



Celebrate Earth!

**Living with Wisdom and Love
on Our Island Home**

³ And he said: "Truly I tell you, unless you change and become like little children, you will never enter the kingdom of heaven."

Matthew 18:3

Ben Nelson
Jim Kimmel
Jerry Touchstone Kimmel



San Marcos River, Texas

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What Is *Celebrate Earth!*?

Celebrate Earth! is an adult spiritual formation process that helps us develop a heart-level relationship with Earth, our island home. It builds on the concept that Knowledge + Love = Wisdom¹. Love is expressed as a tangible relationship developed via “The Way of Love” and Wisdom is defined as the ability to live sustainably within Creation (Proverbs 8:22-36). *Celebrate Earth!* draws on scripture and tradition, science, contemplation/meditation, and action to help us recognize our island home as God’s creation and that we are its stewards, not its owners.

Scripture and tradition

Genesis 1:24-25 *And God said, "Let the earth bring forth living creatures of every kind: cattle and creeping things and wild animals of the earth of every kind." And it was so. God made the wild animals of the earth of every kind, and the cattle of every kind, and everything that creeps upon the ground of every kind. And God saw that it was good.*

Franciscan tradition “*Laudato si', mi' Signore*” – Praise be to you, my Lord”. In the words of this beautiful canticle, Saint Francis of Assisi reminds us that our common home is like a sister with whom we share our life and a beautiful mother who opens her arms to embrace us.

ENCYCLICAL LETTER LAUDATO SI' OF THE HOLY FATHER FRANCIS ON CARE FOR OUR COMMON HOME

Science

Celebrate Earth! uses the ecology of rivers, lakes, and estuaries (river systems) to help us develop our knowledge base. Rivers, lakes, and estuaries are valuable “laboratories” for our learning process because they are vital to life, dynamic, and attractive.

Contemplation/Meditation

In Proverbs 8 Wisdom tells us: ³² “And now, my children, listen to me: happy are those who keep my ways. ³³ Hear instruction and be wise, and do not neglect it.” *Celebrate Earth!* links scientific knowledge with contemplation and meditation to help us learn to keep Wisdom’s ways.

Activities

Celebrate Earth! takes an unusual approach to action. Rather than emphasizing the usual environmental actions, we recommend activities that lead to a heart connection with Creation. We believe that a heart connection with Creation will inspire us to want to do the usual environmental activities of recycling, reducing consumption, etc. We have many decades of presenting creation care as a “you ought to.” *Celebrate Earth!* hopes to make it into an “I want to.”

¹*Care for Creation: A Franciscan Spirituality of the Earth*. Ilia Delio, Keith Douglas Warner, and Pamela Wood. Franciscan Media. Cincinnati, OH, 2007.



What Is Different about *Celebrate Earth!*?

There is no shortage of books and programs about creation stewardship. We offer this one because we think it is different in four ways.

1. ***Celebrate Earth!* is positive and optimistic.** We believe that Wisdom, Love, and the Holy Spirit are real and natural forces that have led the Earth and all its residents through hard times and creative times, often the same times. In this Trinitarian view Wisdom is the foundation and purpose, Love is the relational process, and the Holy Spirit is the energy of creation and transformation. We believe that we humans are created in the image and likeness of God, including God's creative abilities. We are intelligent and capable of change.
2. ***Celebrate Earth!* focuses on Love and Wisdom.** For decades much of the environmental discourse has been negative and focused on politically vulnerable laws and prescriptions to recycle, consume less, and ride bikes rather than drive cars. By focusing on deeper values and motivations we hope that *Celebrate Earth!* can help us make the necessary shift to *wanting* to care for Earth because it is our God-given home.
3. ***Celebrate Earth!* is holistic.** It denies the supposed duality between nature and humans. This helps change our perspective so we feel St. Francis's oneness with Creation. It also, very importantly, makes us consider our actions within the context of broader Earth processes. Our cities, farms, and factories should have the same stewardship care as our pristine wilderness.
4. ***Celebrate Earth!* is a coordinated relationship between science and meditation.** We believe science is revelation, creation is on-going, and we are participants in an unfolding process. Thomas Merton wrote: "It is true that neither the ancient wisdoms nor the modern sciences are complete in themselves."² The task for all of us is to seek wholeness, understanding there is always more to find and learn.

²*Gandhi and the One-eyed Giant*, Thomas Merton, *Jubilee*, January, 1965.



How to Use this Book

The purpose of *Celebrate Earth!* is to help us develop a love-based relationship with Earth, God's Creation, our island home.

Based on the concept that Knowledge + Love = Wisdom, *Celebrate Earth!* relates environmental science concepts to relevant meditations by using the Love-based Stewardship Principles on page 9 and the Primary Keys for Learning from Nature on page 14 as thought-provokers that link scientific concepts and meditations.

Thought-provokers from Primary Keys for Learning from Nature are in yellow boxes.

Thought-provokers from Love-based Stewardship Principles are in green boxes.

Celebrate Earth! uses the science of river systems for its knowledge base. River systems include rivers, lakes, and estuaries. They embrace almost the complete range of environmental processes and problems, so they provide knowledge that is transferrable to other environmental systems. In addition, water is an attractive and compelling venue for the experiential learning that is the basis of *Celebrate Earth!*.

Celebrate Earth! is designed to be used by individuals or in group contexts such as retreats and workshops. This edition of *Celebrate Earth!* is designed for people from high school age and above. You don't have to know anything about science or even be interested. We hope to inspire you to do both!



Why Is *Celebrate Earth!* Important?

We know that the whole creation has been groaning as in the pains of childbirth right up to the present time. Romans 8:22

We have not been faithful stewards of God's Creation.

Global climate change is causing significant impacts on all of Earth's water-related systems.



Pedersen Glacier, Glacier National Park, Montana

<https://www.demilked.com/global-warming-climate-change-photographic-proof-united-states-geological-survey/>

Climate change is one of many problems that demand our prayerful stewardship. Others include air and water pollution, habitat destruction, biodiversity declines, fisheries depletions, oceanic acidification, soil erosion and depletion, desertification, and the injustices and racism that accompany these. We have a lot of work to do!

Celebrate Earth! Expresses Core Commitments of The Episcopal Church

Justice, Peace and Integrity of Creation Committee A Statement of Mission

For our salvation and the sanctification of all: JPIC, Justice, Peace and Integrity of Creation, lives out the Baptismal Covenant by:

- ensuring equitable access to available resources, thereby enhancing the well-being of our communities;
- practicing peace and seeking reconciliation in a violent world;
- acting to eradicate the sin of racism in the church and in society;
- standing in partnership with those who are poor and oppressed to build a just society; and
- accepting our responsibility to actively care for God's good creation¹

The Way of Love

The overall concept of *Celebrate Earth!* is that Knowledge + Love = Wisdom. It draws on scripture and tradition, science, contemplation/meditation, and activities that help make those practical and tangible. Those are means to express and implement the seven elements of The Way of Love.



THE WAY OF LOVE²
Practices for Jesus-Centered Life

¹<https://acton.org/public-policy/environmental-stewardship/theology-e/episcopal-church-statement-environment>

²https://www.episcopalchurch.org/files/documents/wayoflove_brochure_spreads_english.pdf

How Can We Live on Earth with Wisdom and Love?

Matthew 22:37-39

³⁷ Jesus replied: “‘Love the Lord your God with all your heart and with all your soul and with all your mind.’^[a] ³⁸ This is the first and greatest commandment. ³⁹ And the second is like it: ‘Love your neighbor as yourself.’^[b]”

“Someday, after mastering the winds, the waves, the tides and gravity, we shall harness for God the energies of love, and then, for a second time in the history of the world, man will have discovered fire.”

(Teilhard de Chardin, *Toward the Future*. Mariner Books. 1975.)

Love-based Stewardship Principles for Earth

(Adapted from I Corinthians 13:4-7)

Patient: Accept natural processes.

Kind: Relate to our Earth Community neighbors with love.

Humble: Realize that we are stewards, not owners.

Tolerant: Learn to live within Earth’s pulses, flows, and occasional extravagances.

Accommodating: Make room for Earth’s processes rather than trying to control them.

Positive: Rejoice and celebrate life on Earth in its fullness.

Hopeful: Keep faith in the things we do not understand.

Resilient: Maintain your commitment to live in Wisdom.

Why Meditation?

It is said that prayer is speaking with God and meditation is listening to God. It is usually easier to speak than to listen. In any relationship we need to practice listening and this is true for meditation.

In meditation we are allowing our chattering thoughts to calm and move to silence, and silence is said to be the language of God.

In a calm, still point of our mind we move into the heart, which holds deep wisdom if we will only allow ourselves to access it.

There are many approaches to meditation: simply observing and listening, walking, repetition of sacred sounds, or deep silence, to name a few.

How to Move into Meditation

Sit quietly, comfortably, calmly.

Outdoors is great, especially near water, but anywhere quiet will be fine.

Close your eyes if you wish.

Relax with deep breathing:

Take several slow, deep, relaxing breaths in this pattern:

Exhale all the air out slowly by pressing your navel in.

Release the navel and let air flow in slowly and naturally on the inhale
Then pull more air in to the top of your lungs.

Pause a moment with the inhale.

Exhale again by slowly pressing all the air out with the navel.

Pause a moment with the exhale.

Release the navel and continue this method of breathing for at least three breaths.

Useful Methods of Meditation:

Lectio Divina

Read the suggested meditation through.

Recall a word that resonates with you.

Read the meditation again.

Recall a phrase that resonates with you.

Read the meditation once more.

Sit and contemplate on either the word or the phrase and what this means to you.

Contemplative Prayer as taught by Thomas Keating (*Open Mind, Open Heart*. Bloomsbury Academic)

This method is done with the eyes closed after reading the meditation.

Choose one word or choose your own sacred word or short phrase.

Repeat that word silently as a mental chant to clear your mind of any thoughts. Thoughts will come through, but do not attach to them; simply let them float on through. It does take practice as the mind can be very active!

