



## STATE OF MAINE GUIDANCE FOR MUNICIPALITIES:

# NOTIFICATION, HANDLING, AND DISPOSAL PROCEDURES FOR MARINE ANIMAL CARCASSES

## NOTIFICATION PROCEDURES

Once you have located a marine animal mortality, you **must** first contact the Maine Marine Animal Reporting Hotline at 1-800-532-9551. This will put you in touch with either Marine Mammals of Maine (MMoME) which handles strandings and mortalities from Kittery to Rockland or the College of the Atlantic (COA) which handles strandings and mortalities north of Rockland. Next call Mark King of the Department of Environmental Protection (DEP) at 207-592-0455.

**Note:** It is **illegal** to touch, feed, or move a marine mammal that you find, including live and dead animals, prior to contacting the Maine Marine Animal Reporting Hotline. The stranding agency will then decide if someone will be sent to sample or examine the animal, or will ask the caller to send photos to document it. It is crucial that each animal is reported so that the National Oceanic and Atmospheric Administration (NOAA) has an accurate count and documentation of the animals.

## HANDLING MORTALITIES

Since it is possible for some diseases to be transmitted from infected animal carcasses to other animal species, including humans, the following steps are strongly recommended when handling the carcass of any animal that has the potential to be infected:

1. Whenever possible, use a shovel to pick up the carcass. If you must use your hands, use barrier protection such as heavy-duty rubber gloves. If at all possible, avoid touching any wet area on the carcass. However, if the gloves or shovel become wet with bodily fluids, allow them to dry before touching with bare hands.
2. Soiled clothing and work boots should be thoroughly cleaned and stored in a place where human and animal contact is unlikely.
3. If the gloves or shovel need to be disinfected immediately, use bleach or a bleach and water solution. Remember, however, that once bleach is mixed with water, it begins to become inactive and after 24 hours is no longer considered to be a proper disinfectant.

## DISPOSAL OF MARINE ANIMAL CARCASSES

This is the DEP's guidance regarding the disposal of marine animal carcasses. We strongly recommend that municipalities contact the DEP prior to implementing this guidance so that we can



provide technical assistance with the process.

**Background:** Animal carcasses that pose a physical, health or safety hazard should be removed and disposed of in an appropriate manner. Carcasses which may be associated with distemper, avian influenza or other potentially contagious diseases, should receive special consideration to avoid unreasonable contamination or exposure to humans or pets. The preferred method for carcass disposal is composting but shallow burial may be appropriate in certain cases. Additionally, in special cases where the carcass is hard to reach or extract, agricultural lime may be applied over the external surface of the carcass to help suppress odors, flies and to discourage scavenging animals as it decomposes (see Figure 1). Lime may need to be re-applied as it washes away. Animal carcasses should never be disposed of in trash cans or dumpsters. Appropriate disposal may be employed as outlined below.



Figure 1. Photos showing carcass before and after covering with lime.

**Composting:** The most common aboveground disposal practice is composting. Composting is a biological process in which microorganisms consume organic materials (carbon and nitrogen compounds) and produce compost - a nutrient-rich, humus-like end product. An active compost pile is a community of living organisms. Microbes require suitable amounts of moisture, carbon, nitrogen and unrestricted airflow in order to survive and multiply within a compost pile. Carcass composting is a variation of the basic composting process where the carcass itself provides nutrients and moisture to a composting pile. The goal of carcass composting is the rapid reduction of a carcass to material that is non-hazardous and may be used as soil enrichment without generating odors or leachate which could impact groundwater.

The carcass composting process is straightforward and easy to replicate virtually anywhere. If you need assistance with sourcing materials or pile construction, please call Mark King of the DEP.

1. The first step is to locate a suitable site on which to compost. Preferred areas include: moderately well-drained soils with a gentle 2-4% slope, contain at least 24 inches depth to the seasonal highwater table and 36 inches depth to bedrock. Sandy soils and heavy clay soils should be avoided. Additionally, marine mammal compost sites should never be located on a flood plain or over a sand and gravel aquifer. Compost sites should be located at least 200 feet from any of the following: water supply wells, mean high water mark, water bodies (ponds, lakes, streams, etc.), and any nearby residences.



- To begin pile construction, you must first lay down a “bed” of carbonaceous materials (horse bedding, wood shavings, sawdust, etc.), usually 18 to 24 inches in depth, and large enough to surround the entire carcass. It is always better to use a “biologically active” material such as fresh horse bedding as it gives you a jump start on the composting process. Additionally, this initial layer serves as a barrier to help absorb any liquids that are liberated by the carcass as it decomposes.
- Next, the carcass is placed on the center of the bed, making certain that none of the carcass extends beyond the edge. Carcasses must be vented in numerous locations to release trapped gasses and allow abdominal contents an opportunity to mix with compost ingredients.
- Carcasses should be covered with a minimum of 18 to 24 inches (additional cover material may be necessary on a case-by-case basis) of carbonaceous cover material to form a natural biofilter to eliminate odorous emissions and discourage attraction of scavenging animals. Once again, a biologically active material is preferred for covering carcasses. The finished pile should be conical in shape with steep sides to help shed precipitation (see Figure 2). Please contact Mark King of the DEP to schedule a site visit and inspection of the compost pile.

