



MRSC is a research nonprofit that offers local government staff free, one-to-one consultation with legal and policy consultants. Below is a featured response to two such questions from John Carpita, MRSC Public Works Consultant. If you work for a city, county, or contracted special purpose district, Ask MRSC by calling 800-977-6553 or emailing AskMRSC@mrsc.org.

Doesn't That Get Your Goat!



Once in a while, I get a research request that appeals to my (admittedly) wry sense of humor. Many of you, I am sure, have heard of goats being used for vegetation (weed) control. Probably some of you have even contracted with goat herders for vegetation and weed removal services.

The question posed, by a small Washington city, was whether any agencies have established their own goat herds.

"Does any municipality have history with goat ownership, recommendations,

policies, advice? (How many to get, species, special vet needs, etc.)"

So, intrepid investigator that I am, I sent the request out to a very wonderful and responsive group of city/county engineers and public works directors across the state. I couldn't resist prefacing the request with: "I almost hesitate to send this one out, due to the high probability of goatesque jokes being generated." So, sure enough, among the really serious responses was a smattering of whimsy:

"I want to respond but don't want to be identified. Is it acceptable to keep my comments a-nanny-mous?"

John: I am looking for information on groups of goats

Duncan: Herd of Goats

John: Yeah, I have heard of goats!

Duncan: No, a goat herd

John: What do I care if a goat heard, I have no secrets to keep from a goat... (You so invited this...)



No thoughts about grooming a herd of our own – top hard to get the city logo to stick to their sides...

But seriously folks ...Why goats?

Well, they eat practically anything and everything, and can climb on rough or steep terrain very easily. They are an environmentally benign alternative to herbicides and/or gas-powered brush removal equipment, well suited for ecologically sensitive areas. A number of respondents said that their agencies had used goats for vegetation removal through companies that provide such services, but only one agency, a city, actually experimented with having their own herd. That city's public works director at the time recommended: "Have a professional goat herder rent them to you. This is a feel-good program and gets good press, but requires a lot of work for the return. We found that we could easily power through any vegetation in a few hours that would take days or weeks to complete with the two goats we used."

Chart: 2012 Annual Shoreline Pilot Program Cost per Square Foot

Service Type	Treatment Area	Cost per Square Foot
Animal	131,000 sq. ft.	\$0.17
Conventional	92,000 sq. ft.	\$0.25

What's on the menu?

Goats will eat: Blackberries; English Ivy; Japanese Knotweed; Common Tansy; Morning Glory; Leafy Spurge; Dalmatian Toadflax; Canada Thistle; Yellowstar Thistle; Knapweed (Diffuse, Spotted, Russian).

Keeping them off of ornamental shrubs can be a challenge, so these must be protected, for the sake of both plants and goats. Rhododendrons, particularly, are deadly to goats. Note that most goats prefer the plants listed above to grass-type plants, so you wouldn't use a goat herd for lawn mowing or grassy detention/retention ponds.

Craig Madsen, Healing Hooves LLC, points to the importance of taking care of the goats. Madsen uses portable electric fencing that's 35 inches tall with eight wires. That keeps his goats safe, as does surveying the area for poisonous plants before he goes in. "You have to know your plants," he says, adding that he's seen some locations "where you have to keep them out of certain areas." Even with the herder's vigilance, goats are at risk.

Ed Portnow, Earthcraft Services, related the sad tale of one site in Shoreline where a well-intentioned neighbor threw his rhododendron clippings over the fence. The entire herd was sickened and only intensive care by Ed and veterinarians kept them from dying.

Shoreline Pilot Project

The city of Shoreline, like many cities, has stormwater facilities scattered throughout the city. Some of these are surrounded by steep hillsides and otherwise inaccessible terrain. As a result, vegetation management is difficult. In 2011, Earthcraft Services and the city partnered in a pilot program to determine if the use of goats made economic and community relations sense.

Five sites were selected, with a variety of needs and conditions. An extensive community relations effort, with mailers and door-to-door visits with adjoining property owners, was made. Reaction was overwhelmingly positive. One person even emailed: "Pardon my language, but I have to put it this way: This is the #\$\$\$ing COOLEST THING THE CITY HAS EVER DONE!!!! You guys are brilliant! Love it!"

Physical and fiscal results were also positive. City of Shoreline Project Engineer Eric Gilmore noted in a recent presentation



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at the Spring APWA Conference that the level of service is at least similar to brush cutting on previously maintained sites. Four out of five sites showed savings on a square foot basis. Absolute costs were similar: \$22,365 (animal) vs. \$23,376 (conventional) per site, but with about 30% more area maintained.

Notes from other sources

Goats are not limited to Washington. A Wall Street Journal article (2010) notes that, "as more homeowners, businesses and towns seek to maintain land with fewer chemicals or fossil-fuel-powered machinery, a growing number are trying goats to get rid of unwanted vegetation. Internet rivals Google Inc. and Yahoo Inc. hired herds to clear around their Northern California headquarters this year."

Craig Madsen, Healing Hooves LLC notes that in heavily vegetated Western

Washington, goats will clear one to two acres in three days, while a herd will clear three to six acres in Eastern Washington in three days, all dependent on the amount of vegetation that needs to be removed. At \$800 to \$1,000 per day, many hire Craig's goats to do the initial cutback and then manage the remaining weeds in other ways. He also adds that goats are good for steeper slopes and sensitive areas where heavy equipment is not feasible. "The costs are in the transportation, labor and experience of the manager," said Madsen. "Costs also vary depending on any special complexities of the site – human and geographic."

Agency comments

Maple Valley (Ken Srilofung, Surface Water Management & NPDES Program Manager): "The city of Maple Valley has used goats to take of vegetation/weed including blackberry and scotch broom in the past

three years. The information is posted on our website."

Columbia County (Andrew Woods, Public Works Director): "We do not manage our own goat herd. However, we have contracted for levee maintenance. We have one company that we contract with through the small works roster. It has been very successful. The cost is about the same as chemical application. However, the community appreciates not applying the chemicals and the entertainment value of the goat herd cannot be measured. It turns into a mobile petting zoo a few weeks every year."

Other resources

Integrated Weed and Vegetation Control, MRSC webpage

Goats in Stormwater Facilities? APWA Presentation by Ed Portnow, Earthcraft Services and Eric Gilmore, City of Shoreline, April 2014

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