Be creative and reflect on the reading in any way you wish.

Science and Meditation



Frio River, Texas

Franciscan spirituality teaches that the tangible material world is a gateway to the intangible spiritual world. *Celebrate Earth!* uses the ecology of rivers, lakes, and estuaries as our tangible gateway. The ecological concepts illustrated here apply to a wide variety of ecological systems.

Ecology is the study of the biological, geological, chemical, and cultural relationships that support life. Ecology comes from two Greek words – *oikos* and *logos*. *Oikos* includes both family and house, what we call *home*. *Logos* means *word*, so ecology is how we talk about our life on Earth, our island home. 12 Economics has a similar meaning. It is about home (*oikos*) management (*nómos*).

Meditation

When I fear I have done wrong,
when I look to those who are less than wise,
when I forget transcendence and kneel in the meanings
of color and shadow,
when I tell lies to my soul,
I seek out water, I follow its charm – a river, a stream,
a lake with its springs and currents.
See how it offers life
as it flawlessly flows and forms
to the shape of this world, the contours of land, the urge
of earth,
hear how it sings under the sun
of endless evaporation.

Chris Ellery in honor of John the Baptist
Published in Richard Rohr's *Eager to Love*, Franciscan Media,
Cincinnati, OH. 2014.

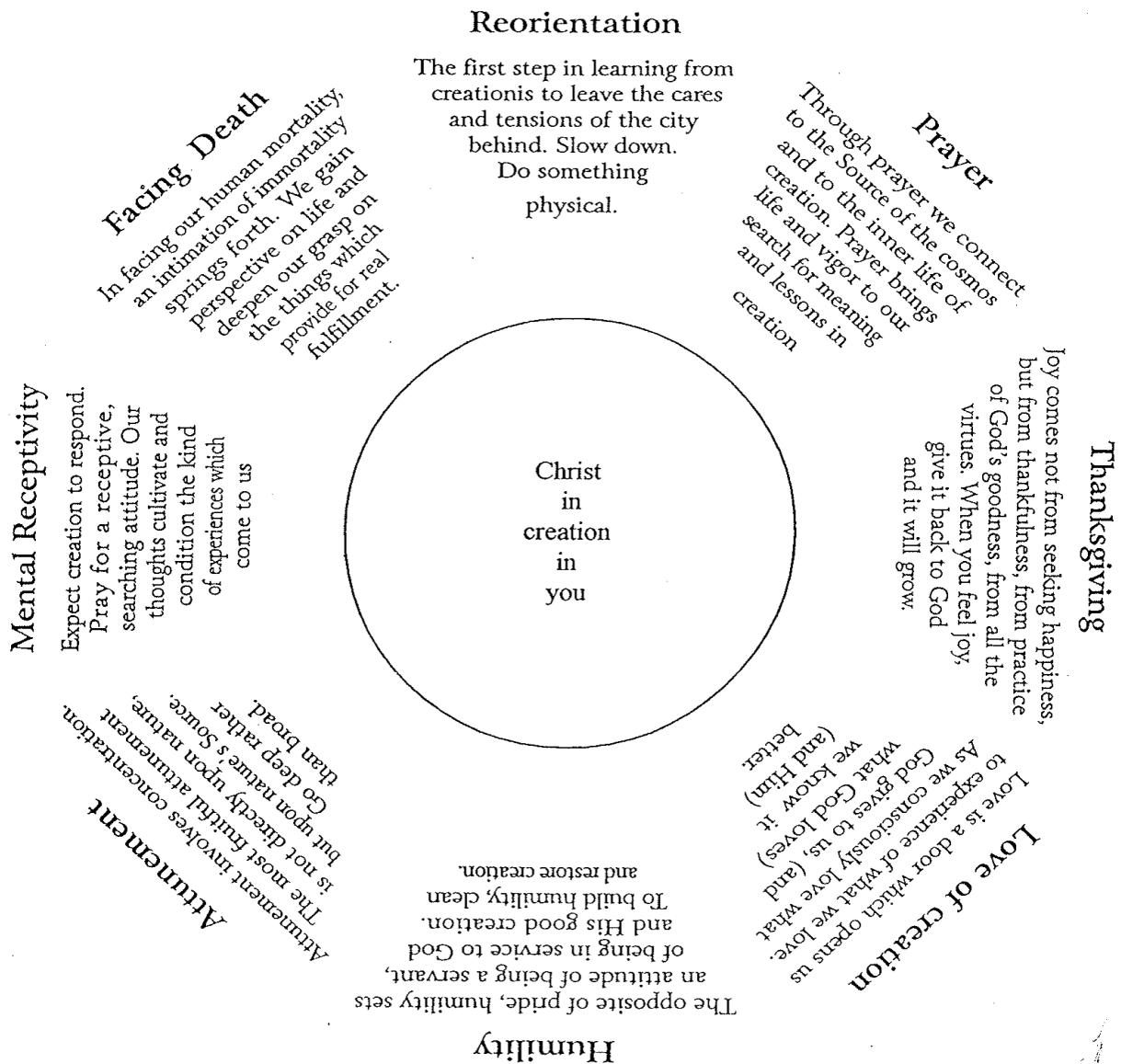


Contemplate and meditate

Contemplation and meditation open us to deep meanings and perspectives, of which we are unaware in our busy daily lives. Elizabeth Barrett Browning wrote

*Earth's crammed with heaven,
And every common bush afire with God,
But only he who sees takes off his shoes;
The rest sit round and pluck blackberries.*

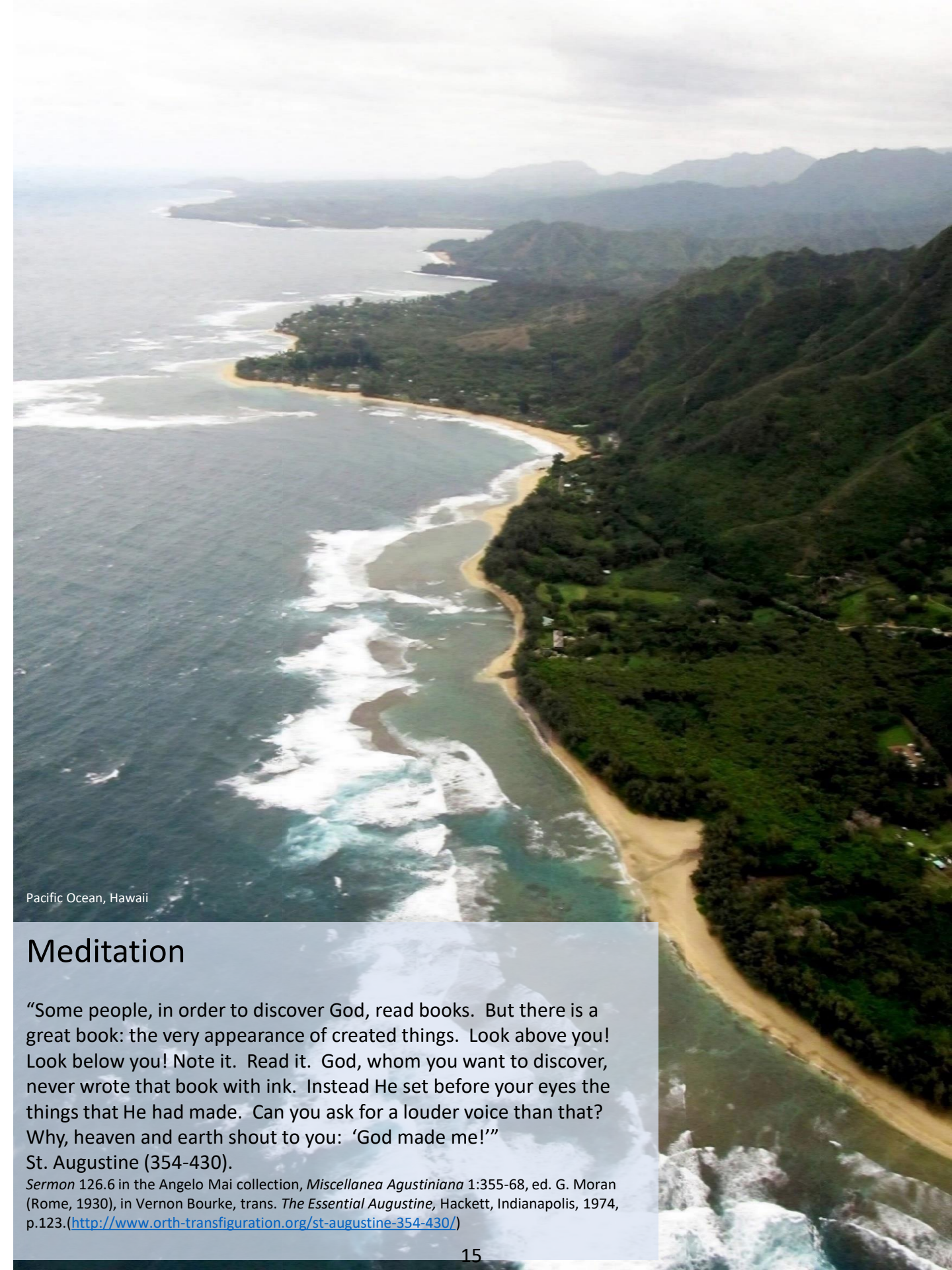
Contemplation and meditation are “taking off (our) shoes.”



