



Game of Thrones

For kings and queens of the north doing our business in remote locations, alternative toilets can be an economical, water-efficient, and convenient way to get that royal flush

BY JACKIE DAVIS

ILLUSTRATION
HAYDEN MAYNARD

WHEN MY FAMILY FINALLY got a composting toilet at our cottage in 2010, it was the most extravagant upgrade that our little off-grid cabin had ever received. Pre-composting unit, the throne was a bucket fastened below the outhouse bench. This system had been in place for decades, since before my family got the cottage; my German grandmother felt it perfectly appropriate (“*Das ist cottage*,” she liked to insist). But eventually, emptying a pail of raw sewage was a chore that made negative amounts of sense when there were so many better—and less disgusting—options available. So, after Oma passed, and after a lot of research, we settled on a composting toilet. A decade later, we still love it.

Alternative toilets can be more efficient and consume less water than a septic system; they’re a useful option when you need a secondary toilet to relieve pressure on your existing septic; and for some off-gridders, they’re a solution that’s more appealing than an outhouse. (You can house them inside the cottage. No more stumbling through the darkness in the middle of the night. Yay!)

“We all gotta go,” says Rick Taylor of Canadian Eco Products, which distributes the waterless Separett toilet. “But no one wants to talk about it.” Well, that’s just not true. *Cottage Life* wants to talk about it. >>

What's the breakdown?

Getting an alternative toilet, “is like getting a new pet,” says Rob Davis of EcoEthic, which sells the electric MullToa composting toilet and the EcoJohn TinyJohn incinerating toilet. Choose wisely: you don’t want to end up with a ball python when you really should’ve picked a goldfish.



A

Composting toilets

WASTE GOES IN, COMPOST COMES OUT. Everybody wins! Composting toilets achieve this by combining together waste, air, moisture, and warmth. The simplest version is the self-contained unit, where waste drops down into a chamber below. That’s where the magic happens. “They’re a one-piece system,” says Erin Lynch of Sun-Mar. “Everything can be done right there where the toilet is.”

Some toilets are waterless; others are low-water flush units. Some models require a small amount of power—through electricity, battery, or solar—to run a heating element to evaporate liquid or a fan to vent odours. Other toilets simply use a long vent stack, outhouse-style. Most units have some way to mix or “turn” the compost (to help break it down) via a hand crank or motor. Most also require the periodic addition of some kind of bulking agent (such as mulch, peat moss, or coconut fibre) to help absorb liquid and encourage the composting process by

boosting the carbon content of the mixture. Compost needs a specific ratio of carbon to nitrogen; human waste alone has too much nitrogen.

If you’re looking for a multi-toilet set-up, “central” composting systems feature a separate, larger chamber—located in the basement, say—connected to one or more thrones, and may use a small amount of water, or vacuum suction, to flush. This is a good option when a cottager only has the space for a greywater system to handle the water from sinks and showers or wants multiple toilets but doesn’t have room for a large drainfield, says Luis Goncalves, the owner of GroundStone WasteWater Service in West Kelowna, B.C.

Price-wise, the most basic of toilets are—no surprise—the least expensive of the composting toilets: Sun-Mar’s self-contained units range from about \$1,700 to \$1,900, while more elaborate, higher-capacity units can cost three times as much.

B

Urine-diverting (or separating) toilets

RAW SEWAGE SMELLS. But, separating urine from solid waste tamps down on scent because, unless the two are combined, there’s no stinky ammonia, hydrogen sulphide, or methane. The bowls of these toilets are designed to send liquid into one chamber and solids into another. To do this successfully and direct urine into the drain hole at the front of the bowl, manufacturers often recommend that men sit down to pee. “But if you can be relied upon to aim for the forward section of the bowl, you can stand,” says Richard Brunt, the owner of Composting Toilets Canada in Victoria, which distributes both Separett and Nature’s Head urine-diverting units. “I stand, personally.”

