

A Guide to Environmental Stewardship

at
Azusa Pacific University



By Berit Anderson
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But ask the animals, and they will teach you, or the birds of the air, and they will tell you; or speak to the earth, and it will teach you, or let the fish of the sea inform you. Which of all these does not know that the hand of the LORD has done this? In his hand is the life of every creature and the breath of all mankind.

Job 12:7-10 (NIV)

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Environmental Sustainability Explained

What does "environmental sustainability" mean?

Sustainability is a buzzword that has many synonyms, such as environmental stewardship or "creation care." It is the news, at the top of government agendas, and plastered onto every "green" product in the grocery store. But what does sustainability mean, exactly? Furthermore, what does living sustainably look like in our every-day lives?

The United States Environmental Protection Agency defines environmental sustainability as a practice which "creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations."

Herman Daly, an early leading voice on climate change, provides an alternate definition of ecological sustainability:

- 1. For renewable resources, the rate of harvest should not exceed the rate of regeneration (sustainable yield);*
- 2. [For pollution] The rates of waste generation from projects should not exceed the assimilative capacity of the environment (sustainable waste disposal); and*
- 3. For nonrenewable resources the depletion of the nonrenewable resources should require comparable development of renewable substitutes for that resource.*

In essence, living sustainably means living our lives in a way that makes a little impact upon the earth as possible. For our purposes, this document will use the term "environmental stewardship" when discussing sustainability.

Environmental Lingo 101

Terminology referring to stewardship and the environment is often intimidating. What does it all mean? In order to understand and incorporate stewardship into our every-day lives, it might be helpful to define key terms that are used by the media, scientists, and other supporters of "creation care."

What is climate change?

A common misconception regarding climate change is that it simply means climbing Earth temperatures. According to the EPA, climate change actually encompasses "any significant changes in the measures of climate lasting for an extended period of time." Scientists agree that Earth temperatures have always fluctuated; however, evidence indicates that whereas these fluctuations used to occur naturally, they are now occurring with increasing speed and severity due to human activity.

What is a non-renewable energy source?

- Coal
- Petroleum
- Natural Gas

What is a carbon footprint?

A carbon footprint refers to the sum of all greenhouse gas emissions produced by the lifestyles of a given individual or group of persons.

For example, an individual's carbon footprint may be impacted by:

- Transportation
- Household electricity, gas, & water use
- Consumption of food & other goods which require energy to produce

Climate Change Explained

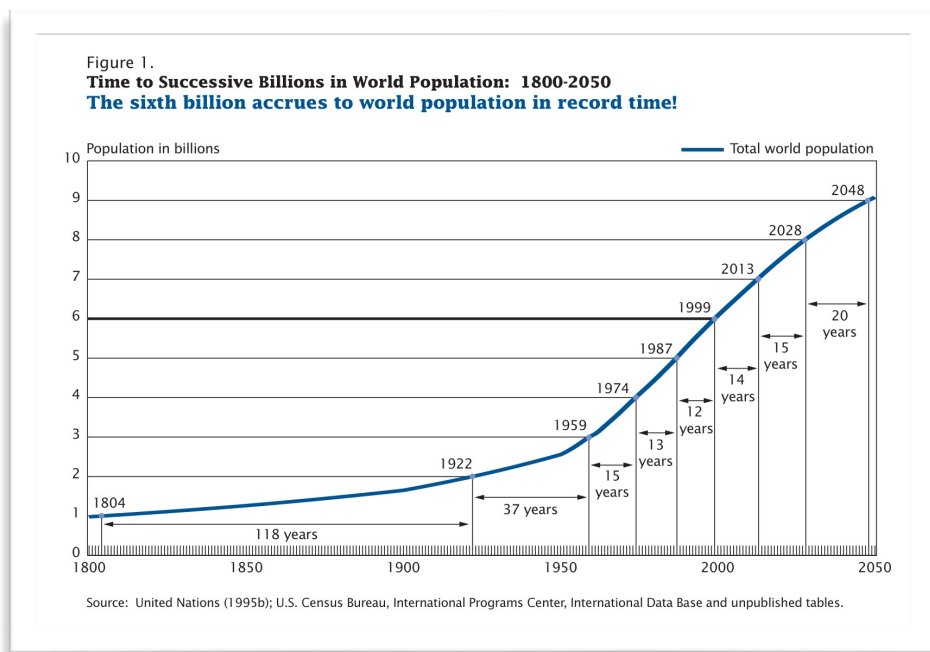
A Historic Perspective on climate change

Since the beginning of the 19th century, the world's population has exploded from one billion to seven billion in 2012. At around the same time, the industrial revolution began in Europe, powered by new innovations in technology, and most importantly, coal. From then on, fossil fuels took center stage in almost every technological innovation which made life more convenient and more profitable. The ever-increasing demand of non-renewable energy sources coupled with swelling ranks of human consumers have been identified as the main contributors to climate change and its associated repercussions in a myriad of ways.