Primary Keys for Learning from Nature

from the Opening the Book of Nature Program of the National Religious Coalition on Creation Care

http://nrccc.org/site/Topics/Resources/BookNature/Book-of-Nature_Main.html



Pacific Ocean, Hawaii

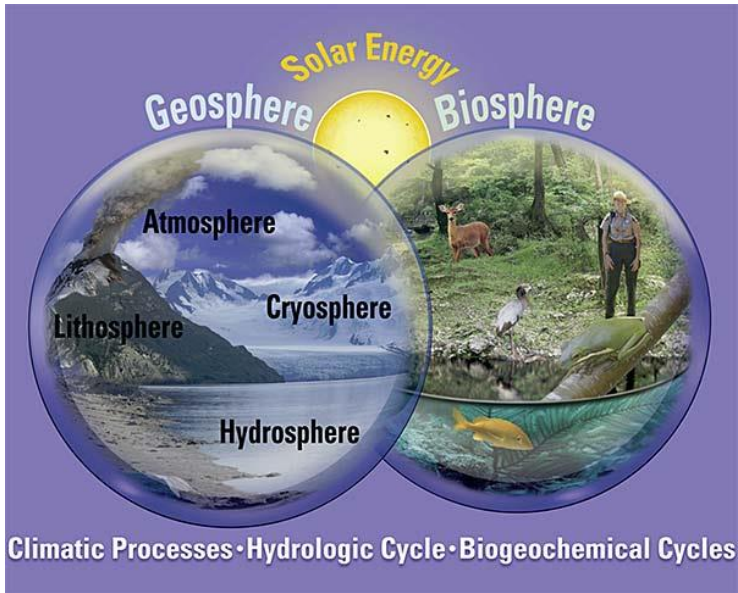
Meditation

“Some people, in order to discover God, read books. But there is a great book: the very appearance of created things. Look above you! Look below you! Note it. Read it. God, whom you want to discover, never wrote that book with ink. Instead He set before your eyes the things that He had made. Can you ask for a louder voice than that? Why, heaven and earth shout to you: ‘God made me!’”

St. Augustine (354-430).

Sermon 126.6 in the Angelo Mai collection, *Miscellanea Agustiniana* 1:355-68, ed. G. Moran (Rome, 1930), in Vernon Bourke, trans. *The Essential Augustine*, Hackett, Indianapolis, 1974, p.123. (<http://www.orth-transfiguration.org/st-augustine-354-430/>)

Earth Embodies Wisdom



<http://www.fl-pda.org/independent/courses/elementary/science/section3/3c3.htm>

Modern scientists, cosmologists, and theologians use a variety of concepts to describe what appears to be the ancient view of Wisdom.

Ervin László. *The Self-Actualizing Cosmos*. Simon & Schuster, 2014.

Brian Swimme. *The Journey of the Universe*. Yale University Press, 2011.

Pierre Teilhard de Chardin. *Toward the Future*. Harcourt Brace Jovanovich, 1973.

Thomas Berry. *Evening Thoughts: Reflecting on Earth as Sacred Community*. Sierra Club, 2006.

William P. Brown. *Wisdom's Wonder: Character, Creation, and Crisis in the Bible's Wisdom Literature*, William B. Eerdmans. 2014.

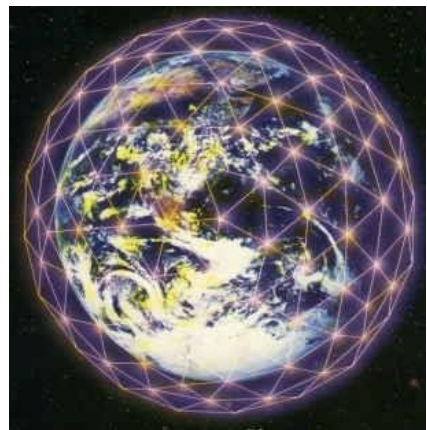
Reorientation

How can you reorient yourself to relate to the Wisdom of our Earth?

Earth is a set of complex interacting systems that has supported life and its amazing evolution for billions of years. It continues to do this via the wisdom of those systems, wisdom that allows them to maintain balance (resilience) within constant change.

This resilience is the product of diversity and effective feedback controls. Earth's Wisdom has evolved and maintains a huge variety of energy pathways so that if one fails there are others to maintain the systems. It also uses negative feedback loops to prevent any one part of a system from going out of control.

Being created in the image and likeness of God, we humans have the consciousness and power to modify Earth's systems, possibly to the point that they cannot maintain their resilience. Our stewardship responsibility is to understand and work within the wisdom of Earth's systems to maintain their resilience.



A visual depiction of the invisible noosphere.

Pierre Teilhard de Chardin used the term "noosphere" to try to articulate the mystical concept.

The term noosphere derives from the Greek νοῦς (nous "mind") and σφαῖρα (sphaira "sphere"), and is related to the terms geosphere (inanimate matter) and biosphere (biological life). Under Teilhard's vision, God created the Big Bang, which created an evolutionary process starting with the energy of the Big Bang leading to increasing "complexification" to matter, to initial life forms, to human consciousness, to a collective human consciousness (the noosphere).

<https://teilhard.com/2013/08/13/the-noosphere-part-i-teilhard-de-chardins-vision/>



Straits of Georgia, British Columbia

Meditation

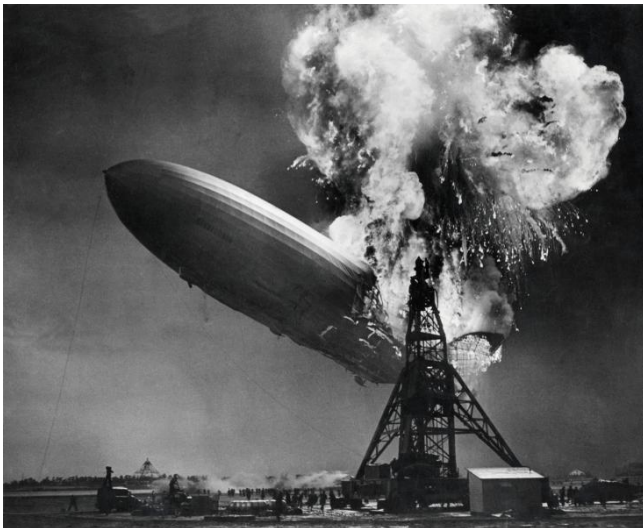
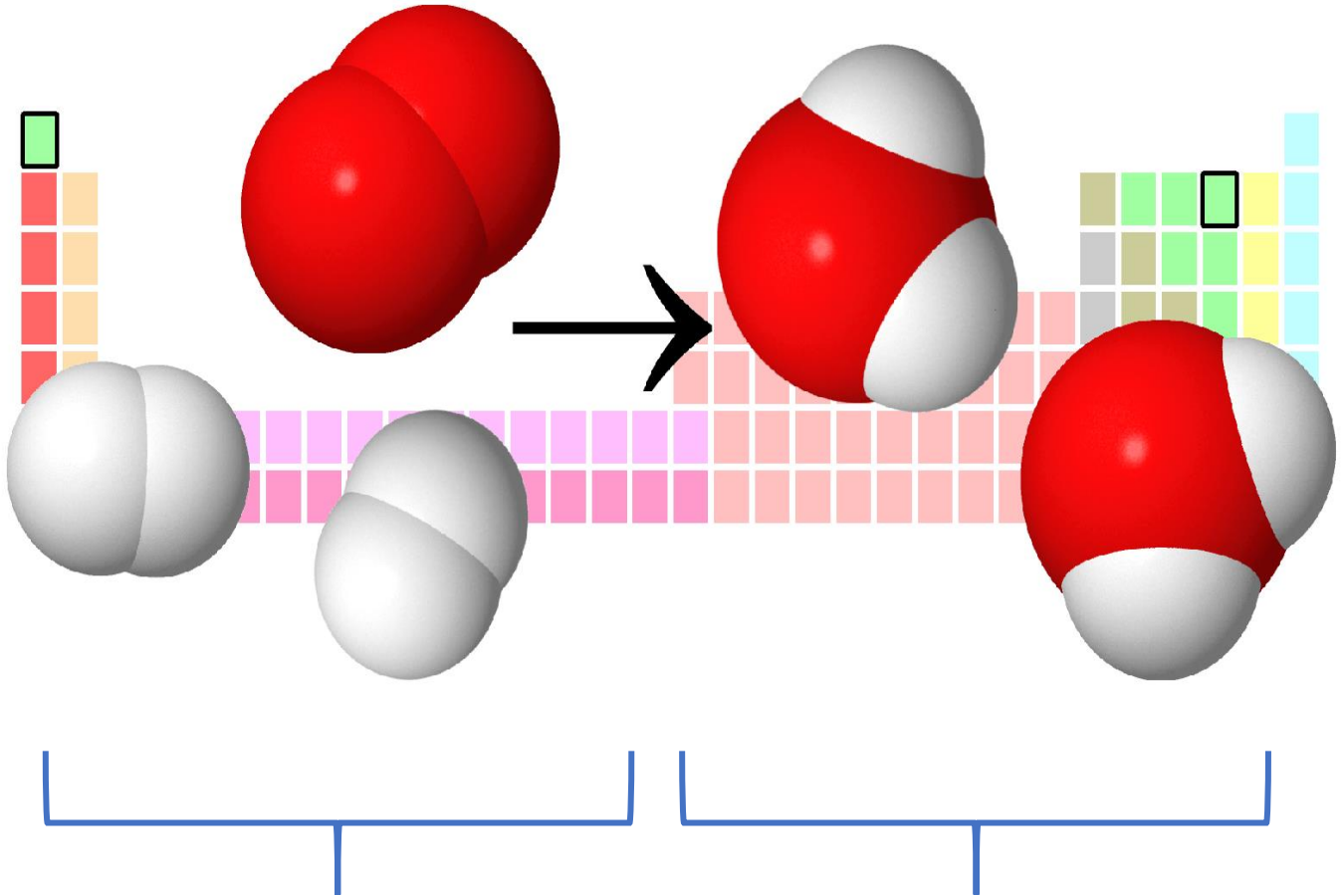
Wisdom's Part in Creation

²² The LORD created me at the beginning of his work, the first of his acts of long ago. ²³ Ages ago I was set up, at the first, before the beginning of the earth. ²⁴ When there were no depths I was brought forth, when there were no springs abounding with water. ²⁵ Before the mountains had been shaped, before the hills, I was brought forth—²⁶ when he had not yet made earth and fields, or the world's first bits of soil. ²⁷ When he established the heavens, I was there, when he drew a circle on the face of the deep, ²⁸ when he made firm the skies above, when he established the fountains of the deep, ²⁹ when he assigned to the sea its limit, so that the waters might not transgress his command, when he marked out the foundations of the earth, ³⁰ then I was beside him, like a master worker; and I was daily his delight, rejoicing before him always, ³¹ rejoicing in his inhabited world and delighting in the human race. ³² "And now, my children, listen to me: happy are those who keep my ways. ³³ Hear instruction and be wise, and do not neglect it. ³⁴ Happy is the one who listens to me, watching daily at my gates, waiting beside my doors. ³⁵ For whoever finds me finds life and obtains favor from the LORD; ³⁶ but those who miss me injure themselves; all who hate me love death. Proverbs 8:22-36

The Nature Of Water

When separate, hydrogen and oxygen are explosive.

