

# **Composting Operating Standards- Vector Control**

# Vector

- Definition of Vector in T14 § 17225.73
- “Vector” includes any insect or other arthropod, rodent, or other animal capable of transmitting the causative agents of human disease, or disrupting the normal enjoyment of life by adversely affecting the public health and well being.”

# Vector Control

- T14 § 17867(a)(2)
- “All handling activities shall be conducted in a manner that minimizes vectors, odor impacts, litter, hazards, nuisances, and noise impacts; and minimizes human contact with, inhalation, ingestion, and transportation of dust, particulates, and pathogenic organisms.”

# Purpose of Vector Control at Composting Sites

- Birds & vectors are a health hazard to users, site personnel and neighboring residents as they are capable of transmitting diseases to humans, pets and crops
- Aesthetic visual impacts to site and surrounding area.
- Minimize/Prevent site operations impacts.

# Vector Indicators

- Tracks
- Droppings/scat
- Urine Odor
- Fresh gnaw marks
- Habitat signs- Nests/ burrows
- Visual sightings
- Damage to windrows, site structures, equipment

# Vectors Commonly Encountered at Composting Sites

- Flies
- Mosquitoes
- Rodents
- Birds
- Coyotes, feral cats and dogs



# Flies



- Flies are a nuisance and a vector
- Pick up dangerous organisms with their mouth and other body parts and pass them to humans and animals through their feces and vomitus.
- Flies have preferred feeding and breeding sites
- Flies that breed and feed on damp and decaying organic matter include; Fruit flies, Phorid flies, Sphaerocerid flies, House flies, Blow flies, Bottle flies and cluster flies

# Fly Control

- Eliminate the feeding and breeding sites
- Prompt processing of food waste into the windrows
- Insecticides
- Insecticide free traps
- Pheromone traps
- Plain sticky traps

# Health Hazards of Mosquitoes

- Mosquitoes are responsible for more human death than any other living creature.
- Every year, over one million people worldwide die from mosquito-borne diseases. Mosquitoes can carry many different kinds of diseases including malaria, heartworm, dengue fever, encephalitis, yellow fever and West Nile Virus.



# Mosquito Control



- All mosquitoes need water to complete their lifecycle. Eliminate all sources of standing water.
- Ensure good drainage throughout site.
- Pesticides
- Biological controls such as mosquito fish, invertebrate predators, parasites and diseases to control mosquito larvae



# Rodents



- Attracted to composting sites - easy source of food
- Carry and spread diseases- hantavirus & bubonic plague
- Cause fires or electrical shorts-chew through insulation on electrical wires in structures and equipment
- Build nests in the engine compartments of equipment that has not been used for a while, causing fires.
- Need a habitat such as old vehicles, storage sheds, brush piles, under buildings or other structures
- Some burrow to make nests

# Rodent Control

- Remove food sources, water, and items that provide shelter for rodents.
- Promptly processing food waste into the windrows
- Eliminate water sources
- Exclusion from buildings
- Until the habitat is removed, other forms of control may not be effective
- Rodenticides
- Traps

# Impacts of Birds

## Health and Safety Concerns

- Attracted to compost sites that handle food waste as a feedstock
- Spread diseases to humans (customers, personnel and neighbors), to other animals/pets and possibly crops
- Aesthetics/ visual impacts

# Bird Deterrents

- Prompt processing of food waste into the windrows
- Other deterrents may include:
  - Noisemakers
  - Bird distress sounds
  - A grid of monofilament line
  - Reflective tape
  - Decoys, typically designed to look like an owl or other bird of prey
  - Model airplanes
  - Falcons



# Coyotes, Feral Cats and Dogs

- Opportunistic feeders & are attracted to composting sites as a source of food
- Dig through and damage windrows
- Have aggressive behavior & may attack or bite site users and personnel
- May kill neighborhood pets
- Nuisance to the composting site and adjacent neighbors

# Controlling Coyotes, Feral Cats and Dogs

- Site fencing (exclusion)
- Noisemaking devices
- Repellants
- Trapping and relocation

# Inspection Report Write-ups

- On the inspection report, state the standard requirements, evidence observed or vector indicators, describe the location and extent of the bird or vector problem.
- Photos for documentation

# Sample Vector Problem Statements

- Take effective measures to minimize flies.
- Promptly process all food waste feedstock as per the RCSI.
- Numerous flies were observed at and around the food waste in the tipping area.