

Carcass Management

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Carcass Management

- Overview
- Composting Options
- Field logistics of removing bison remains
- Cost estimates

Carcasses = Conflict

Morehouse & Boyce 2011 –
Alberta Study:

- 85% of wolf scavenging was at boneyards
- Wolves, grizzlies, and mountain lions all frequented boneyards



Carcasses = Conflict



Photo MT FWP - J. Jonkel

Grizzly scavenging at boneyards

- Can lead to depredation
- Safety hazard

Basic Carcass Management Process

- Carcass pick-up programs
- Transport to permanent carcass compost facility
- 4 to 6 month composting process
- Funding and in-kind contributions from multiple partners



Carcass Composting Facility, Granite County, MT



Carcass Composting Facility, Granite County, MT

- Approximately 400 carcasses annually
- Wildlife composted separately

What's In Those Piles?

Carbon to Nitrogen Ratio:

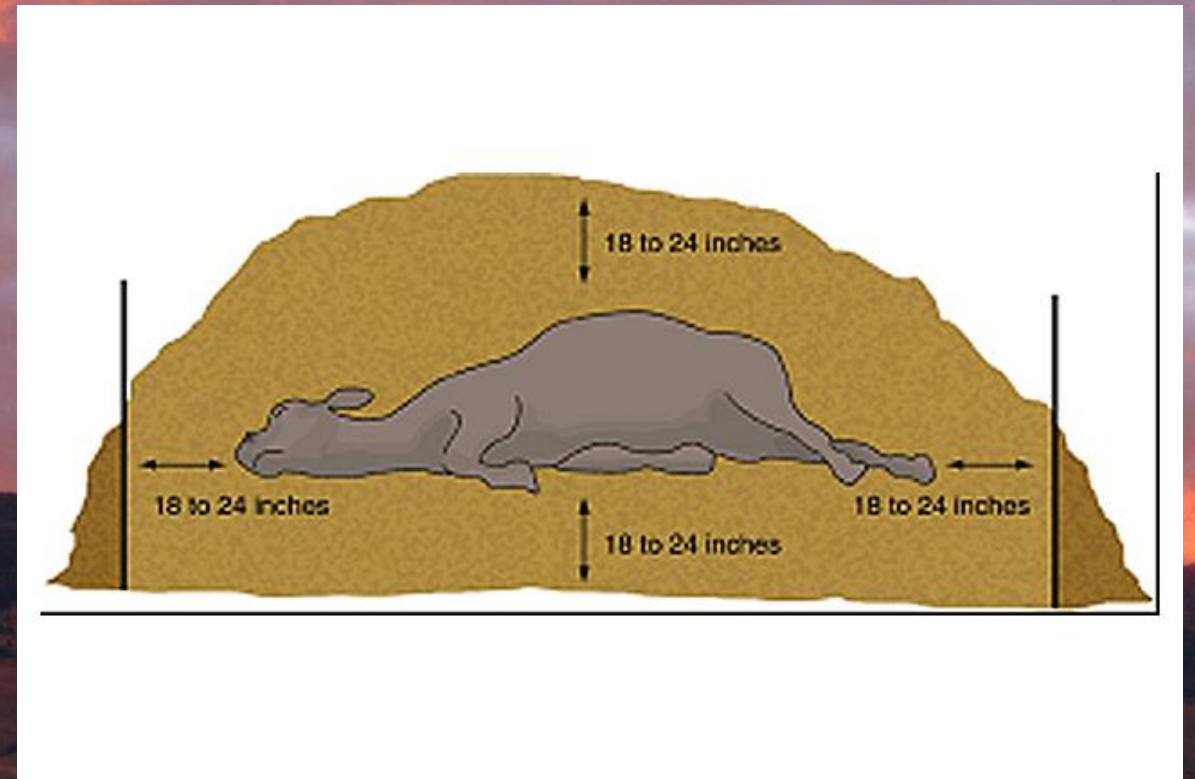
- **Between 15:1 and 40:1 C:N**
- Cattle Manure = 20:1
- Wood chips ~600:1
- Straw 127:1
- Hay ~ 25:1

Temperature: 100 to 150F

- **140 F reportedly kills Brucella**

Moisture content 40% to 60%

- **Test moisture by forming a ball of bulking material.**



Variation on Basic Process

Deadstock bins:

- Aggregate carcasses in remote locations for economical transport to composting facility
- Inaccessible to bears and other wildlife



Southwest Agricultural Initiatives

A carcass bin in
a field near Pincher
Creek is kept latched
to keep bears out.