When combined, hydrogen and oxygen form water, which is essential for life.





Guided Meditation

Sit quietly and comfortably.

Take three slow, deep, relaxing breaths.

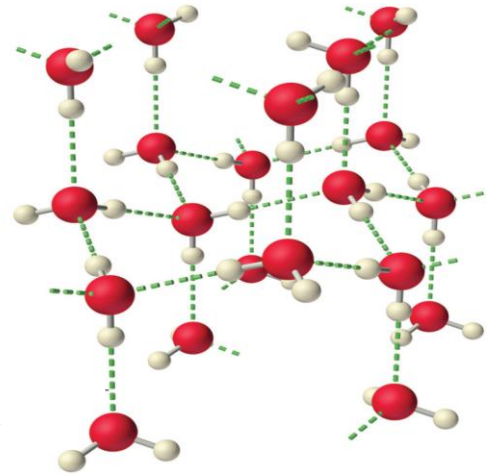
Nature of Water

- 1) Notice or remember how water smells.
 - 2) Notice or remember how water feels.
 - 3) What sensations do you have?
 - 4) What memories do you have?
 - 5) What makes you feel this way?
-
- 1) Visualize a baptism, yours or another's.
 - 2) Is the water cool as in a river or warmer as in a font?
 - 3) Visualize how you are transformed by this sacrament.
 - 4) How can this transformation extend to your daily life?
-
- 1) Visualize the many ways you use water every day.
 - 2) Bring to your awareness the sacredness of each use.
 - 3) Be thankful for the many wonders of water.

Jerry Touchstone Kimmel

Water's Unique Characteristic That Makes Life on Earth Possible

As most substances cool, their molecules fit more closely together and they become denser. Water does that until just before it freezes. Then its molecules combine in a lattice form that keeps them farther apart, thus making ice lighter than liquid water. So an iceberg or our ice cube floats.



If water behaved like all other substances and ice sank, much of the world's water would remain frozen because it would never reach warm air. If that were the case, life as we know it would be impossible.

Thanksgiving

There are obvious practical reasons to be thankful for water. But think of ways water brings you joy.

Meditation

Yonder is the sea, great and wide, creeping things innumerable are there, living things both small and great.

There go the ships, and Leviathan that you formed to sport in it.

These all look to you to give them their food in due season; when you give to them, they gather it up; when you open your hand, they are filled with good things.

When you hide your face, they are dismayed; when you take away their breath, they die and return to their dust.

When you send forth your spirit, they are created; and you renew the face of the ground.

May the glory of the Lord endure for ever; may the Lord rejoice in his works—I will sing to the Lord as long as I live; I will sing praise to my God while I have being.

May my meditation be pleasing to him, for I rejoice in the Lord.

Psalm 104:25-34

Rivers Can Be Our Laboratories

Rivers are whole but definable, diverse, and dynamic systems that are essential to life and intimately related to humans. We can learn concepts from rivers that will help us understand all of Earth's ecological systems.



Mississippi River

This map of the Mississippi River watershed illustrates just a few of the many factors and processes that combine to form this great river. Melting snow in the north, hurricanes in the Gulf, droughts in the southwest, mountains, prairie grasslands, forests, agriculture, and urbanization – all of these factors and many more determine the character of the river.

Love of Creation

How can your love of creation open doors for greater love within yourself?



Meditation

The earth is at the same time
mother,
She is mother of all that is natural,
mother of all that is human.
She is the mother of all,
For contained in her
are the seeds of all.

The earth of humankind
contains all moistness,
all verdancy,
all germinating power.

It is in so many ways
fruitful.
All creation comes from it.
Yet it forms not only the basic
raw material for humankind,
but also the substance
of the incarnation
of God's son.

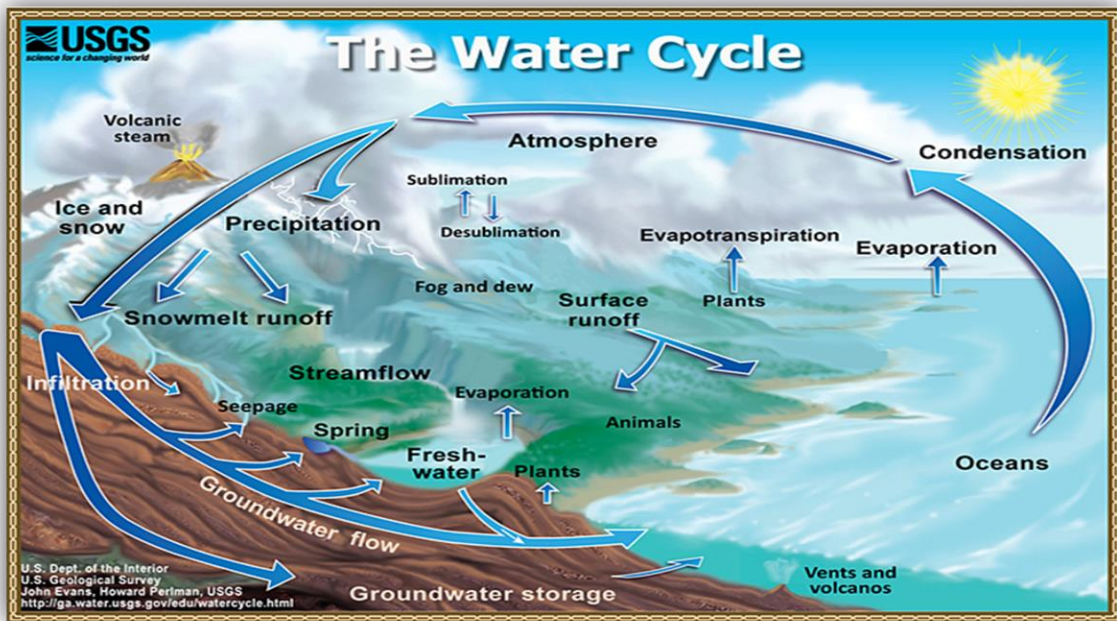
Hildegard of Bingen in Elizabeth Roberts and Elias
Amidon (eds.). *Earth Prayers from Around the
World*. HarperSanFrancisco. 1991. p. 45.

Where Does the Water Come From?

As shown below, water **evaporates** from oceans into the **atmosphere**. Water also evaporates from the land and is released from plants (**evapotranspiration**). It rises in the atmosphere, **condenses**, and returns to Earth as **rain, snow**, or other **precipitation**. Some soaks into the soil where it is available to plants. Other water **infiltrates** deep into the ground and is called **groundwater**. Groundwater may flow underground and come to the surface as **seeps** and **springs**. Groundwater may remain in the ground in groundwater storage, called an aquifer.

Ultimately, most of the water flows back to the oceans via rivers and the journey repeats itself. Most of the water in rivers comes from runoff of precipitation, including snow melt, plus groundwater from springs and seepage from aquifers.

The amounts and timing of precipitation depend on overall climate and individual storm events.



Where is Earth's water?

- 96.8% oceans, seas, and bays
- 1.74% ice caps, glaciers, permanent snow
- 1.69% groundwater
- 0.001% soil moisture
- 0.013% lakes
- 0.0002% rivers
- 1.5% small storages

Our lives depend on only 1.7% of Earth's water.

<https://water.usgs.gov/edu/earthwherewater.html>

Prayer

How do you connect through prayer to your source? Can you visualize a "prayer cycle" similar to the water cycle?

Meditation

I feel my soul
Release the tension
Of a human life
As the desert storm
Releases its fragrance
With passing rain.
I feel a connection
Of energies
As air cools
And gently moves
In now sunlit space
Of peace and calm
As thunder's rumble
Sinks to silence.

Jerry Touchstone Kimmel



Watershed

Most simply, a river is water running downhill. A watershed, or catchment basin as the British call it, is the geographic area from which a single surface drainage system receives its flow. The dividing line between drainages establishes the watershed boundary.

As water flows downhill it concentrates into channels, first small then combining ultimately to form the main channel.



http://www.ce.utexas.edu/prof/maidment/giswr2010/Ex2/Ex2_2010.htm

Attunement

How can you attune yourself to Creation's source, God? How do the many streams and tributaries of life bring you to a deeper connection to your Source?

Meditation

We give you thanks, most gracious God, for the beauty of earth and sky and sea;
for the richness of mountains, plains, and rivers;
for the songs of birds and the loveliness of flowers.

We praise you for these good gifts,
and pray that we may safeguard them for posterity.

Grant that we may continue to grow in our grateful enjoyment of your abundant creation,
to the honor and glory of your Name,
now and for ever. Amen.

Thanksgivings for the Natural Order - For the Beauty of the Earth p 840



Chama River, New Mexico

Fluvial Geomorphology: Water Runs Downhill

(Science isn't hard. It just uses fancy words.)

Fluvial geomorphology is the **study of how running water shapes the land**. The term is useful for impressing our friends, but the concept is one of the keys to understanding rivers. Fluvial geomorphology is continual transformation and renewal.

