

1. WELCOME, INTRODUCTIONS and GUIDE TO SESSION.

2. LITURGY (from this year's Harvest Supper liturgy)

Canticle of St Francis of Assisi: A song of Brother Sun, followed by verses from the psalms. To be said in rotation:

1. Most High, all-powerful, good Lord, to you be praise, glory, honour and all blessing
2. Only to you, Most High, do they belong, and no one is worthy to call upon Your Name.
3. May you be praised my Lord, with all your creatures, especially Brother Sun, through whom you lighten the day for us. He is beautiful and radiant with great splendour, he signifies you, O Most High
4. Be praised my Lord, for Sister Moon and the stars, Clear and precious and lovely, they are formed in heaven.
5. Be praised my Lord, for Brother Wind, and by air and clouds, clear skies and all weathers, by which you give sustenance to all your creatures.
6. Be praised my Lord, for Sister Water, So useful, humble, precious and pure.
7. Be praised my Lord for Brother Fire, by whom the night is illumined for us, he is beautiful and cheerful, full of power and strength.
8. Be praised my Lord for Sister, our Mother Earth, who sustains and governs us, and produces diverse fruits and coloured flowers and grass.
9. Give thanks to the Lord, for he is good, for his mercy endures for ever. *Psalm 136 v2*
10. Let everything that has breath praise the Lord. Alleluia! *Psalm 150 v.6*

From Celebrating Common Prayer, Canticle 63, p232 and Psalms

Prayer. Said slowly together

Loving God, give me ears to hear your word in the prophets of today; the wisdom to understand your message; and the courage to respond. We pray in the name of our Lord Jesus Christ. Amen.

From: Barbara Wood (1986) Our world, God's world. Bible Reading Fellowship

3. WHAT IS CLIMATE JUSTICE?

Climate **justice** is about how climate change is having a particularly adverse effect on the more disadvantaged peoples of our world:

“At its heart, climate change is a justice issue. Climate change disproportionately affects the most vulnerable and the least culpable. Essentially, those that are most responsible for creating the problem tend not to be the ones that experience the most severe consequences.” (*United Society Partners in the Gospel (2016?) Faith in a changing climate.*)

‘As leaders and representatives of faith communities and faith-based organisations in the UK, we wish to highlight the very real threat to the world’s poor and to our fragile creation, from the threat of catastrophic climate change. The developed world is primarily responsible for the already visible effects of global heating. **Justice** requires that we take responsibility for slowing the rise in global temperature.’ (*Faith and Climate Change Seminar hosted by the Archbishop of Canterbury at Lambeth Palace 29th October 2009*)

3b. What are the known links between climate change and refugees? The factors that cause people to leave their country and seek to live elsewhere in the world are complex. War and conflict are overwhelmingly the main reasons. However, repeated crop failures, or loss of livestock, through drought, conflict over food scarcity and rising sea levels may result in people moving. Lord Stern, in his review of the Economics of Climate Change (2009), says that if global temperatures rise, there will be inevitable migration of millions of people because parts of the world will become inhabitable.

4. STUDYING CLIMATE CHANGE

Source: <http://www.metoffice.gov.uk/climate-guide/climate-change> (30.7.17)

1. What is Climate change? Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures.

2. What is the difference between weather and climate? Climate is how the weather changes over a long period of time – typically over 30 years. It can be thought of as the average weather over a long period.

3. What are the main features of climate change?

i. Higher temperatures. Scientific research shows that the climate - that is, the average temperature of the planet's surface - has risen by 0.89 °C from 1901 to 2012. Compared

with climate change patterns throughout Earth's history, the rate of temperature rise since the Industrial Revolution is extremely high.

ii. Changing rainfall. There have been observed changes in precipitation, but not all areas have data over long periods. Rainfall has increased in the mid-latitudes of the northern hemisphere since the beginning of the 20th century. There are also changes between seasons in different regions. For example, the UK's summer rainfall is decreasing on average, while winter rainfall is increasing. There is also evidence that heavy rainfall events have become more intensive, especially over North America.

iii. Changes in nature. Changes in the seasons (such as the UK spring starting earlier, autumn starting later) are bringing changes in the behaviour of species, for example, butterflies appearing earlier in the year and birds shifting their migration patterns.

iv. Sea level rises. Since 1900, sea levels have risen by about 10 cm around the UK and about 19 cm globally, on average. The rate of sea-level rise has increased in recent decades.

v. Retreating glaciers. Glaciers all over the world - in the Alps, Rockies, Andes, Himalayas, Africa and Alaska - are melting and the rate of shrinkage has increased in recent decades.

vi. Sea ice. Arctic sea-ice has been declining since the late 1970s, reducing by about 4%, or 0.6 million square kilometres (an area about the size of France) per decade. At the same time Antarctic sea-ice has **increased**, but at a slower rate of about 1.5% per decade.

vii. Ice sheets. The Greenland and Antarctic ice sheets, which between them store the majority of the world's fresh water, are both shrinking at an accelerating rate.

