What happens to my body after death?
Final Disposition Options: Environmental Costs & Benefits

What matters most to you?
Environmental impact? Religious, family or cultural tradition? Cost? Convenience? Ceremony with the body and/or memorialization or ceremony with the remains? Working with a locally owned and operated facility? Relationship with established conservation stewards?

METHOD	NET CARBON FOOTPRINT	FUEL EXPENDITURE	LEFT-OVERS FOR DISPOSAL	LAND ACREAGE PROTECTED	ENVIRO BENEFITS/ COSTS
Conservation Burial	+ Sequesters 25 lbs. of CO_2 per burial, 10 tons per acre.	— Transportation to the cemetery.	Not applicable	+ Unlimited. + Strategic component of a complete land conservation plan.	+ Land protection. + Nutrient contributions to soil communities.
Human Composting	— Indeterminate greenhouse emissions.	— Bulking agents (alfalfa, wood chips): sowing, watering, harvesting, processing, transporting to facility; storage. — Construction, heating, cooling, maintenance of facility and its operating units. — Transporting of finished material.	— 1+ cubic yard of leftover material Including 10-15 lbs. of pulverized bone (*calcium phosphate and sodium which is 11.8 pH, 200–2000 times what plants can tolerate*).	Not applicable	— Materials acquisition. — Facility maintenance. — Trucking of leftover materials. — Smothered plant and soil communities in surface disposal. + Restoration of depleted soil if intentionally tilled or incorporated.
Alkaline Hydrolysis	— 150 to 250 lbs. CO_2 per person. — Most effluent will be turned into carbon and nitrogenous GHG by public wastewater treatment facilities.	— Electricity or propane to heat 100 gallons of water under pressure 3-12 hrs.· — Processing and transportation of potassium hydroxide (lye).	— 100 to 300 gallons of effluent and 10-15 lbs. pulverized bone (*calcium phosphate and sodium, which is 11.8 pH, 200–2000 times what plants can tolerate*).	Not applicable	— Potential algae bloom from phosphorus run-off due to scattering. — Tree ringing *(girdling)* from burial close to tree roots. — Disposal of effluent (no state EPA has permitting).
Flame Cremation	— 250 to 526 lbs. CO_2 emissions per person. — Mercury, particulate emissions into air and waterways.	— Up to 500 gallons of fuel, usually natural gas, to burn @ 1700 to 2000° for 3-4 hours.	— 7-10 lbs. of pulverized bone (*calcium phosphate and sodium, which is 11.8 pH, 200–2000 times what plants can tolerate*).	Not applicable	— Algae blooms from phosphorus run-off. — Tree ringing from burial close to tree roots. — Mercury poisoning of air and water.

FOR MORE INFORMATION:

- **State-based, non-commercial information**: Oregon Funeral Resources & Education at **Oregonfuneral.org** and Washington Funeral Resources & Education at **Washingtonfuneral.org**
- **Research-based information** on environmentally responsible disposition options, see:
  - *Cremation Curious* **https://vimeo.com/767868604**
  - *The Natural Burial Experience* **https://vimeo.com/769978957**
- **Educational programs and courses**: RedesigningtheEnd.com at **redesigningtheend.com**

Natural Burial (*green burial, conservation burial*)

- Sequesters 25 lbs. of carbon per person
- Protects land for community use; protects animal habitat
- Avoids environmental harms of embalming, use of concrete or metal grave liners, and imported or manufactured casket materials

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Flame Cremation

- Emits 250 to 536 lbs. of carbon per person
- Burns fossil fuels *(natural gas)* for 2 to 3 hours at 1700 to 1900° F
- Releases mercury, nitrous oxide, and particulate matter into air and water *(Minnesota study 14% of mercury emission attributable to crematories)*
- Nutrients incinerated or locked and unavailable
- Phosphorus run-off from scattering creates algae bloom that kills fish and plants; girdles trees, killing microbial and plant communities
- Increased risk of radiopharmaceutical contamination for crematory operators *(Journal of the American Medical Association, 2.26.19)*
- Final product: 7 to 10+ lbs. of pulverized bone comprised of calcium phosphate and sodium (pH of 11.8; 200 – 2000x too alkaline for plants/roots to tolerate)

Alkaline Hydrolysis (*water cremation, bio cremation, aquamation, aqua cremation*)

- Emits 150 to 250 lbs. of carbon per person through applying 100 to 300 gallons of 200 to 350° pressurized water in a potassium hydroxide alkaline solution *(lye)* for 3 to 12 hours
- Cytotoxins and embalming fluid neutralized; mercury captured but not mitigated
- Uses 80% less energy than flame cremation; emits 20% less CO_2
- Leftover: 100 to 300 gallons of effluent, no current regulations for safe disposal
- Final product: 10 to 15 lbs. finely pulverized bone (20 to 32% more than flame cremation)

Human Composting (*natural organic reduction/NOR, terramation, soil transformation, Precision Organics)*

- Carbon emissions inestimable at this time that include:
  - Industrial facility construction if in an urban or suburban setting
  - Commercial production and transport of feedstock and bulking agents such as alfalfa and wood chips used for the comporting process (for reference, alfalfa production uses a third of the water needed for livestock irrigation which accounts for 86% of the water draining the Colorado River Basin)
  - Fuel to transport and dispose of a pick-up truck's load quantity of leftover composted material for each composted body to a separate location
  - Resulting composted material can be retained by the family or donated.
- Material may be disposed of in established, non-profit conservation property to support soil restoration in depleted areas (beware of surface dumping that is not part of a scientifically-based conservation plan)
- Takes 2+/- months for microbes to break down tissue
  - Low impact if managed as natural decomposition in a non-industrial setting
  - Fuel costs to control temperature, humidity, and other facility functions in industrial facilities
- Bones removed, pulverized, returned to mix
- Final product: 1 to 1.5+ cubic yards leftover composted material to transport