Flowing water picks up things and carries them downstream. The faster the flow, the larger the things it can carry. River scientists call this **erosion** and **transport**. When the flow slows down the water cannot carry so much and drops part or most of its load. This is called **deposition**. By these processes flowing water shapes the landscape

As water runs down a channel it will erode, transport, and deposit materials depending on the velocity of the water and the availability of things to pick up and carry. Anything that slows the flow, such as a log lodged in the river's channel, will cause the water to drop its load, thus forming a **channel bar**.



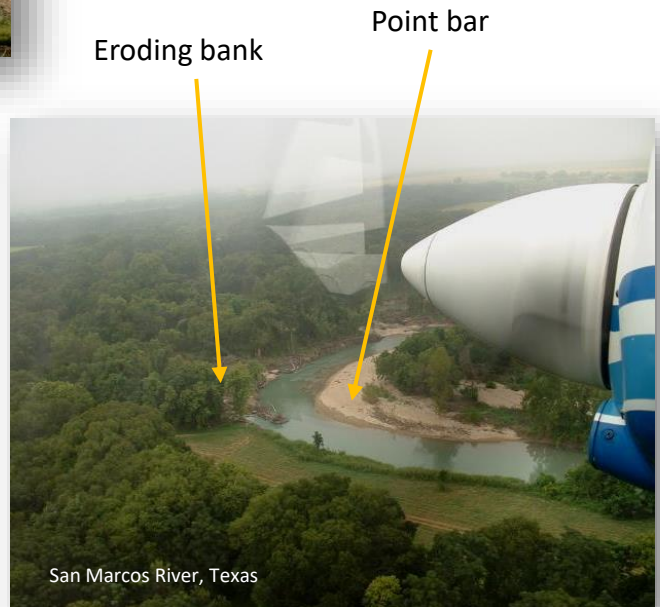
Chama River, New Mexico

Channel bar

Channel migration

Water moves more slowly on the inside of a curve and faster on the outside. The slower moving water drops part of its sediment load, forming a **point bar**.

The faster moving water erodes the bank. These two processes together cause the **channel to migrate toward the outer bank**.



Eroding bank

Point bar

San Marcos River, Texas

Facing Death

How does facing death, letting things go, move you to deeper perspectives of being? What can you let go of to allow yourself to transform?



Colorado River, Arizona

Meditation

Do not trust rocks. A rock resting on the rim of the Grand Canyon may give an impression of strength and permanence, but as soon as a man turns his back the rock will resume disintegrating and sneaking off to California. And it is not only that particular rock that is unreliable. Every rock everywhere is growing smaller or larger, rising up or sinking down, or creeping around the planet in a scandalous manner.

Robert Wallace. *The Grand Canyon*. Time-Life American Wilderness Series. 1972.

River Cross-Section Dynamics

In addition to the changing river curves described earlier, rivers also have **dynamic cross-section shapes**. The channel varies in depth, usually shallow on the inside of a curve to deeper on the outside. This is due to the same erosion and deposition processes that cause the channel to migrate. The channel also **varies in depth due to the amount of flow**. The river may vary from very little water in times of low flow, to being **bankfull** in times of high flow.

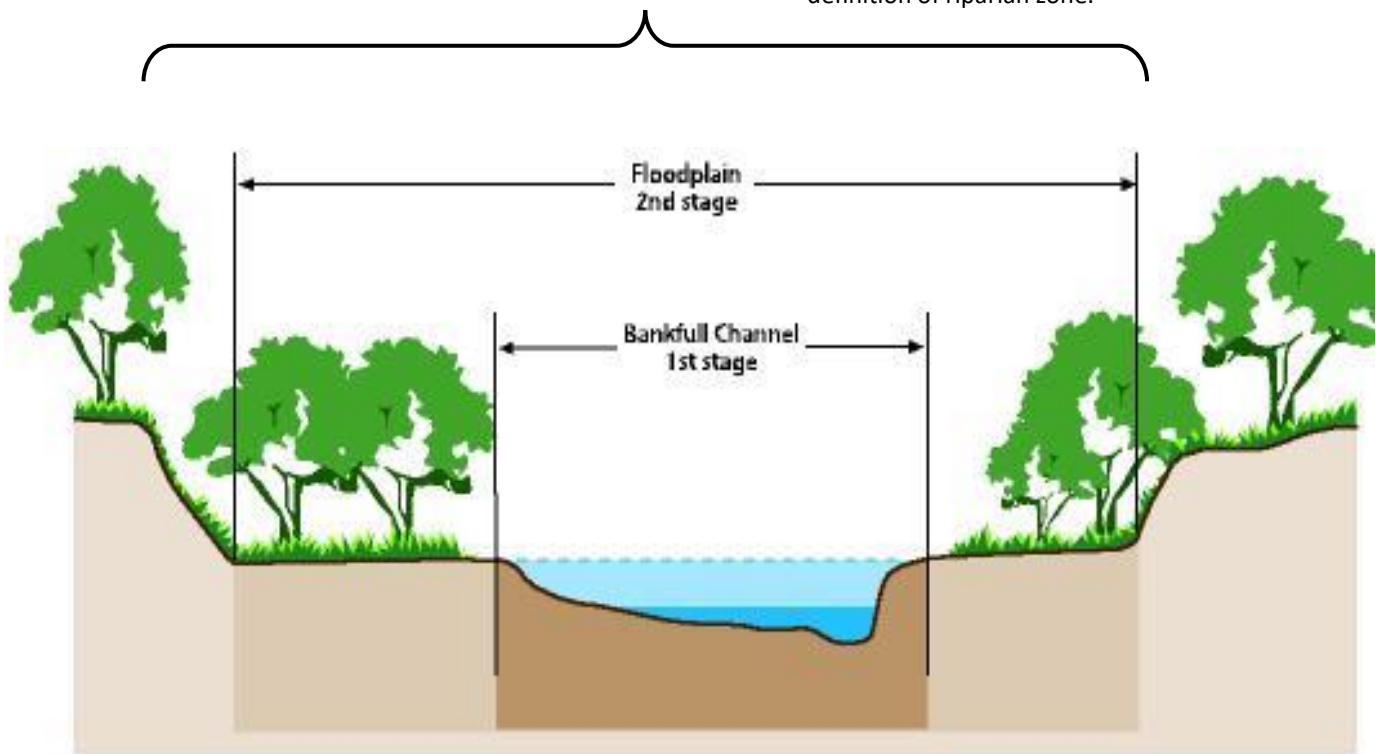
But rivers do not always stay in their channel. On a very general average, **a river will likely go out of its banks about every 18 months and go into its floodplain**. That's why you don't want to build your house there!

Forget about 10-year, 50-year, and 100-year floods!

Floods don't happen only at such regular intervals. Those numbers refer to the probability of a flood of various sizes occurring in a given year. Based on statistical analysis of a river, hydrologists estimate that a flood of a certain size has a probability of occurring. Thus, a "10-year flood" has a 10% probability of occurring in any given year, a "50-year flood" has a 2% probability, and a "100-year" flood has a 1% probability. But the climate is highly variable, so there is no guarantee that it will be 100 years between those "100-year" floods. Climate change is changing flood behavior, both in size and frequency.

Riparian Zone

The **riparian zone** is the transition between the drier uplands and the land that is kept more moist by the river. There is not a precise definition of riparian zone.



Humility

How can you use humility to weather the high and low "flows" of life? How can your experiences make you a better servant to Creation?



Meditation

I will open rivers on the bare heights,
and fountains in the midst of the
valleys;

I will make the wilderness a pool of
water, and the dry land springs of
water.

I will put in the wilderness the cedar,
the acacia, the myrtle, and the olive;

I will set in the desert the cypress,
the plane and the pine together, so
that all may see and know, all may
consider and understand, that the
hand of the Lord has done this,
the Holy One of Israel has created it.

Isaiah 41:18-20

Variations Along the River's Course

Physical differences along a river's course affect its biological diversity.

The **upper reaches** are narrow and shaded. Shade limits aquatic plant production, so the food web is based on organic matter washed into the river.



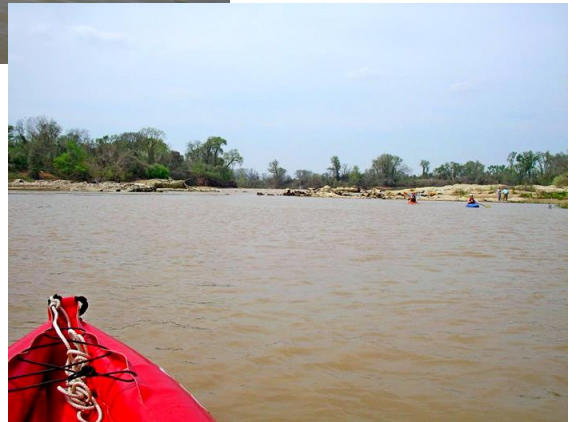
Gar and catfish are scavenger species that thrive in the upper and lower parts of many rivers.



Bass and trout need the clearer waters of the middle reaches where there is an abundance of other species to prey on.



The **middle reaches** are relatively shallow and clear. Light penetrates the water and supports primary production via photosynthesis, so aquatic vegetation may be abundant and support a large animal community.



Mental Receptivity

What variations in your life experience have helped you to be receptive to the realization that all things are interconnected?

In the **lower reaches**, unclear (turbid) water limits light penetration. There are few submerged plants because they cannot get sufficient light to survive. Thus, the primary food source is organic waste from upstream species. This makes for a very different set of organisms that can survive here.