Important factors of climate change

To better understand climate change, it is essential to identify the key human factors which influence it –it's about much more than how much gas we use at the pump.

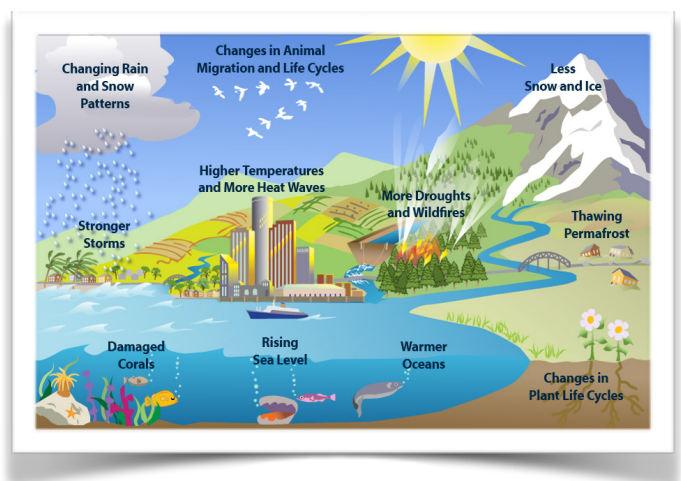
- **Population:** A growing population means growing demands for food, water, and other essential resources. Unprecedented growth in population has placed enormous strains upon the Earth's ecological systems, resulting in depleted freshwater sources, shrinking carbon-sequestering forests, and the expansion of deserts (called "desertification") due to the over-farming of land.



Our growing population is putting immense strains on these ecosystems, drawing from them more than they can give us. Not only is this overuse putting a strain on systems which support our existence, but it also contributes to our rapidly changing climate.

- **Consumption:** Many factors contribute to the incredible levels of consumption by the world's inhabitants. Although over one billion of the world's poorest live on only a few dollars per day, the expanding developed world and its free-market spenders have become an army of consumerism, demanding more food, material goods, and energy from non-renewable sources each year. In 2011, the U.S. consumed almost 19 million barrels of oil per day (U.S. Energy Information Admin <http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6>).
- **Greenhouse gasses & Non-renewable energy sources:** A common misconception is that if an alternative to gasoline were found to power automobiles, climate change would be squared away as another hurdle of modernity. Unfortunately, hydrocarbons (oil, natural gas, etc.) are an integral part of every aspect of human life. Electricity is most often supplied by burning fossil fuels, which also comprise the tupperware we store our leftovers in. The strawberries we enjoy year-round are transported by truck or ship with the help of non-renewable energy sources. Even the cheeseburger we enjoy at McDonald's has been so processed with the help of fossil fuels that it contains the same carbon footprint as about half a gallon of gasoline at the pump. (http://openthefuture.com/cheeseburger_CF.html) In fact, industry contributes over one-third of the world's carbon emissions (<http://www.global-greenhouse-warming.com/industry-CO2-emissions.html>).

All this to say that the greenhouse gasses humans are emitting into the atmosphere don't just come out of our tailpipes, which is an important realization to make in the quest to live a more sustainable lifestyle. Furthermore, greenhouse gasses don't just make the earth warmer –they disrupt every ecological process from rainfall (which leads to flooding, droughts, and more violent storms) to changes in the oceans (rising sea levels, increased acidity, and "dead" zones). *When it comes to climate change, everything is interconnected and no one is unaffected.*



Sustainability and the Christian Faith

How is God calling us to pursue environmental stewardship as Christians?

Shalom is a call to "creation care," a growing movement within the church to encourage environmental sustainability among followers of Christ. The word *Shalom* is often found in scripture and is means peace, completeness, and prosperity. Author Ben Lowe notes that not only does *shalom* imply an absence of conflict, it's about "right relationships between God and everything else, where wholeness and flourishing occurs without opposition."¹ In the Garden of Eden there was *shalom*, and when the earth's systems and humanity, both created by God, are able to live in productive harmony with one another, there too will be *shalom*. Environmental sustainability, or "creation care," is a modern definition of *shalom*. God is constantly reconciling all of creation to himself in an attempt to restore it, but often we Christians foolishly limit this working relationship to only ourselves and to God.