Time-line of developing science of climate change

Date	Developments and responses
1820s	French mathematician, Joseph Fourier (1768-1830), posited the idea that different gases in the atmosphere absorb different amounts of radiation (now called 'the greenhouse' effect)
1859	Irish physicist, John Tyndall (1820-1893), established that molecules of water vapour, carbon dioxide, methane, nitrous oxide and ozone (now called 'greenhouse gases') absorbed heat radiation and hence maintained the earth's surface warmer than would otherwise be the case.

1895	Swedish scientist and Nobel Prize winner Svante Arrhenius (1859-1927) argued that halving or doubling the concentration of CO ₂ in the atmosphere could lead to changes in the average surface air temperature of the Earth of between 4 and 5 degrees Celsius.
1938	English steam engineer Guy Callender (1897-1964) was the first person to posit an empirical link between the rising concentration of CO ₂ in the atmosphere and increase in world temperatures
1957	Mauna Loa Observatory in Hawaii began monitoring CO ₂ in the atmosphere. It shows a steady overall increase in atmospheric concentration of CO ₂ from then until today.
1972	First United Nations conference, held in Stockholm, focusing on human interactions with the environment. One of the seminal issues that emerged from the conference was the recognition for poverty alleviation for protecting the environment. Twenty six principles, all still relevant, were agreed.
1973	European Economic Community set up the Environmental and Consumer Protection Directorate, and composed the first Environmental Action Program. Publication of <i>Small is Beautiful: a study of economics as if people mattered</i> by E F Schumacher. Schumacher was an economist at the National Coal Board and part of his book is a powerful attack on treating the planet as though it is infinitely expendable.
1988	Intergovernmental Panel on Climate Change (IPCC) was set up by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) to prepare, based on available scientific information, assessments on all aspects of climate change and its impacts, with a view of formulating realistic response strategies.
1990	First Assessment Report of the IPCC. This broadly confirmed Callender's view (see below). It underlined the importance of climate change as a challenge requiring international cooperation to tackle its consequences..
1992	United Nations Framework Convention on Climate Change is the key international treaty to reduce global warming and cope with the consequences of climate change. It came into force in 1994 and has been ratified by 197 countries.
1996	Second Assessment Report of the IPCC said that there is 'a discernible human influence on global climate'.
2001	Third Assessment Report of the IPCC concluded that 'most of the observed warming over the last fifty years is likely to

	have been due to the increase in greenhouse gas emissions’.
2005	Kyoto Protocol. This international agreement linked to the United Nations Framework Convention on Climate Change commits its Parties by setting internationally binding emission reduction targets. Recognizing that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."
2007	Fourth Assessment Report of the IPCC reported that ‘most of the observed increase in global average temperatures since the mid-twentieth century is very likely (greater than 90% confidence) due to the observed increase in green house gas concentrations caused by human activity.’ It paid greater attention to the integration of climate change with sustainable development policies and relationships between mitigation and adaptation.
2007	Nobel Peace Prize awarded to IPCC and to Al Gore (USA) "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change".
2008	Stern Review to the UK government on the economics of climate change: “The scientific evidence is now overwhelming: climate change is a serious global threat, and it demands an urgent global response. This Review has assessed a wide range of evidence on the impacts of climate change and on the economic costs, and has used a number of different techniques to assess costs and risks. From all of these perspectives, the evidence gathered by the Review leads to a simple conclusion: the benefits of strong and early action far outweigh the economic costs of not acting. Climate change will affect the basic elements of life for people around the world –access to water, food production, health, and the environment. Hundreds of millions of people could suffer hunger, water shortages and coastal flooding as the world warms”.
2008	UK Climate Change Act. “ It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 80% lower than the 1990 baseline”.
2013 and 2014.	Fifth Assessment Report of the IPCC. Warming of the climate system is unequivocal... human influence on the climate system is clear. The risk and impact will vary substantially around the world.