Meditation

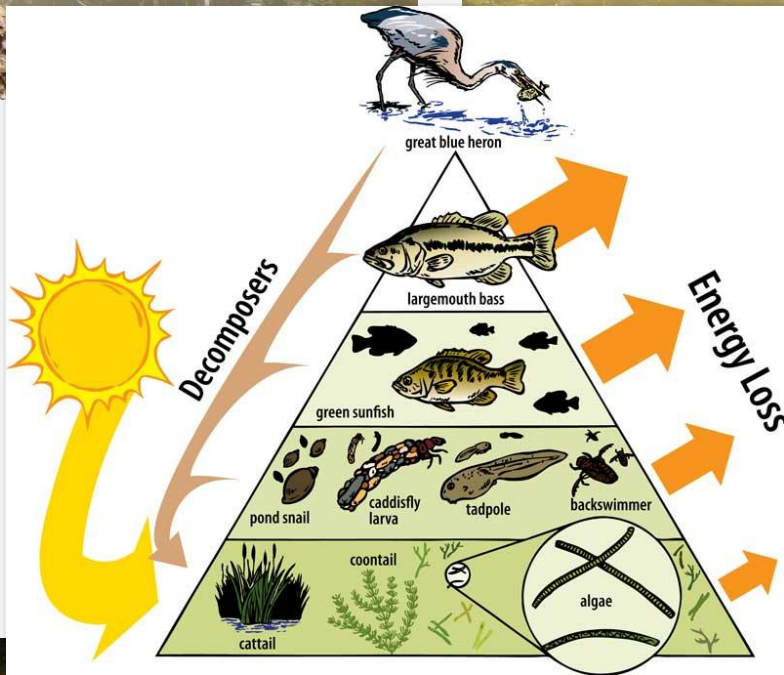
We thank you, Almighty God, for the gift of water.
Over it the Holy Spirit moved in the beginning of creation.
Through it you led the children of Israel out of their bondage
in Egypt into the land of promise.

In it your Son Jesus received the baptism of John and was
anointed by the Holy Spirit as the Messiah, the Christ, to lead
us, through his death and resurrection, from the bondage of
sin into everlasting life. We thank you, Father, for the water
of Baptism. In it we are buried with Christ in his death. By it
we share in his resurrection. Through it we are reborn by the
Holy Spirit.

Book of Common Prayer p. 306

Biological Diversity

Rivers have high biodiversity because the processes described in the previous pages create a variety of physical habitats.



Love is Kindness

How can you better relate to the whole Earth Community?

Meditation

Canticle of the Creatures

Francesco di Assisi, 1224

Most High, all powerful, good Lord,
Yours are the praises, the glory, the honor, and all blessing.
To You alone, Most High, do they belong, and no man is
worthy to mention Your name.

Be praised, my Lord, through all your creatures, especially
through my lord Brother Sun, who brings the day; and you
give light through him.

And he is beautiful and radiant in all his splendor!
Of you, Most High, he bears the likeness.

Praised be You, my Lord, through Sister Moon and the
stars, in heaven you formed them clear and precious and
beautiful.

Praised be You, my Lord, through Brother Wind, and
through the air, cloudy and serene, and every kind of
weather through which

You give sustenance to Your creatures.

Praised be You, my Lord, through Sister Water, which is
very useful and humble and precious and chaste.

Praised be You, my Lord, through Brother Fire, through
whom you light the night and he is beautiful and playful
and robust and strong.

Praised be You, my Lord, through Sister Mother Earth, who
sustains us and governs us and who produces varied fruits
with colored flowers and herbs.

Praised be You, my Lord, through those who give pardon
for Your love, and bear infirmity and tribulation.

Blessed are those who endure in peace for by You, Most
High, they shall be crowned.

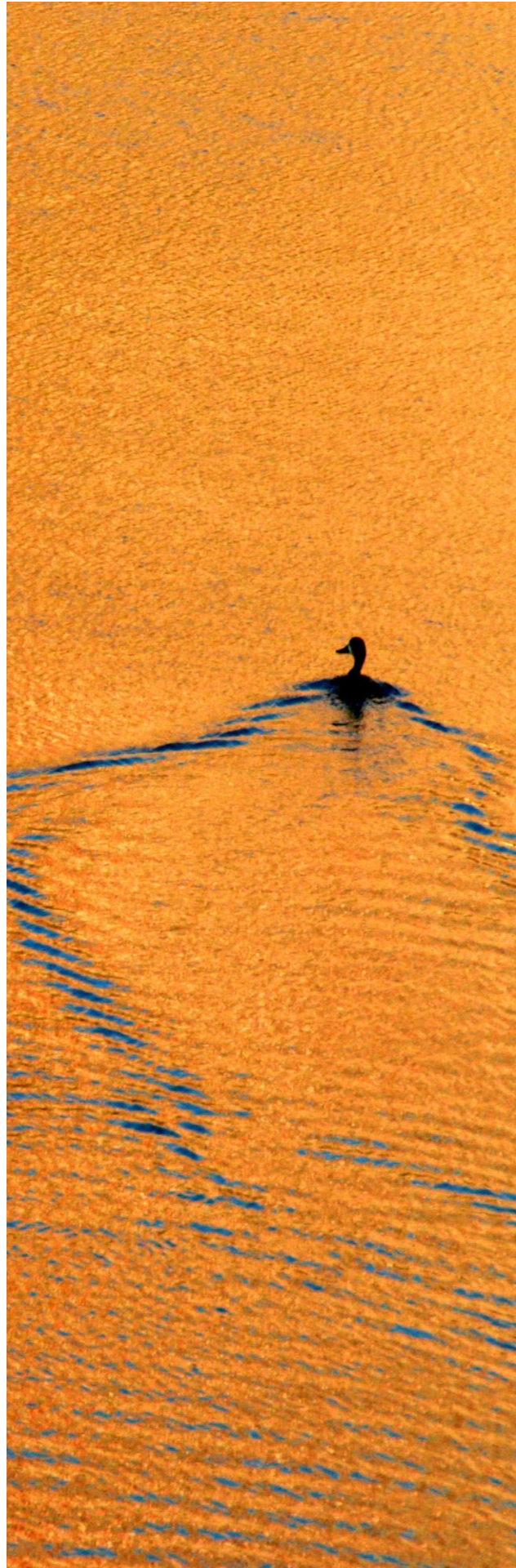
Praised be You, my Lord, through our Sister Bodily Death,
from whom no living man can escape.

Woe to those who die in mortal sin.

Blessed are those whom death will find in Your most holy
will, for the second death shall do them no harm.

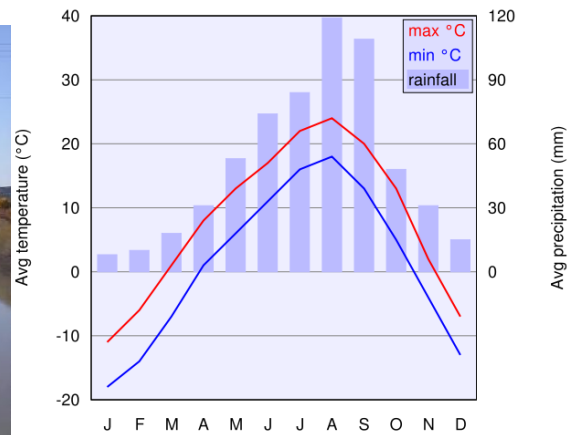
Praise and bless my Lord, and give Him thanks and serve
Him with great humility

<http://www.appleseeds.org/canticle.htm>



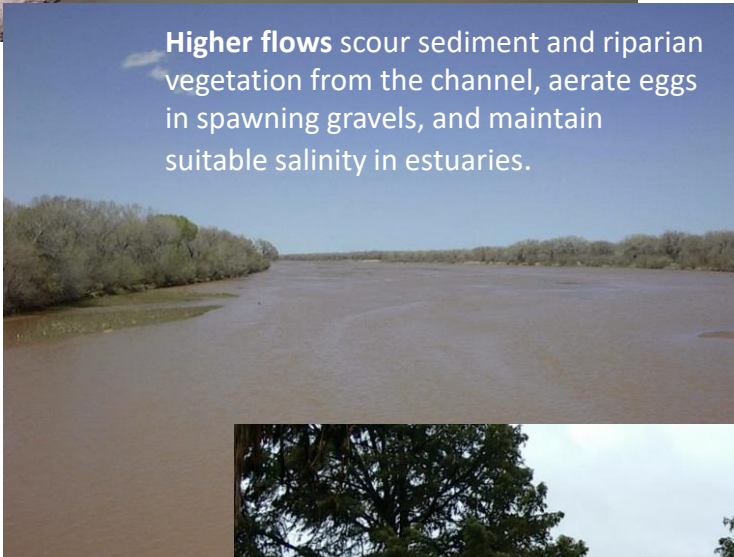
Natural Flow Variations Have Ecological Functions

Low flows purge invasive species from aquatic and riparian communities.



Many places have **distinct seasonal rainfall patterns**. Plants and animals in the river system adapt to these patterns and depend on them, especially for reproduction.

Higher flows scour sediment and riparian vegetation from the channel, aerate eggs in spawning gravels, and maintain suitable salinity in estuaries.



Large floods enable reproduction and feeding for fish and waterfowl; maintain floodplain nutrients, habitats, and diversity; and flush organic materials (food) and woody debris (habitat structures) into the channel.



Love is Tolerant

Can you accept all natural processes as a part of the whole of Creation?



Guided Meditation

- 1) Visualize a time of extended drought, plants wilted and dying, rivers and lakes dried up, your own deep thirst.
 - 2) Visualize a small cloud appearing, offering hope. Imagine how you and the land feel as it passes on by.
 - 3) Then visualize the sky filling with rain clouds, the air turns cooler and smells of rain.
 - 4) Imagine standing outside in the open air as the first drops begin to fall.
 - 5) How does your soul rejoice in this moment? Imagine how the Earth responds too.
-
- 1) Think of a time in your own life when hope, prayers, and/or love from a dear friend or loved one helped you through a difficult time.
 - 2) Think of a time when you gave this help to a friend.
 - 3) What does “love your neighbor as yourself” mean to you?

Jerry Touchstone Kimmel

Do you like to breathe?

A river's muddiness contains essential nutrients for marine photosynthesis, which produces 50 to 85% of Earth's oxygen.

Guided Breath Meditation

Long, deep breathing

- 1) Inhale slowly, deeply filling your lungs.
- 2) Exhale slowly, press your navel in, pushing all the air out.
- 3) Slowly relax your navel, allowing air to naturally flow in and fill your lungs.
- 4) Continue this pattern for two more breaths.