Shane Claiborne, well-known Christian activist and author, observes the connection between stewardship of God's creation and loving one's neighbor:

"All across the church, Christians are waking up to God's call to care for his besieged creation and to love the poor who are suffering the most from environmental degradation... All the science in the world and heroic individual effort are of limited good until we understand how to engage one another..."²

What does scripture say about environmental stewardship? A Biblical passage which is often misconstrued to allow for negligence towards God's creation, Genesis 1:28, says:

"God blessed them and said to them, 'Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground.'" (NIV)

Although God created humanity to rule the earth, his intention was never to see it polluted, damaged, and emptied of all resources. In fact, God intended humanity to live in harmony with

¹ N. Spencer, R. White, and V. Vrobley, Christianity, Climate Change, and Sustainable Living (London: Hendrickson Publishers, 2009) p. 29.

² B. Lowe, Green Revolution: Coming Together to Care for Creation (Downers Grove, Illinois: InterVarsity press, 2009) p. 14.

nature and benefit from its fruits, all of which were declared "good" by God. To "rule over" or "have dominion" means that God has trusted us with his precious creation. To put it simply, we have been charged with tending to (and responsibly partaking of) His garden until He returns.

Nick Spencer, author of *Christianity, Climate Change, and Sustainable Living* helpfully notes that ours is a God who gloried in his creation and whose creation, therefore, reflects something of his character.³ If God created every element of our universe with great care and intention as we believe, it must give Him great joy when his church makes environmental stewardship a priority.

Saint Francis of Assisi as a Theological Exemplar

It is said that Saint Francis of Assisi, the 12th century Patron Saint of Ecology, performed many miracles with wild animals and greatly revered God's creation.

On the World Day of Peace in 1990. Pope John Paul II wrote of the saint:



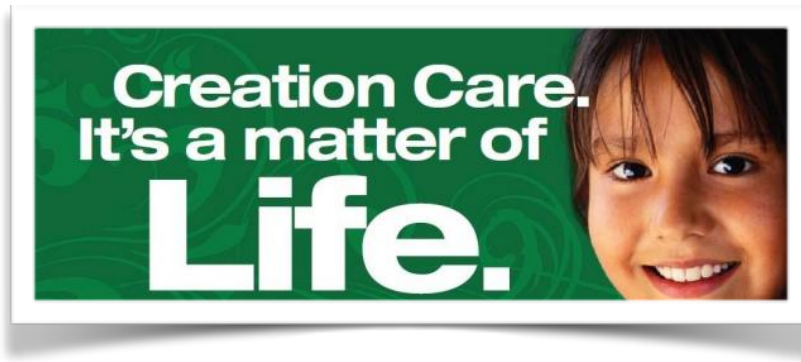
"As a friend of the poor who was loved by God's creatures, Saint Francis invited all of creation – animals, plants, natural forces, even Brother Sun and Sister Moon – to give honor and praise to the Lord. The poor man of Assisi gives us striking witness that when we are at peace with God we are better able to devote ourselves to building up that peace with all creation which is inseparable from peace among all peoples."⁴

³ N. Spencer, R. White, and V. Vrobley, Christianity, Climate Change, and Sustainable Living (London: Hendrickson Publishers, 2009) p. 82.

⁴ Pope John Paul II. (1990, January). "Peace With God the Creator, Peace With All of Creation." A message of His Holiness Pope John Paul II for the celebration of the World Day of Peace. Vatican City, Rome.

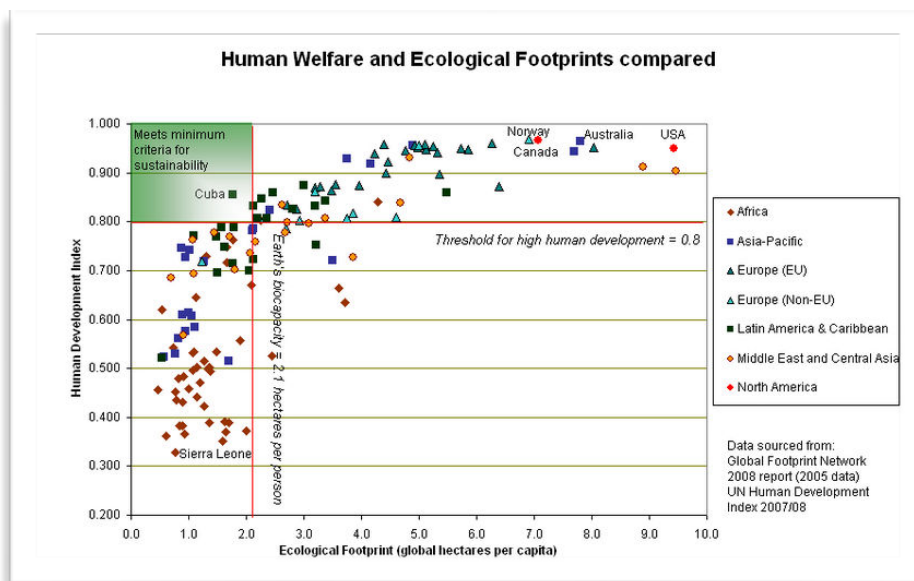
Environmental stewardship from a justice and human rights perspective