Manufacturers still label these units composting toilets, but “what comes out of urine-diverting toilets is not compost,” says EcoEthic’s Rob Davis. You’re getting urine, and something that’s *compostable*, straddling the line between straight crap and “useable” compost. And it’s on you to deal with this unfinished business. If you have an outhouse, or a toilet connected to a septic system, put it in there, says Rick Taylor. But what if you don’t? Manufacturers have all kinds of suggestions including treating it like a dirty diaper and throwing it in the garbage; burning it; and tossing it on your regular compost heap.



But, if you call your municipality, and ask them if you can do any of these things, they’ll probably say no. “You need to call your municipality and ask them what you can do,” says Brunt. “You might need a waste management system.” A common set up: use a simple leaching bed for the liquid, and compost the solids via a system dedicated to handling human waste. “You need a proper compost bin,” says Brunt. “Don’t use a garbage can, don’t use a wheelie bin. Some people cheap out and do this—it’ll just result in a stinky mess.” But with a tumbling composter or compost bin, which you can buy for about \$100, it’ll result in fertilizer for your trees and flowers.

The one giant bonus of urine-diverting toilets? Their typically low price tag—you’re doing most of the composting work, not the toilet. Sun-Mar’s GTG, for example, (see “New Kids on the Block,” below) retails for about \$630. >>

New kids on the block

Here are some of the latest in alternative toilets



Sun-Mar’s GTG urine-diverting toilet

- Small, economical
- Fast set-up

\$629



Cinderella Gas incinerating toilet

- Can handle 3–4 visits per hour
- One 20 lb (barbecue-sized) propane tank provides 75 to 100 incineration cycles

\$5,190



Separett’s Tiny urine-diverting toilet

- Good for tiny homes, RVs
- For full-time use by 2 users, solid waste needs to be emptied once per week (urine, 2–3 times)

Approx \$1,500



Nature’s Head urine-diverting toilet

- Holds 60–80 solid uses
- With 2 users, can go 6 weeks without needing to be emptied

\$1,299

C

Incinerating toilets

INCINERATING TOILETS BURN waste at a very high temperature. You're left with a small amount of sterile ash to dispose of as you would ash from your fireplace. There's no liquid to drain; any combustion gases are expelled out through a ventilation pipe.

"People hear the word 'incinerating' and they just think 'fire,'" says Joey McNeil of Cinderella Eco, a Norwegian-made incinerating toilet that's been sold in Canada since 2018. "They ask, 'Is it safe? I've got kiddies,' or 'I have dumb adults.'" But incinerating units typically have built-in sensors that shut off the toilet when something's amiss. And the incinerating process stops automatically when a new user wants to use the toilet.

Unlike composting toilets, all incinerating toilets need some form of power or fuel—electricity, propane, natural gas, or kerosene, for example. An electric model may not be the best choice if your area is prone to power outages; that said, with the Incinolet incinerating toilet, you can store "deposits," says company rep Joanne Whyte. "It's not recommended for normal

use, but it's okay in an emergency. In that case, an extra burn cycle may be required once the power comes on." A better option? Have a backup generator to run the toilet.

Incinerating toilets are usually the priciest of the bunch. For example, U.S.-based EcoJohn's TinyJohn, which can run totally off-grid on a 12vdc battery and propane or natural gas, sells for about \$4,900 from EcoEthic. And the large-capacity Cinderella Comfort retails for \$4,990. You'll also need to factor in the yearly costs for fuel or electricity, and the costs of accessories.

My family, happily, chose the right new pet—er, *toilet*. With a little research and insight (see opposite), you can too. 🐾

Jackie Davis writes Cottage Life's regular Cottage Q&A column. She's answered about 400 questions. Lots were about toilets.