Southwest Agricultural Initiatives

The side opening
of this bin makes
it easier to unload.



← 8 FT →



↑
4 FT
↓

← 12 FT →

10-Yard Dumpster

Modifications to Roll-Off Dumpster

- Bear resistant lid
- Lid hoisting mechanism (winch or hydraulic)
- Plastic liner to prevent freeze-down



Modifications to Roll-Off Dumpster

- Dumpster: \$4,500
- Modifications: \$2,000
- Earthen ramp: \$1,500
- **TOTAL: \$8,000**



Methods for moving bison remains to bins



Methods for moving bison remains



DIY
PolyMax
HMWPE

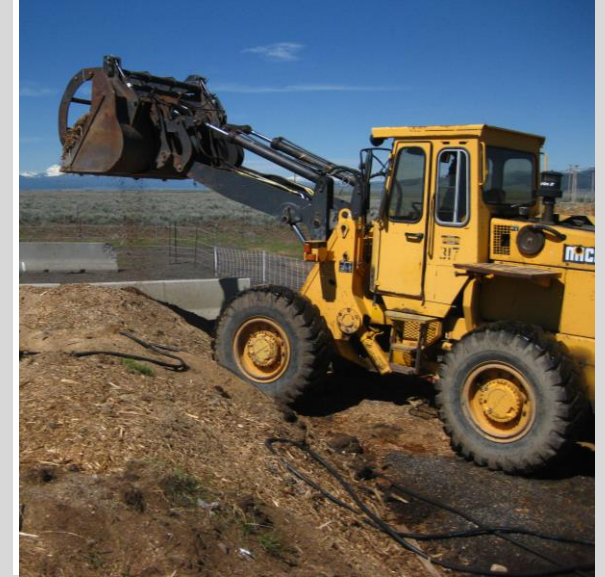
\$250

When bin is full,
hoist onto trailer
and transport to
composting
facility.



Permanent Composting Facility

- Electric fence
- Heavy equipment (loader, backhoe)
- Water source
- Knowledgeable staff to monitor and tend compost piles



Montana DEQ Requirements

- **300 feet from property lines**
- **500 feet from homes or businesses**
- **150 feet from drainage**
- **Site operating plan**

Costs of Permanent Facility

- Fence: \$5,000
- Well: > \$20,000
- Site preparation
- Heavy Equipment: Purchase, Rent, or Contract?
- Staff: time required for composting is minimal, but it's critical to have a committed person tending the site.



ALTERNATIVE: Modify Larger Roll-off Dumpster to Initiate Composting

- Lid & hoist
- Raised perforated floor to promote air flow
- Ventilation holes in lid & sides



Modify Larger Roll-off Dumpster to Initiate Composting

- Transport partially-composted carcasses to centralized permanent facility as needed
- Cost Projection: \$12,000



Funding & In-Kind Resources

- Big Hole, Granite County, & Blackfoot Valley: USFWS truck & fuel
- Montana Department of Transportation: Jersey barriers, use of sites and wells, site management in some locations
- Funding from various private foundations and donors
- Potential for low-cost heavy equipment through federal surplus



THE FRENCH KNIGHT'S GUIDE TO TREBUCHETS

1. Lower arm of trebuchet using pulley system (A). Weight (B) will raise arm (C) lever.
2. Load cow (D) to sling (E) and let struggle against cow's body. (Fig. A.)
3. Pull Trigger (F). Arm will rise as weight drops. Front end of sling will detach as arm angle spread opening sling, releasing cow, and swinging sling forward out of cow's path.
4. Your mother was a hammer and your father was of old Britain.