Environmental sustainability walks hand-in-hand with the Christian concern for the well-being of our neighbors. The environmental repercussions of the over-production of agricultural land, pollution, and excessive consumption impacts the poor and vulnerable disproportionately.



The Evangelical Environmental Network states,

"The reality of climate change is already being felt here in the U.S. and around the world in the form of extreme weather and health impacts, which most affect the unborn, poor, and powerless. It is time for America to tackle this great moral challenge. Doing so protects life and abides by Christ's teaching to love one care for the least of these, who will be hit hardest by climate change."⁵



⁵ The Evangelical Environmental Network is a leading Christian organizations promoting environmental stewardship. Source: <http://creationcare.org/view.php?id=693>



Easy Steps to Minimize Your Ecological Impact – And Live With Creation Care in Mind

Conserve Electricity

1. Unplug appliances and electronics not in use
2. Purchase a solar electronics charger
3. Air dry clothing
4. Buy more efficient compact florescent lightbulbs (CFLs)
5. Turn off your laptop, television, iPad and iPhone –go outside and interact with God's creation!



Reduce Your Emissions

1. Drive less. Purchase a bike, walk, and take public transportation.
2. Eat less meat or go vegetarian. America's industrial meat production system produces nearly

as many greenhouse emissions as our cars!

3. Buy locally at farmers markets. If you don't have access to locally-grown food, keep a chart on your refrigerator to tell you which foods are in season (Out of season blueberries, for example, are likely shipped from South America with **fossil fuels**).

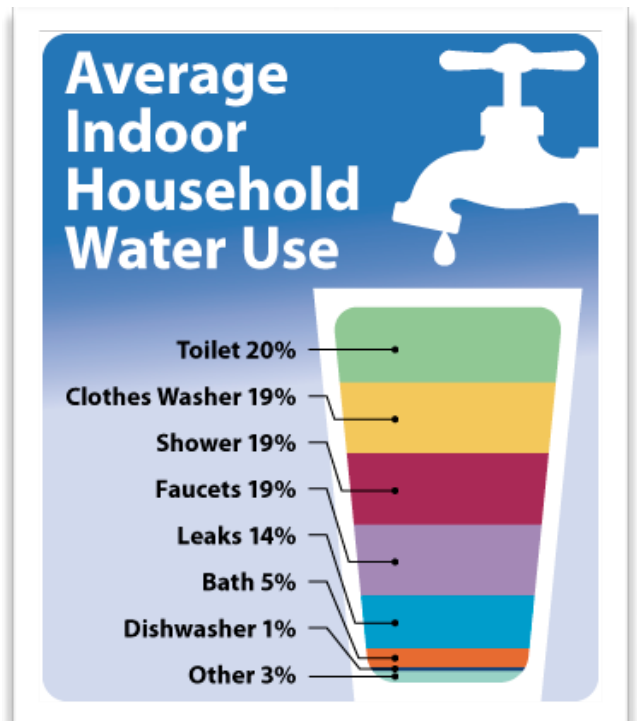


Conserve Water

1. Take shorter showers using a kitchen timer
2. Place a brick into toilet tank for low-flushing if you don't already have a low-flushing toilet
3. Use 5-gallon bucket to catch water as the shower heats up and use:
 - Fill the washing machine
 - Water your potted or planted garden
 - Flush the toilet

Reduce Waste

1. Purchase food with minimal packaging
2. Compost food waste
3. Cook at home rather than buying pre-made food on campus or elsewhere –plus it's cheaper!
4. Recycle and reuse as much as possible! Keep in mind that the recycle sign is unregulated, and often many plastic products cannot be recycled in eco-friendly ways.



5. Print papers double-sided and ask your professor to go digital!
6. Purchase paper products that have been made from recycled or post-consumer goods (printer and notebook paper, toilet paper, etc.)
7. Get rid of the paper towels! Use cloth rags instead.
8. Use cloth grocery bags. Keep one in your purse, backpack, or car at all times.