Awareness of your breath

- 1) Continue this breathing pattern and be aware of the air as you slowly breathe in and out.
- 2) Notice how the inhale feels.
- 3) Notice how the exhale feels.
- 4) Are they warm or cool?
- 5) Are they calming?

Deep relaxing breath pattern

- 1) Now slowly take four gentle sniffs in through the nose.
- 2) Hold your breath for four counts.
- 3) Exhale slowly in four gentle puffs out the nose.
- 4) Continue this pattern for several breaths, letting your whole being relax.

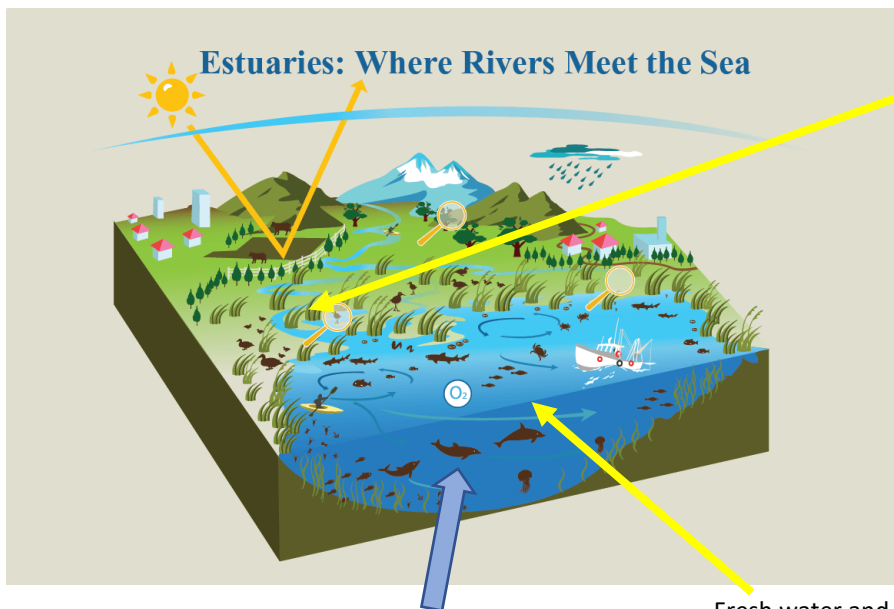
Sit and breathe naturally and quietly for as long as you wish.

Jerry Touchstone Kimmel

Estuaries

An estuary is a bay where fresh water from a river mixes with saline water from the ocean. The resulting range of salinities provides habitats and nursery sites for a great variety of marine life, including shrimp, crabs, snappers, tarpon, sea trout, red drum, and many others. Consequently, estuaries are crucially important to the productivity and health of ocean ecosystems.

Estuaries are fragile. They are especially vulnerable to pollution and reduction of freshwater inflow. But the health of an estuary depends on human actions upstream, maybe hundreds of miles from the estuary.



Fresh water inflow

The estuary at the river's mouth culminates the river's work of transporting nutrients and fresh water to the ocean.

<https://coast.noaa.gov/estuaries/curriculum/climate-extension.html>

Sea water inflow

Fresh water and sea water mix.

Love is Patient

Can you be patient in your own growth process as the relationships of all things unfold?

An aerial photograph of a coastal estuary, likely in Texas. The image shows a complex network of waterways and marshlands. A bright sun is low on the horizon, creating a strong, shimmering reflection that dominates the right side of the frame. The water is a mix of dark and light tones, reflecting the sky and the sun. The land areas are dark and textured, showing the intricate patterns of the estuary's geography.

Guided Meditation

- 1) Imagine your heart as an estuary.
- 2) Imagine love as a birthing place in your heart.
- 3) What thoughts or ideas can you “birth” from this love? Be specific.
- 4) How will this make our world a better home?
- 5) How will this make you a better follower of Jesus?

Jerry Touchstone Kimmel



San Antonio Bay in Texas is the estuary of the Guadalupe River and the winter nesting site of the endangered Whooping Crane. Freshwater from the Guadalupe River supports the population of blue crabs, which are a major part of the cranes' diet.

Estuaries depend on fresh water and nutrients from rivers for their biological richness. Any disruption of river flow harms the estuary. The health of the estuary is the ultimate test on how we care for the river.



Meditation

You are above me, O God,
You are within.
You are in all things
Yet contained by no thing.
Teach me to seek you in all that has life
That I may see you as the Light of Life.
Teach me to search for you in my own depths
That I may find you in every living soul.

J. Philip Newell. *Sounds of the Eternal: A Celtic Psalter*.
William B. Eerdmans Publishing Company. 2002. p. 2.

Humans and Rivers from Prehistory...



...to Today



Rivers are fundamental to civilization, but almost all of our relationships with rivers involve modifications or pollution that significantly affect the river. Natural river processes can actually remove pollutants, but that capacity is limited.



Mississippi River, Missouri

Meditation

That in the elements of earth, sea and sky
I may see your beauty,
that in wild winds, birdsong and silence
I may hear your beauty,
that in the body of another and the interminglings
of relationship
I may touch your beauty,
that in the moisture of the earth and its flowering
and fruiting
I may smell your beauty,
that in the flowing waters of springs and streams
I may taste your beauty,
these things I look for this day, O God,
these things I look for.

J. Philip Newell. *Sounds of the Eternal: A Celtic Psalter*.
William B. Eerdmans Publishing Company. 2002. p. 41.

Human Modifications of Rivers

Humans have modified rivers for thousands of years to make them more useful for water supplies, navigation, water power, flood reduction, and other purposes. These modifications all change and usually damage the natural processes of rivers, especially affecting their biodiversity, biological productivity, and resilience. However, the benefits to society can be quite important. All life forms modify their environments. Because of our great power to change things, we must use wisdom and make our modifications in as loving a way as possible.

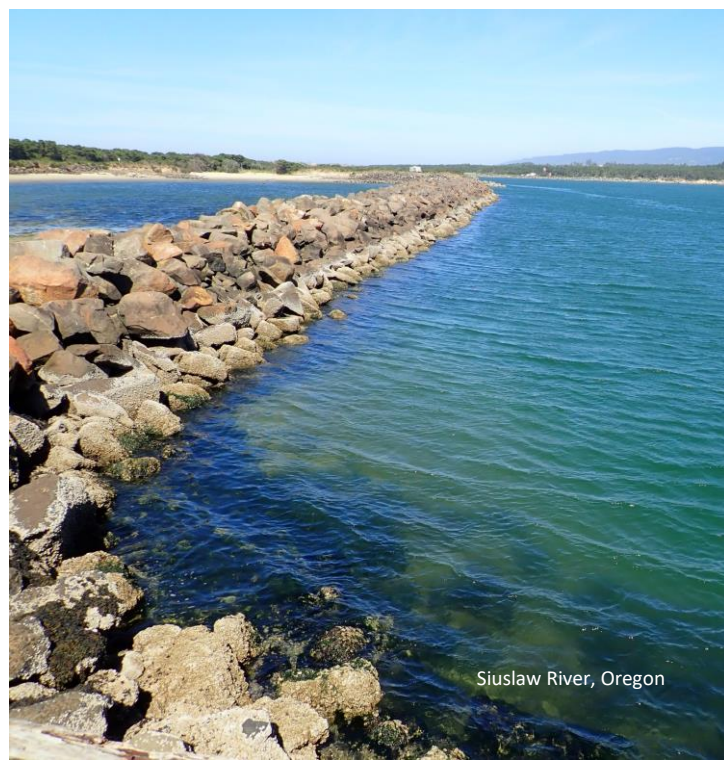


When a river is dammed, it no longer functions as a river hydrologically or ecologically. The purpose of a dam is to regulate the flow of a river, but a natural river system depends on wide variations in flow.

Rivers are often channelized to maintain sufficient depth for shipping. However, dredging shallow parts of a river removes most of its complex habitats that support the variety of life found in a natural river.

Love is Humble

May we be humble in knowing we are stewards and not owners of our Earth.



Siuslaw River, Oregon



Gulf Intracoastal Waterway, Louisiana

Meditation

In the gift of this new day,
in the gift of the present moment,
in the gift of time and eternity intertwined
let me be thankful
let me be attentive
let me be open to what has never happened before,
in the gift of this new day,
in the gift of the present moment,
in the gift of time and eternity intertwined.

J. Philip Newell. *Sounds of the Eternal: A Celtic Psalter*. William B. Eerdmans Publishing Company. 2002. p. 53.

Climate Change and River Systems

Global climate change is real and serious. Our purpose here is not to debate its possible causes, but to understand how it affects river systems.

- Earth's average surface temperature has increased 1.62 degrees F since the late 19th century
- Most of the warming occurred in the past 35 years
- Five warmest years on record have been since 2010
- Warmest year on record was 2016

<https://climate.nasa.gov/evidence/>

Effects of climate change on river systems

- More rain than snow, causing mountain snowpack to melt earlier, reducing available water for summer months
- Increased frequency and volume of floods
- Increased evaporation from surface water
- Lower water levels in rivers, lakes, and streams
- Increased polluted runoff
- Increased fish kills and reduced biodiversity due to more algal blooms and reduced dissolved oxygen levels
- Decreased biological production in estuaries due to both diminished and excessive freshwater inflows and timings that do not conform to long-evolved seasonal patterns.

<https://www.americanrivers.org/threats-solutions/clean-water/impacts-rivers/>



Low water, Colorado River

<https://www.flickr.com/photos/canyonlandsnps/8593044701/in/album-72157633047629760/>

Love is Resilient

With the many changes in the world,
may you maintain your commitment to
live in Wisdom.

Meditations

The high,
the low
all of creation,
God gives to humankind to use. If this privilege is misused,
God's Justice permits creation to punish humanity.

Hildegard of Bingen in Elizabeth Roberts and Elias Amidon (eds.). *Earth Prayers from Around the World*. HarperSanFrancisco. 1991. p. 69.