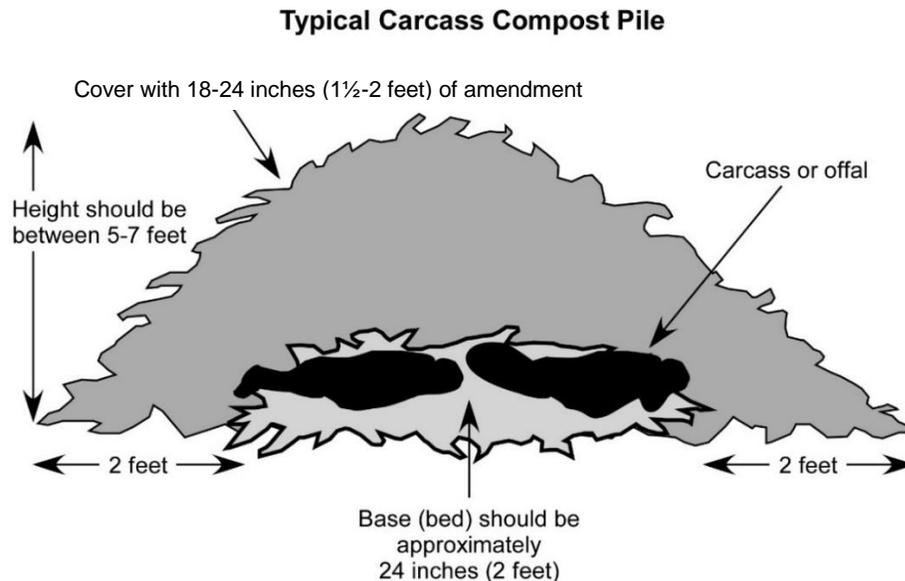


Figure 2. Graphic showing placement of carcass within compost pile.

- Management involves periodically checking piles to ensure that “cracks” have not formed in the bulking agent as the carcass continues to break down. These cracks become point sources for odor releases and initiation of scavenging activity. This is especially true during the first week, when carcasses initially discharge a large volume of fluids into the bulking agent, causing the body to collapse and fissures to form along the top edges of the compost pile. Any and all cracks may be repaired simply by using a hand rake or other tool to smooth over the disturbed areas, thus eliminating odor sources.



6. The carcass should be left to compost without turning for at least 3 months for small animals such as seals, and 3-6 months for larger animals such as whales. Composting times should be coordinated with Mark King of the DEP. The resultant compost should be used onsite, unless special arrangements are made with NOAA officials ahead of time.

**Shallow Burial:** This disposal method involves placing the carcass into the landscape to decompose naturally without attracting scavenging animals. Unlike traditional burial which may require deep excavations, this methodology involves only digging a 24-inch deep trench. Use the following methodology to develop a trench burial site:

1. Choose a proper site that has the following criteria: moderately well-drained soils with a gentle 2-4% slope, contain at least 24 inches depth to the seasonal highwater table and 36 inches depth to bedrock. Sandy soils and heavy clay soils should be avoided. Avoid areas located on flood plains or over sand and gravel aquifers. Similar to compost sites, shallow burial sites should be located at least 200 feet from any of the following: water supply wells, mean high water mark, water bodies (ponds, lakes, streams, etc.), and any nearby residences.
2. To begin a shallow burial site, you must dig a 24-inch deep trench (see Figure 3) that is at least as long and wide as the carcass itself. In some cases, you may want to dig the trench a bit wider to allow for generous carbon placement (see #3 below).

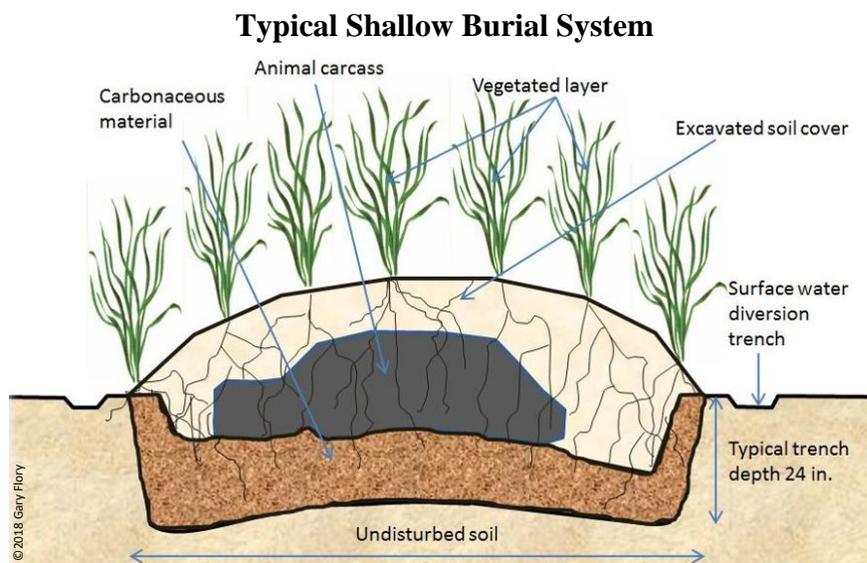


Figure 3. Graphic showing placement of carcass in shallow burial system.

3. The base of the trench is then lined with a 12-inch thick base of carbon, such as sawdust shavings or “biologically” active materials like horse bedding, to help prevent lateral and downward movement of fluids and nutrients as the animal decomposes.
4. Finally, the carcass is placed on top of the bed of carbon and covered with the the loose soil originally excavated to form the trench. Once completed, the pile may be seeded and left undisturbed to complete the decomposition process. Trenches may be lengthened to



accommodate more carcasses, but in no case should multiple carcasses be placed in the same spot.