Tools You Can Use

quiz results	In global acres
My Carbon Footprint:	48.85 ga
Country Average:	91.43 ga

continued.

10. Below is a list of energy saving features and energy saving habits. Please check all that apply

Energy saving features

- Compact fluorescent bulbs
- Energy efficient appliances
- Extra insulation
- Insulating blinds
- Solar panels
- Storm doors and windows
- Water saving fixtures

Energy saving habits

- Turn off lights when leaving rooms
- Use power strips to turn off stand-by lights
- Turn off computers and monitors when not in use
- Dry clothes outside whenever possible
- Keep thermostat relatively low in winter
- Unplug small appliances when not in use
- Minimal use of power equipment when landscaping

Small lifestyle changes make a big difference. Find out more. →

Calculate your carbon footprint at <http://www.myfootprint.org>. The survey only takes a few minutes to complete and helps the user learn how to live more sustainably!





Learn about carbon offsets and purchase them at www.carbonfund.org/individuals.

Your money will fund third-party validated offset projects such as planting trees or building wind farms.

vehicles

 <p>hybrid/green 41+ mpg 2.72 tonnes \$27.21</p>	 <p>compact/mid-size 29-40 mpg 3.63 tonnes \$36.28</p>	 <p>full size 19-28 mpg 5.44 tonnes \$54.42</p>	 <p>suv 10-18 mpg 9.07 tonnes \$90.70</p>
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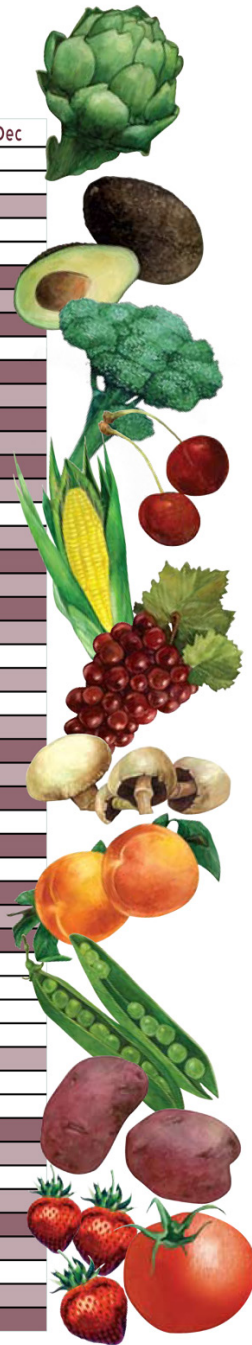
flights

 <p>flight up to 6,000 miles 1.13 tonnes \$11.33</p>	 <p>flight up to 20,000 miles 3.79 tonnes \$37.86</p>	 <p>flight up to 40,000 miles 7.57 tonnes \$75.73</p>	 <p>flight up to 100,000 miles 18.94 tonnes \$189.43</p>
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What's in Store *this* Season...?

Even in sunny Southern California, fresh fruits and vegetables have seasons – but there are plenty of local choices available year round.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Apples												
Apricots												
Artichokes												
Asparagus												
Avocados												
Basil												
Beans, Green												
Beets												
Broccoli												
Brussels Sprouts												
Cabbage												
Carrots												
Cauliflower												
Celery												
Chard												
Cherries												
Chili Pepper												
Citrus												
Collards												
Corn												
Cucumber												
Dates, Medjool												
Eggplant												
Figs												
Grapes												
Kale												
Kiwi												
Lettuce												
Melons												
Mushroom												
Nectarines												
Okra												
Onion, Dry												
Onion, Green												
Peaches												
Pears												
Pears, Asian												
Peas, Green												
Peppers												
Persimmons												
Plums												
Pomegranates												
Potatoes												
Raspberries												
Spinach												
Squash, Summer												
Squash, Winter												
Strawberries												
Tomatillos												
Tomatoes												



34

Eat produce which is in season. It's easy when you have a chart on hand to guide you!

(pomona.edu)

Recommended Reading

Books

- *Christianity, Climate Change, and Sustainable Living* by Nick Spencer, Robert White, and Virginia Vroblesky
- *Gardening Eden: How Creation Care Will Change Your Faith, Your Life, and Our World* by Michael Abbaté
- *Green Revolution: Coming Together to Care for Creation* by Ben Lowe
- *Stuffed & Starved* by Raj Patel
- *The Omnivore's Dilemma* by Michael Pollan
- *The Urban Homestead: Your Guide to Self-sufficient Living in the Heart of the City* by Kelly Coyne and Erik Knutzen

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