# SUNNYSIDE THYMES

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## Guess Who's Coming to Dinner?

*SMG Education Committee - Carrie Hunter*

***The worms go in, The worms go out, The worms play pinochle on your snout…"***

Remember *The Hearse Song* from your summer camp days? That song points to the amazing contributions that Oligochaeta make to our planet's ecosystem.

Charles Darwin referred to earthworms as "nature's plows." In its day-to-day life, an earthworm performs many important functions: biological, chemical, and physical. Earthworms make both vertical and horizontal tunnels in the soil, allowing for water and air movement and providing spaces for root growth. They mix organic matter into various levels of soil through their burrowing action. Via their digestive processes, earthworms make nutrients available to plants. Earthworm castings (fecal matter) are many times richer in nitrogen, phosphates, and potassium than the surrounding soils. (You can buy bags of worm poop locally or order them online. Top-dress with them or make them into tea for watering-in nutrients.

All earthworms are hermaphroditic, meaning they have both female and male organs, but they must mate with another worm in order to reproduce. Mating happens on the soil surface. Mom and Dad lie parallel, lining up their clitellum (visible, wide bands/ segments) then they secrete a substance that, when dry, forms a cocoon. As each worm wiggles out of the cocoon, each injects eggs and sperm into the cocoon which hardens and closes up, fertilizing the eggs. These cocoons are small, lemon shaped, and may be seen by the human eye if a human is looking for them. Egg cocoons may contain up to 20 eggs, though usually only a few juvenile worms will emerge. Juveniles are fully formed, though their sexual organs develop 60-90 days later after emergence, depending on the species. Earthworms can produce from 3-80 cocoons a year and can live as long as 8 years. Though it varies by species, many earthworms may regenerate lost segments. It may even be possible for an earthworm that has been cut into two parts to become two new earthworms!

Earthworm migration has been in progress for millennia. Since the last ice age, earthworms had been nonexistent in North American forests, until the eighteenth century when Europeans and Asians began emigrating to the western hemisphere. These immigrants brought soil and plant material with them: potted trees, herbs, vegetables, etc. In those pots were earthworms! Many of these nonindigenous species are beneficial, some, however are having a large, negative impact on local ecosystems. Forest floors are made up of deep layers of fallen organic material: leaves, twigs, branches, etc. These materials decay slowly, providing nutrients for understory plants and providing nutrition and living environments for insects, rodents and other small animals. When earthworms are introduced where none existed before, their ploughing action moves these nutrients deep into the soil where only the deepest tree roots can reach. The loss of these nutrients may bring on a loss of certain niche plants, such as poplars and birches. Also their digestive action reduces surface cover and nutrient resources for insects and animals. Generally, when earthworms are introduced to forests, nutrient diversity is reduced.

Recently there has been an invasion of the Asian earthworm species Pheretemoid. These have colorful nicknames; Alabama Jumpers, "crazy snake worms", and Asian Thrashers due to their whip-like thrashing motions when disturbed. You'll know one when you hold one in your palm. This species is of

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concern due to their rapid reproduction cycle and great diet diversity increasing their competitiveness with indigenous species. This rapid cycling of nutrients may quickly strip a forest of nutrients. Though there is no known way to remove existing earthworm populations from the soil, there are several prevention measures which are crucial. The movement of soil from location to location is strictly regulated in some North American locations. Cutting down on the release of fishing worms is another important measure.

Vermiculture! You'll learn more about it in a follow-up article. For now, just know that the Merriam-Webster Online Dictionary gives this definition: "***the cultivation of annelid worms (such as earthworms or bloodworms) especially for use as bait or in composting.***"

Do you want to find out about the earthworm population in your land? Try a mustard pour. Into one gallon of water, mix 1/3 cup ground yellow mustard seed. Pour this slowly over a small area of soil. This will drive the worms to the surface. Also, watch this video of a man helping feed some hungry baby birds by drawing earthworms to the soil surface! https://www.youtube.com/watch?v=yyFjRXHJa6I

*References:* Charles Darwin, *The Formation of Vegetable Mould through the Action of Worms*, 1881. *Invasive Earthworms of North America*, Wikipedia. *Earthworms of North America*, Wikipedia. *Earthworm*, Wikipedia. Merriam-Webster Online.