2013	UK Committee on Climate Change Review, fourth carbon budget review. This largely endorses the Fifth Assessment Report (see above) 'current evidence continues to point towards major risks to human welfare and ecological systems over the 21 st century as a result of human-induced climate change'.
2016	The Paris Agreement builds upon the UN Convention and – for the first time – brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort. The central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change...(particularly) supporting action by developing countries and the most vulnerable countries, in line with their own national objectives.
2017	The United States of America pulls out of Paris agreement.

Source: Mostly Atkinson D (2016) Climate science: an outline of the basic science of human –induced climate change. Appendix 1 of Sustainable faith: a green gospel for the age of climate change, by N L Bull and M McAllister + information from web sites of organisations mentioned above.

Timeline of Church of England and Southwark diocesan involvement in climate change

Date	Developments and responses
2001	Bishops of Church of England studied in detail the scientific, theological and practical implications of environmental issues.
2002	Each Bishop asked to appoint a Diocesan Environment Officer
2005	General Synod debated Sharing God's Planet (a report from the Church's Mission and Public Affairs Council) and called upon the whole Church to engage with the issues of climate change and energy use at every level in the Church.
2006	Church of England launched Shrinking the Footprint, the Church of England's environmental campaign.
2007	Southwark Diocese environmental policy: "Taking care of

	God's creation".
2008	General Synod debated and voted to endorse the recommendations as set out in Climate Change and Human Security: Challenging an Environment of Injustice (a document drawn up the Mission and Public Affairs Division).
2009	The Church of England's Seven Year Plan on climate change and the environment.
2012	Hope for the Future: Christian discipleship in the context of climate change. A report and study guide by the Methodist Church, the United Reformed Church and the Baptist Union of GB
2012	Ash Wednesday Declaration by Operation Noah
2014	Climate coalition
2015	Pope Francis encyclical: Laudato si – on care for our common home.
2015	Focus on the Paris climate summit with an updated Lambeth declaration signed by leaders of all the main religious groups in the UK.
2016	Eco Church Award scheme launched
2017	Church of England Environmental Working Group's first three year plan: report on the work so far. New Creationtide resources produced.

Source: <http://www.churchcare.co.uk/about-us> and other sources

5. BIBLE STUDY: our relationship with creation. Extracts from Genesis, *New Jerusalem Bible*)

In the beginning **God** created heaven and earth. (1.1)

God said, "Let us make man in our own image, in the likeness of ourselves, and let them be masters of the fish of the sea, the birds of heaven, the cattle, all the wild animals and all the creatures that creep along the ground." God created man in the image of himself, in the image of God he created him, male and female he created them. God blessed them, saying to them, "Be fruitful, multiply, fill the earth and subdue it. Be masters of the fish of the sea, the birds of heaven and all the living creatures that move on earth". (1. 26-28)

God saw all he had made, and indeed it was very good. (1.31)

God shaped man from the soil of the ground and blew the breath of life into his nostrils, and man became a living being. God planted a garden in Eden, which is in the east, and there he put the man he had fashioned (2. 7-8)

6. SILENT PRAYER AND REFLECTION

Prayers

We give you thanks, most gracious God, for the beauty of the 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 our posterity. Grant that we may continue to grow in our grateful enjoyment of your abundant creation, to the honour and glory of your Name, now and forever. (*Book of Common Prayer 1549*)

Creator God, fill us with your love for the creation, for the natural world around us, for the earth from which we come and to which we will return. Awake in us energy to work for your world; let us never fall into complacency, ignorance, or being overwhelmed by the task before us. Help us to restore, remake, renew in Jesus' name. Amen

There is no plant in the ground but tells of your beauty O Christ. There is no creature on the earth, there is no life in the sea, but proclaims your goodness. There is no bird on the wing, there is no star in the sky, there is nothing beneath the sun, but is full of your blessing. Lighten my understanding of your presence all around O Christ. Kindle my will to be caring for Creation. We pray in your name, Amen. *From J Philip Newell (1994), Each Day and Each Night. Iona Community*

Reflections

Walk with love and care on God's earth; walk with vital awareness of God's comprehensive vision and purpose for creation; walk with awe and gratitude to ensure justice to the trees and rivers as well as the person next to you – they are not without purpose in God's vision. (*Archdeacon Taimalelagi Fagamalama Tuatagaloa, Samoa, in USPG, Faith in a changing climate*).

