

Craters of the Moon Water Reduction

EPA Federal Green Challenge Webinar
February 26, 2015

Presented by Dwayne Moates & Dan Buckley

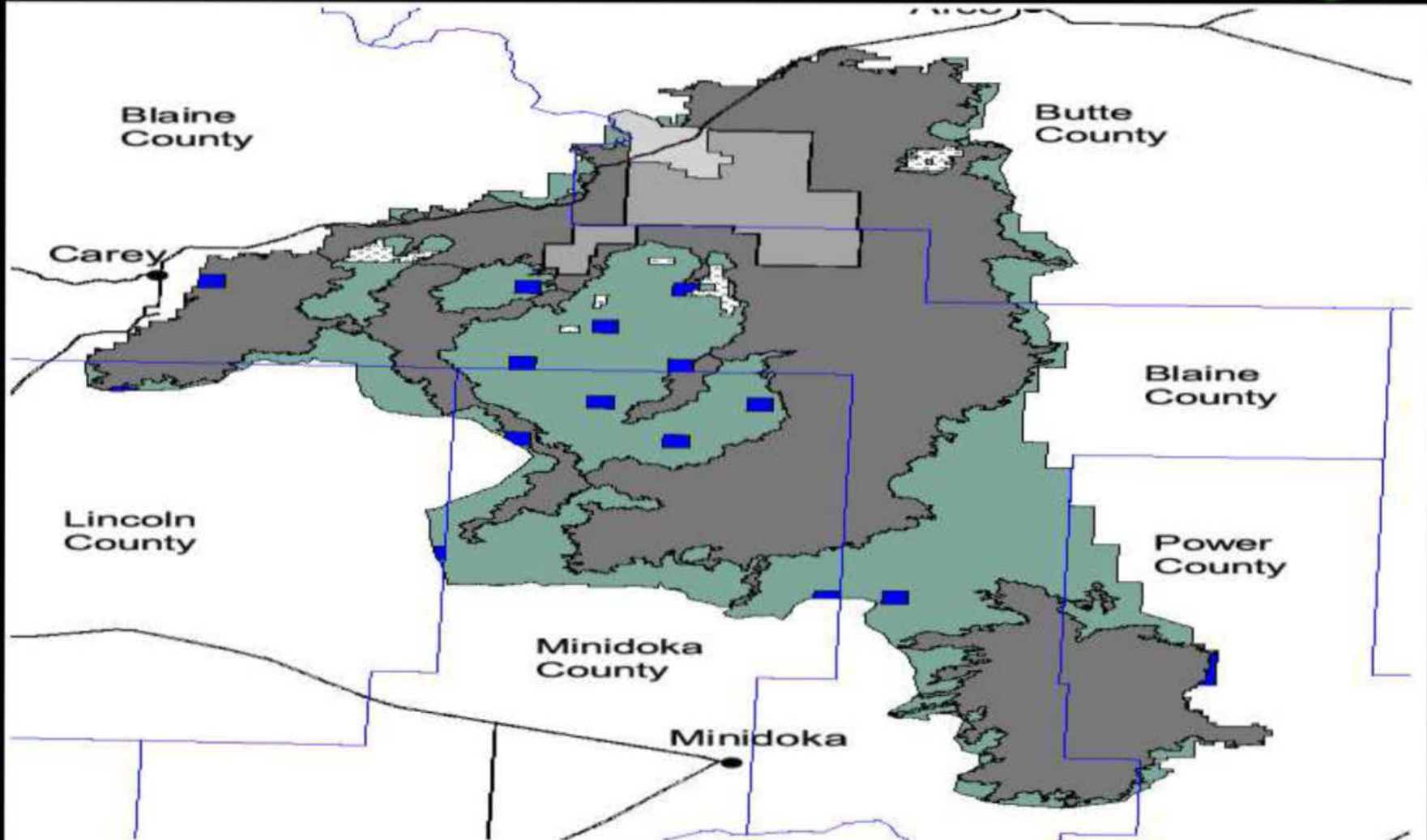
GREENING THE MOON

With less water....



Craters of the Moon National Monument and Preserve

National Park Service
U.S. Department of the Interior



Legend

Monument (BLM)	Private State
Preserve (NPS)	Idaho Courses
Wilderness (NPS)	Highways
Monument (NPS)	