The old faithfuls

These tried and true models are as popular as ever



Incinolet's Model TR incinerating toilet

- Uses as little as 1½–2 kWh per cycle; serves up to 6 users
 - Optional coloured lid! Yellow, blue, or rose
- \$2,745**



EcoEthic's MullToa 25e composting toilet

- Fully automatic
 - Best for lower use; 1–3 people part-time
- \$2,350**



Sun-Mar's Centrex 2000 composting toilet system

- Waterless, electric
 - Serves 4 adults for residential use, or 7 for seasonal use
 - Connects to multiple (separately purchased) toilets
- \$2,055**



EcoJohn's SepticJohn incinerator system

- Can take 40 daily flushes
 - Waste from household toilets routed to central incinerator system, often housed separately
- \$6,995 U.S.**

Is an alternative toilet right for you?

Before you buy, you should ask:



Will I need a permit?

A "no-discharge, sealed unit" (a.k.a. self-contained, waterless toilet) usually won't, says Sandy Bos, the sewage system inspector for Ontario's Township of Muskoka Lakes; there's nothing draining into the environment. But if you're adding an extra toilet to accommodate more guests, that could translate into more people using the existing plumbing. "People say, 'I don't want to upgrade my septic', but when you add another toilet, you can also get more water going into the existing set-up because more people are washing their hands and showering," says Bos. As always, check with your local regulator (usually the building department or the health unit).



How many people will be using the toilet day-to-day? What about on the weekends?

You're best to over-estimate this number, and spend more money on a higher-capacity toilet, especially if an alt toilet is your only throne. The Cinderella Comfort can handle "three to four visits per hour," says McNeil. "You do sometimes need to manage that. You wouldn't want a lineup of 10 people, all needing to use the toilet at the same time, after a dinner party." (Cinderella sells a separate urinal designed as a companion, intended to help relieve the burden on the toilet's incinerator, says McNeil. "After all, most bathroom visits are number one.") Urine-diverting toilets are considered "unlimited capacity." If lots of people use the toilet, you just need to empty it more frequently. Composting models are usually rated for the number of users (one to three people; five to seven people) and "full-time" vs. "part-time" or "vacation" use. Ask the manufacturer for the average per-person daily number of uses. Three visits? Six visits? That will make a difference.



How important are looks?

Urine-diverting toilets can appear fairly toilet-like. Some incinerating models, meanwhile, are boxy. And the Incinolet looks a little like someone attached a toilet seat to a hotel mini-fridge. Does any of this matter? Possibly more important: size. Self-contained toilets such as the Phoenix, distributed by B.C.'s Sunergy Systems, and Sun-Mar models must house the composting gadgetry below the toilet bowl. Even Sun-Mar's Spacesaver is 19.5" wide and 23" deep. Not ginormous, but still larger than a conventional toilet. Keep in mind that, depending on the model, you want to leave space around the toilet to be able to easily pull out the compost tray or ashpan, or do other required maintenance or cleaning.



How prepared am I to do the regular maintenance and troubleshoot potential problems?

The toilets in your house can take a joke, but some alternative toilets are finicky and prone to throwing a tantrum when they don't get exactly what they want. Too much liquid? Problem. Not enough liquid? Problem. And non-cottage guests sometimes do bizarre things, like try to "flush" a waterless toilet with cup-fulls of water, or dump handful after handful of peat moss into the throne, even though the instructions on the wall *specifically tell them not to*. "Around here, I've seen a lot of composting and incinerating toilets on the side of the driveway because the owners got fed up with them," says Sandy Bos. "They do take some work. And some patience."



How high is my squick tolerance?

The very idea of a urine-diverting toilet can be "terrifying" for some people who don't like the idea of seeing their own waste, says Rob Davis. But a lot of that is mental, insists Rick Taylor. "For the most part, you don't see that much. Personally, I think it's a lot less gross than an outhouse." But what if the toilet malfunctions? When someone (Not. Me.) accidentally rotated the mixing drum in our toilet the wrong way, the end result was smelly mystery sludge. The clean-up job was so traumatizing that my mother insisted on buying past-the-elbow rubber gloves—the sort of thing a vet might wear to give a cow a rectal exam—in case this ever happens again.