR MORE INFO:
WWW.MLIRD.ORG**



**COMMENTS FROM THE
BOARD OF DIRECTORS**

“Over the last few years, all operations have dramatically improved; from scatter-shot ideas, expensive sub-contracts and leased gear, to professional management, district-owned equipment assets and successful lake rehabilitation projects that benefit our entire community.”

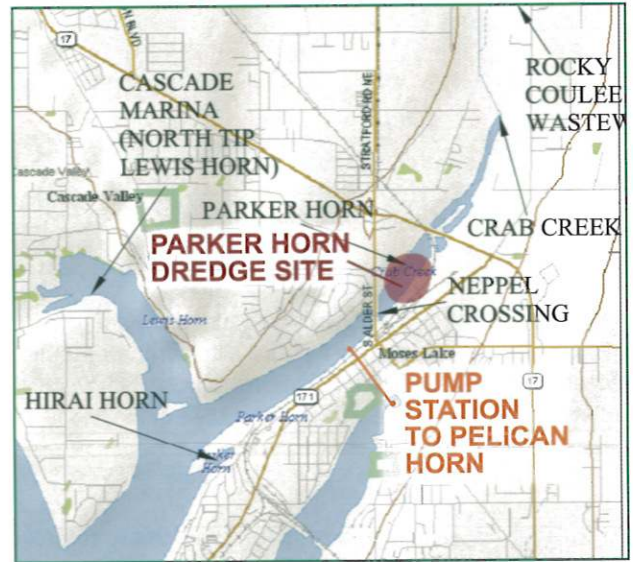
Norm Benson

“After less than a year, learning more each month about the sophisticated efforts underway to restore Moses Lake, I’m confident of the District’s financial integrity and deeply impressed by the professional execution of all management and staff operations.”

**Ron Covey,
Chairman**

HOW DOES THE DREDGE IN PARKER HORN HELP WITH NOXIOUS PLANTS?

Plants thrive on the vast amounts of sediment and nutrient-rich “soil” deposited over many years. It still flows into and settles throughout the lake each year. Until now, nothing worked to stop it. After years of wrangling for required permits, the dredge allows staff to “trap” and remove sediment before it can further degrade lake conditions. The Ellicott dredge began first in Parker Horn because the largest sediment volume enters from



the Crab Creek drainage. The dredge can be used in “boating areas” selected in the management plan. It can also create a non-vegetation area by dredging deeper than the 10-foot “littoral zone” where plant life begins and ends. To implement Best Management Practices, District staff must consider the entire habitat picture. Thus, sediment removal sites were chosen to protect both wildlife and aquatic habitats, and simultaneously improve access for human uses. Obviously, managing a living lake organism to protect and support people, animals and plants is complex, but that’s how “integrated” project-plans are “recovering” Moses Lake successfully.

“TO REMOVE SILT FROM MOSES LAKE, SUCTION DREDGING IS THE ONLY LEGAL PROCEDURE THE CORPS WILL ALLOW. I’M AMAZED HOW CLEAN THE PROJECT IN PARKER HORN IS PROCEEDING. OUTSTANDING WORK – A MODEL FOR OTHERS TO FOLLOW.”

Tim Erkel, Regulatory Branch, U.S. Army Corps of Engineers

“INSTEAD OF CHASING SEDIMENTS ALL OVER THE LAKE...TRAP IT IN ONE LOCATION WHERE IT’S EASY TO EXTRACT.”

Glenn Grette, Senior Biologist, Grette Engineering, Wenatchee

“CAT WORK OR “SCRAPING” THE LAKE BOTTOM IS 2-3 TIMES MORE EXPENSIVE, TAKES LONGER, AND USES MORE LABOR, FUEL AND TIME.”

Vladimir Shepsis, Engineer, Coast & Harbor Engineering

“THIS PROCESS IS MUCH MORE SELECTIVE THAN OTHER OPTIONS. THE IDEA IS TO MAINTAIN FISH AND WILDLIFE HABITAT AS YOU SEE IT...IMPACTS WILL BE NEUTRAL.”

Jeff Korth, Department of Fish & Wildlife

“THE DREDGE PROJECT WON’T RAISE TAXES, BUT WILL IMPROVE PROPERTY VALUES...HELP BRING DOLLARS AND PEOPLE INTO THE COMMUNITY FOR RECREATION. WE HAVE THE EQUIPMENT...STAFF DOES THE WORK.”

Curt Carpenter, District Manager, MLIRD

How much sediment has been removed from Parker Horn to date?



DESIGN AND PROJECT INTENT FOR 2011 WAS TO BUILD A SEDIMENT TRAP WITH THE HOLDING CAPACITY OF A MINIMUM OF 5,000 CUBIC YARDS IN SITU*. STAFF HAS REMOVED OVER 18,000** CUBIC YARDS OF SEDIMENT IN SITU THIS SEASON.