We are,
live within,
and are parts of
complex
self-regulating systems --
Creation's Wisdom.
She keeps dynamic
balance
with negative and positive feedbacks.
She does not consciously
punish,
but gives us warnings
that we fail to heed
at our peril.
If we misuse our privilege
she will transform into something
we will not like --
and may not survive.
So yes,
Hildegard,
creation may punish humanity.
But we have the choice
to live in Wisdom.

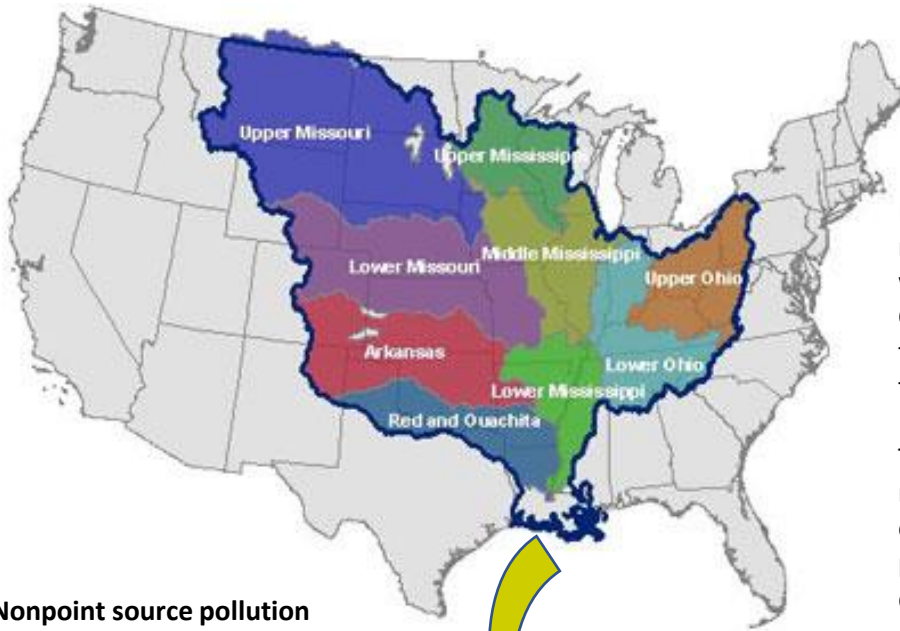
Jim Kimmel



Massive erosion by a flood on
the Guadalupe River, Texas



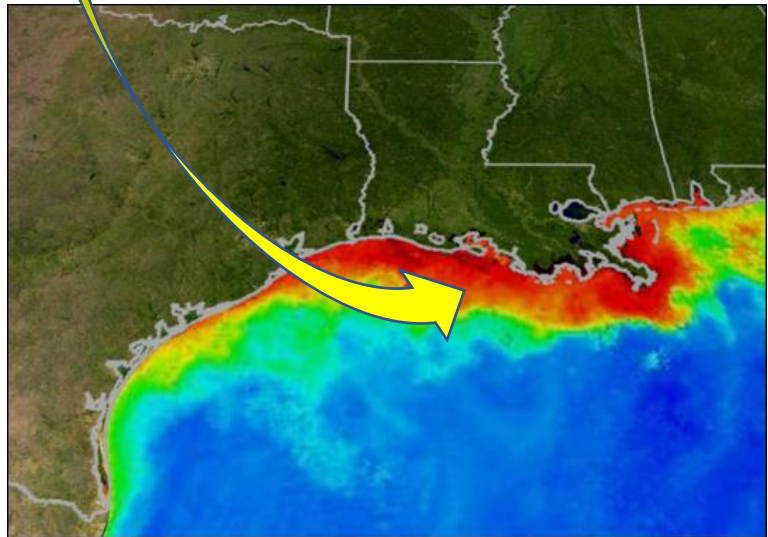
River Pollution Has Far-reaching Effects



Much of the 1,245,000 square miles of the Mississippi River watershed is farmland. Chemicals and animal waste from the land are carried into the river and its tributaries.

These pollutants contain nutrients that stimulate growth of marine algae and other plants. When the plants die, decomposition consumes and depletes oxygen from the water, creating a “dead zone” where marine animals cannot survive.

Nonpoint source pollution occurs when runoff water picks up pollutants from the land surface and carries them to a river. It is the largest source of pollution in the U.S.



Love is Hopeful

How can we be hopeful that humans will become wise in things we do not understand and have faith that love for Creation will restore balance?



Meditation

Early in the morning I seek your presence, O God,
not because you are ever absent from me
but because often I am absent from you
at the heart of each moment
where you forever dwell.
In the rising of the sun,
in the unfolding colour and shape of the morning
open my eyes to the mystery of this moment
that in every moment of the day
I may know your life-giving presence.
Open my eyes to this moment
that in every moment
I may know you as the One who is always now.

J. Philip Newell. *Sounds of the Eternal: A Celtic Psalter*. William B. Eerdmans Publishing Company. 2002. p. 74.

We Can Restore Rivers

But It's Infinitely Better Not to Pollute Them!

The Choice Is Ours.

Punch Magazine, 10 July, 1858



The silent highwayman : Death rows on the Thames, claiming the lives of victims who have not paid to have the river cleaned up, during the Great Stink.

By 1858 the River Thames in London was so polluted by human waste that parliament hung blankets saturated with disinfectant over the windows to mask the stench.

https://commons.wikimedia.org/wiki/File:The_silent_highwayman.jpg

EveningStandard
14 July, 2009

More than 125 species, including wild salmon, trout, Dover sole, plaice, haddock and bass, now live in the 215-mile waterway which was declared biologically dead in 1957.

News

Teeming with fish, Thames is cleanest for two centuries

Tuesday 14 July 2009 07:21 | 0 comments



Like Click to follow The Evening Standard



Pic: Glenn Copus

Love is Positive

Rejoice and celebrate the Earth in its fullness through our faith, hope, and work.

Meditation

If we were logical, the future would be bleak, indeed. But we are more than logical. We are human beings, and we have faith, and we have hope, and we can work.

Jacques-Yves Cousteau



Activities

The activities below can help us establish a heart connection to Creation, to find wholeness and joy. A heart connection with Earth will inspire us to practice good stewardship with our island home, just as we do with our homes and families.

Participate: Do things in and with Creation. Hike, fish, swim, camp, ski, get on the water in a boat, watch birds. These things are usually called recreation and sometimes are not considered to be serious activities. But think about that word “recreation.” It really is “re-creation” and is essential to our transformation.

Create: Take photos, write, sketch and paint, write a song, build a boat. Do something that commands your attention and helps you focus on some part of Creation.



Learn and teach: Find something that interests you and learn all you want to about it -- maybe dragonflies, alligators, or the history of water power. It doesn't matter. Then tell people about what you have learned. Write an article for a newsletter, speak to a civic group, lead a walk beside the river.

Work: We work to maintain and improve our homes and we should do the same with Creation. Work on a river cleanup. Help build a trail. Help restore wetlands or remove exotic invasive vegetation.

Celebrate: Rejoice in Creation. Sing, dance, start a festival.

Just be there: You don't have to do anything except spend time in Creation. Sit by the river, walk your dog, have picnics. Norway and most other Scandinavian countries share a philosophy that began in the 1860s, called *friluftsliv* which broadly means “free air life,” but the meaning is much deeper. The Norwegian philosopher Aarne Naess said that the purpose of *friluftsliv* is for “wholeness and joy.”

Go to [Learning from Water](#) for more information about activities.



*May all Creation dance
with joy within me.*

Chinook Psalter

Authors

Reverend Dr. Ben Nelson has served as Rector at St. Mark's Episcopal Church in San Marcos, Texas, since 2012. Prior to that he was rector at All Saints' Episcopal Church in Kapaa, Hawaii; Associate Rector at St. Paul's Episcopal Church in Chattanooga, Tennessee; and Associate Rector at Church of the Good Shepherd in Corpus Christi, Texas. He was educated at the University of the South, Millsaps College, College of Preachers at the Washington National Cathedral, and the Mexican American Cultural Center.

Rev. Nelson frequently leads programs at the Episcopal Diocese of West Texas Camp Capers and the Mustang Island Conference Center. He serves on the San Marcos River Watershed Restoration Committee. He also teaches adult Sunday classes and in the School of Wisdom and Practical Spirituality at St. Mark's.

Dr. Jim Kimmel is Professor Emeritus of Environmental Geography at Texas State University. He is author of *The San Marcos: A River's Story* and *Exploring the Brazos River*, both published by the Texas A&M University Press. The Association of American Geographers gave its Globe Book Award for Public Understanding of Geography to the Brazos River book. He was the interpretive leader on the first Smithsonian Institution ecotourism trip through the Lower Canyons of the Rio Grande.

Kimmel is a cultural ecologist, with degrees from Baylor University, Yale University, and the University of Texas-Austin. He also studied at the Yale School of Divinity, the Seminary of the Southwest, and the Oblate School of Theology. He frequently teaches in the School of Wisdom and Practical Spirituality at St. Mark's Episcopal Church and is on the School's Steering Committee.

Jerry Touchstone Kimmel is an artist, photographer, poet, and meditative yoga teacher. Her photographs are featured in *The San Marcos: A River's Story* and *Exploring the Brazos River*. Most of the photos in *Celebrate Earth!* are hers. She was educated at Baylor University and Texas State University.

She teaches in the School of Wisdom and Practical Spirituality at St. Mark's, where she is also Chair of the Adult Spiritual Formation Committee and the Labyrinth Committee. She was the owner and co-director of the Community Yoga Center in San Marcos, Texas, and currently teaches yoga and meditation classes weekly. She has taught meditation and creativity courses at Ghost Ranch Education and Retreat Center, Abiquiu, New Mexico. She has taught outdoor painting courses throughout the Texas Hill Country, Big Bend National Park, and New Mexico through Laguna Gloria Art Museum School in Austin, Texas.