

Recreation Management

Tech Tips

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Two-Cubic-Yard Bearproof Dumpster

by

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BACKGROUND

The U. S. Department of Agriculture (USDA) Forest Service and other Federal agencies that provide recreation opportunities near bear habitats have experienced increased problems with bears raiding garbage dumpsters in campgrounds and other recreation facilities.

Increasing numbers of recreation users on national forest lands have contributed to the problem by increasing the volume of food waste at recreation sites such as campgrounds and picnic sites. In bear habitat areas, the increase of food waste becomes a powerful attractant to bears. Bears favor the different kinds of foods people eat—bacon, sausage, and canned fish, and especially sweets like candy, gum, and pancake syrup—over a healthier wildland diet.

The only way to keep bears away from food waste mixed in with the garbage is to bearproof the garbage containers. The most common dumpsters used in recreation areas are the frontload type that can vary in cubic yard capacity. Garbage dumpsters typically are designed for urban use where bears are not a problem. Urban-designed dumpsters are fabricated with light gauge steel and have flimsy lids made of very light gauge steel or premolded plastic. These materials are not designed to prohibit bears.

THE PROBLEM

In 1998, the San Gabriel River Ranger District (SGRRD) of the Angeles National Forest requested help from the San Dimas Technology and Development Center (SDTDC) to eliminate trash spillage and damage to dumpsters used along the San Gabriel River. Jerry Sirski, recreation officer, and Michael Hansen,

recreation assistant at the SGRRD, helped SDTDC develop the criteria needed to fabricate the bearproof dumpster. The SGRRD has an active bear population that frequents many recreation areas in the Angeles National Forest. The district uses 2-cubic-yard frontload dumpsters in the San Gabriel Canyon recreation area—an area where large numbers of visitors recreate each year. Bearproofing the existing dumpsters was a critical step in preventing the local bears from raiding the garbage dumpsters in campgrounds and picnic sites along the recreation corridor of the San Gabriel River.

The SGRRD had experienced problems with bears foraging for food and tipping over the garbage dumpsters in the parking areas along the canyon. The SGRRD also had a different type of problem: vandals rolling dumpsters into the riverbed to make room for more parking. Steel stakes and chains were used to restrain the dumpsters, but the stakes failed to keep the dumpsters in place.

A related problem was the amount of time spent to unlock and lock padlocks used to restrain the dumpsters on one or more stakes. The frontload dumpster truck driver had to get out of the vehicle, unlock the padlocks, and remove the chains that restrained the dumpster. After the driver adjusted the dumpster, it was picked up by the frontloader forks. The driver then exited the vehicle again to padlock the chains. This process was very time consuming.

Another problem was keeping the dumpster lids locked to prevent people from disposing of large items such as mattresses, motors, old furniture, and other large household items. Only a small (24-inch-by-24-inch) access door was available for garbage disposal by forest visitors.



THE SOLUTION: A BEARPROOF DUMPSTER

SDTDC worked with the SGRRD and Boxmaster, a metal fabrication company, to design and develop a bearproof dumpster to meet the needs of the USDA Forest Service. The bearproof dumpster is fabricated with 14 gauge steel with a peaked lid to repel rain and snow. It provides better access by tilting the door toward the users (see figure 1). The dumpster is fabricated in two parts—the bottom 2-cubic-yard box that holds the garbage and the lid that allows the garbage to be emptied into a garbage truck. The dumpster is mounted on two 2-inch-by-6-inch skids laid flat, which provides a strong and stable base. The dumpster is also closer to the ground for the convenience of the user.



Figure 1—Two-cubic-yard bearproof dumpster with access panel and sloped lid.



Figure 2—The self-locking gravity latch mechanism.



Figure 3—A frontloader refuse collection truck emptying a dumpster.



Figure 4—Dumpster being lifted off pipe stand. Pipe stand is set in concrete footings.



Figure 5—A dumpster being emptied after gravity latch releases hook.



Figure 7—A counterbalanced door allows easy lifting.



Figure 6—Bearproof latch on counterbalanced door. Note bear claw guard all around.



Figure 8—The pipe stand sheath.

The dumpster lid has a built-in gravity latch that keeps the top locked to the bottom until it is lifted by a frontload garbage truck and released for dumping (see figure 2). After the dumpster is emptied, the driver lowers the unit back onto a U-shaped pipe stand that locks the dumpster in place and prevents any movement (see figures 3, 4, and 5). Picking up the dumpster and emptying it into the garbage truck is done in one step while the driver is in the truck; the driver never has to leave the cab. The lid access door has a bearproof latch (see figure 6), and the door is rimmed with a continuous piece of round steel rod around the outside edge, which serves as a bear claw guard. The garbage access door is counterbalanced to meet accessibility guidelines (see figures 7 and 8).

TEST RESULTS

After 2 years of field use the dumpsters have proved to be bearproof and vandalproof. The dumpsters have saved time and money with a collection process that is fast and nonlabor intensive. Bearproofing these dumpsters will save bear lives today—and in the future—by keeping bears away from food brought in by visitors.

COST

The cost of a complete bearproof dumpster, including the pipe stand, is \$800, plus shipping. A retrofit lid for an existing 2-cubic-yard frontload dumpster is \$600 including installation of the lid, plus shipping. Discounts are offered for large quantities.

Contact Information

Contact Jerry Sirski and Mike Hansen at the SGRRD by phone at 626–335–1251, or contact Dexter Meadows at the SDTDC by phone at 909–599–1267 ext. 276.

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