Earth is the theatre of God's glory, the playground of God's delight, the garden of God's encounter with us ... Cherishing creation is the way we show God our gratitude, the way we

humbly acknowledge our creatureliness, and an important way in which we worship. (*Sam Wells (2016) How then shall we live? P.35*)

Even if I knew that tomorrow the world would go to pieces, I would still plant my apple tree. (*Martin Luther, 1483-1546*)

If ever there were an urgent moral and spiritual issue, this is it. We risk a twofold betrayal – of our responsibility to the Creator for the good stewardship of His creation, and of our responsibility to our vulnerable neighbours, here and worldwide, who bear the brunt of environmental degradation and looming crisis – not to mention our responsibility to generations to come, our own children and grandchildren. We need to show a deeper faithfulness to God and our neighbour’ (*Dr Rowan Williams, in the Church of England Environment Officers’ campaign leaflet, Hope for the future*).

7. SHARING IDEAS ON ACTION and CONGREGATIONAL INVOLVEMENT, 2017/18

SUGGESTIONS for Action between now and end of 2018:

1. Awareness raising, see also Connections below.

1. Discuss ‘Faith in a Changing Climate’ (USPG booklet)

2. Exhibition at back of Church or in Hall

3. Show an Operation Noah video. <http://operationnoah.org/> Operation Noah is an ecumenical Christian charity helping our response to the growing threat of catastrophic climate change. There are three videos to choose from.

4. Celebrate Earth Day 2018. Earth Day is a US based environmental movement. Earth Day Network is the world’s largest recruiter to the environmental movement. More than 1 billion people now participate in Earth Day activities each year, making it the largest civic observance in the world. We work through a combination of education, public policy, and consumer campaigns. <https://www.earthday.org/about/>

2. Commitments

1. Assess our own individual contributions to climate change. One online survey is: <http://climatesurvey.geodata.soton.ac.uk/>

2. Participate in EcoChurch. <https://ecochurch.arocha.org.uk/> This is an award scheme, based on an audit tool that has been developed by the charity A Rocha (Portugese for The Rock), a Christian charity working world wide for the protection and restoration of the natural world. There is a free online survey and supporting resources designed to equip our church to express our care for God's world in our worship and teaching; in how we look after our buildings and land; in how we engage with our local community and in global campaigns, and in our personal lifestyles. This would preferably be done through the PCC/Ministry and Mission committee.

3. Offset unavoidable carbon emissions through Climate Stewards. This is also initiated by A Rocha, and enables you to support carbon mitigation projects in Ghana, Mexico and Kenya. <https://www.climatestewards.org>

4. Carbon Fast in Lent 2018 (have leaflet) as churches in south west England did. <https://ecochurchsouthwest.org.uk/carbon-fast>

5. Meeting with Zac Goldsmith as per suggestions in USPG leaflet p26

3. Connections

1. Churches Together in Kew (our reps, Annabel and Gabrielle)

i. Organise series of talks. Suggested speakers: Ian Christie, local Diocesan rep who works at Kingston University; David Atkinson (retired Bishop, see his appendix in Sustainable Faith booklet); Bishop Richard (chairs Diocesan Environmental group); someone from Kew Gardens.

ii. Develop Life Style leaflet together (Wiltshire Churches as example)

iii. A day or half day of reflection on *Laudato Si (Praised be!)*, Pope Francis' *encyclical (2015)* on care for our common home.

3. Christian Aid Week 2018; Christian Aid Walk 2018

4. Deanery Synod?

4. Links to Junior Church (Helen and Lauren)

5. Kew Gardens. Find ways of developing our relationship with the Royal Botanic Gardens so that we understand better through them the effects of climate change and their implications for people in different parts of the world.

4. Prayer and worship:

1. Invite Bishop Richard (chairs the Diocesan Environmental Group) to preach

2. Prayer card like the one we did for refugees.
3. Focus a regular Sunday evensong on climate justice.
4. Move from Harvest to Creation in 2018 in line with recent C of E suggestions
<https://www.churchofengland.org/media-centre/news/2016/08/church-of-england-commends-creationtide-resources.aspx>

8. DIARY DATES Next meeting: Saturday 2 December, 10-12.

December 3rd (Advent Sunday). Brother Sam of the Anglican Franciscans will preach on the Christian perspective on the environment. Until very recently Brother Sam has been the Guardian of Hilfield Friary in Dorset where the Community have been developing a wide ranging approach to environmentally sustainable living. <http://hilfieldfriary.org.uk/all-about-hilfield/>

December 9th, Friends of St Anne's, talk by Professor Monique Simmons, Deputy Director of Science at Kew Gardens with light lunch. 10.30 – 1.

CLOSING PRAYER: the Lord's Prayer together (slowly!).