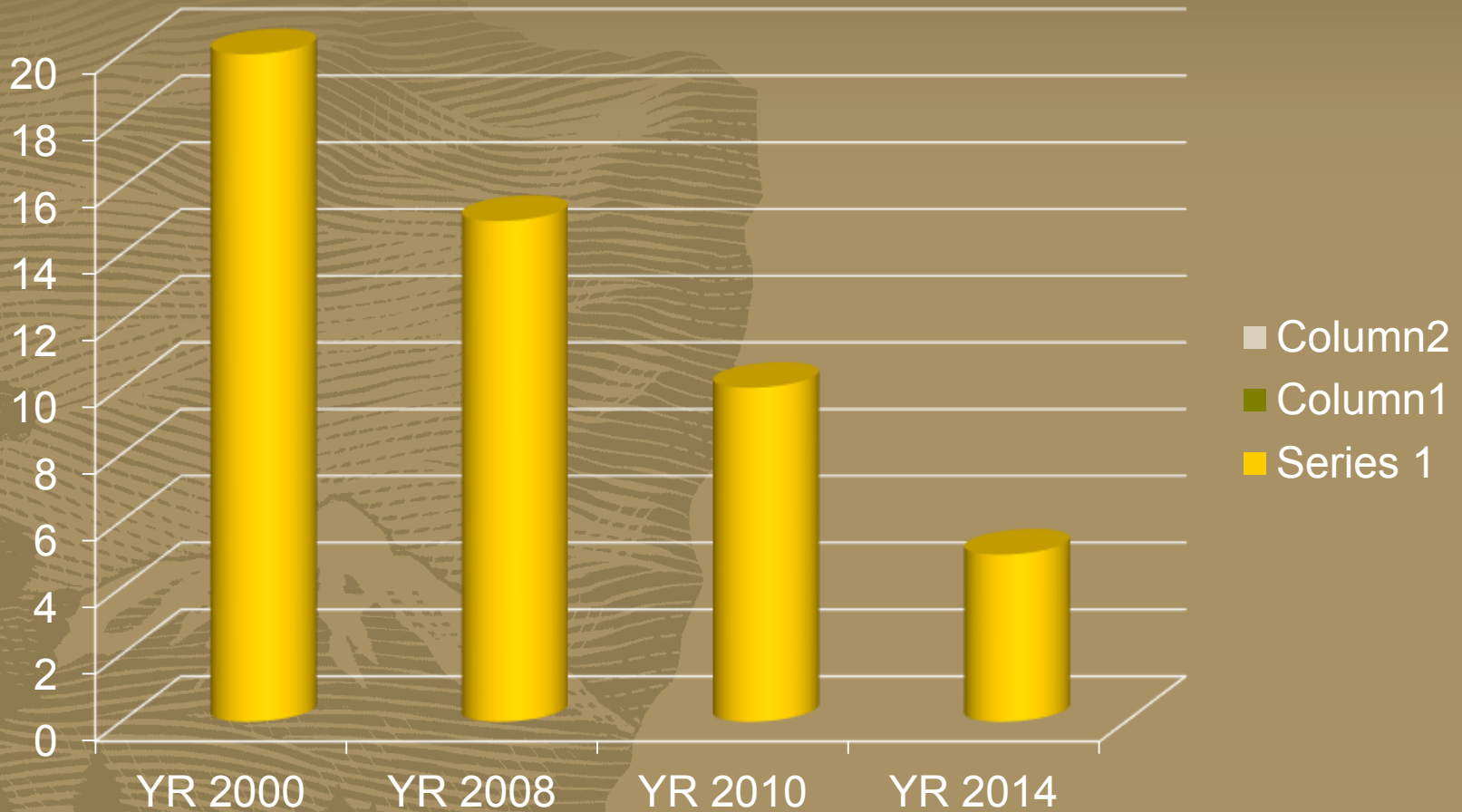


Craters of the Moon
National Monument & Preserve
Resource Office

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Water Gallons Per Minute Reduction



Get over it!

*“To understand the West, you have to **get over** the color green; you have to quit associating beauty with gardens and lawns...”*

Wallace Stegner

What was drinking up 80% of the water used in this park?

Lawns.

- Pl
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- La
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- La
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Xeriscaping

Went from this....



To this....



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Began to look at other measures....



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And reducing further....



- Auto-closing hydrants & faucets
- Energy & water efficient appliances
- Water conservation messaging to employees & visitors

Still, it wasn't enough....

- Replaced over two miles of water lines
- Repaired/replaced valves and drains
- Began to suspect underground reservoirs...50K and 100K capacity tanks



It took a while to figure it out....



- No spalling or cracks
- Lava made it difficult to see leaks outside
- Suspected a **drain** at the bottom of the tanks.....replaced that, but still had 8500 gallons a day leaking....

Eureka! We found it!

- While washing the tanks, a contractor discovered water sprayed on one side of a baffle wall was leaking to the other side
- Still, no visible or obvious holes or cracks!
- Looking closer, tiny nearly microscopic holes in the concrete were detected.
- Not big holes, but many of them... any guesses how they got there?
- Rusted cable ties left in walls from the forming boards when the concrete tanks were built!
- 8500 gallons a day out numerous pinholes!

The Results?



- Tanks were sprayed with new polyurea liner
- Reduced peak season water demand by 10gpm. (from 20 gpm to 15 to 5 gpm)
- Reduced park water needs by 2/3rds
- 75% reduction overall with the other previous projects included

Won PNW EPA 2013 Federal Green Challenge Award for Water Reduction



- We expect to see even more water use reduction in 2015
- Saving electricity as pumps run less frequent
- Remember the desert? Aquifer level recharge has stabilized.
- Estimate 2015 water saved = 4 million gallons

Questions?



THANKS!

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Craters of the Moon

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www.crmo.nps.gov

208-527-1300



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