FIND OUT MORE ABOUT DREDGING AT WWW.MLIRD.ORG.

* *In Situ* definition: an archaeological term for situated in the original, natural, or existing place or position.

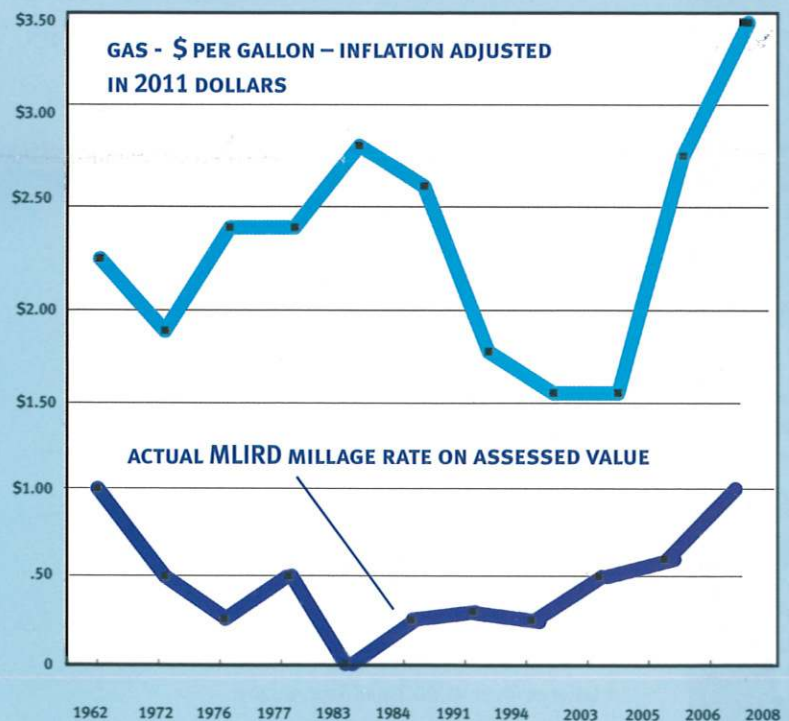
** Shrinkage factor of 1.8 to 2.3 due to varying materials found/removed.

WHAT'S NEXT FOR THE DREDGE?

District staff is actively working towards engineering and permitting for two other dredge projects. Phase II of Parker Horn, west of the pump station, and Drumheller Dam, a multi-agency collaboration to help pay for needed sediment removal work in the Rocky Ford area. Timing depends on permit requirements and the annual budget.

HOW DOES THE DISTRICT ASSESSMENT RATE COMPARE WITH INFLATION?

Since 1962, the millage rate has been comparatively stable, never more than \$1.00, while gas is nearly \$5.00 per gallon. The 1976-1984 millage rate, from .25 to .50 cents, helped pay for the first lake rehabilitation projects. Despite it being obvious that the (1980) Parker Horn Pump Station, by itself, was not eliminating algae or excess plant growth. When the board decided that better rehabilitation methods were needed, the rate has slowly returned to the 1962 rate of \$1.00 to pay for professional management, permits, new equipment, repairs, invasive plant treatments and dredge operations. Any reduction in rates now could again result in declining lake health and property values.





MOSES LAKE IRRIGATION & REHABILITATION DISTRICT
P O BOX 98 • MOSES LAKE, WA 98837
509-765-8716 • WWW.MLIRD.ORG

PRESORTED
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Spokane, WA
Permit No. 4

Was the District fined for the dredge sabotage and spill in Parker Horn?

NO! The most obvious reason is that District staff deployed according to their emergency plan and, “a rapid, aggressive and well-coordinated response,” according to Mark Layman, Response Supervisor, Dept. of Ecology.*

Containment spill booms were in place shortly after the deliberate damage was discovered. Law enforcement has yet to identify the culprits who apparently attacked on Sept.16, the same day Senior Officers of the 92nd Air Refueling Wing from Fairchild AFB were being honored during dedication of the Airmen’s Beach Memorial at the district’s recreation facility, Connelly Park.

The silt removal project quickly resumed and this year’s permitted dredge operations will finish on schedule. Beyond just containment and recovery of the fuel and oil loss, estimated at approximately 40 gallons, the District has proposed additional measures to insure total clean up.

Anyone with information about this nasty incident is asked to please contact the Sheriff’s office.

“DURING THE SPILL INCIDENT, IT WAS A PLEASURE WORKING WITH YOU AND YOUR STAFF. IT’S DURING EMERGENCIES WHEN GOOD TRAINING AND EFFECTIVE COMMUNICATIONS REALLY PAY OFF.”

MARK LAYMAN, RESPONSE SUPERVISOR, DEPT. OF ECOLOGY



Dredge site with spill containment boom in place.



* Letter on file at MLIRD, dated Sept. 30, 2011