



# JOHN·RAY·INITIATIVE

Connecting Environment, Science and Christianity

## News and Ideas

No 15, September 2007



photo: July Floods, by Tewkesbury resident John McKeown

### Floods - nothing to do with us!

Editorial - David Thistlethwaite

Climate Change is not the whole of the Christian message on the environment. It is one of the symptoms, just one of many, of a global sickness caused by abuse and misuse of nature. Storms like July's deluge are nonetheless one of the most frightening warnings for us in Britain who have taken our seasons and our weather stability for granted. The prospect of abandonment by insurance companies for many who live on flood plains is not to be taken lightly when so much personal security is invested in where we live.

And yet the warning, the disease, is not the gospel. Jesus brought good news, and we misrepresent him if we have no good news to share. We need to offer people a lead, but not into a meaner, more restricted life, with a Big Brother 'God' watching every energy output, creating new rules at every turn, and scaring us into virtuously doing nothing with our lives. There is more to 'abundant life' than 'switching off'.

There are people who are discovering in the environmental crisis signs of a different way to live. Technology is not their idol, but they love it for the prospects it gives of problem solving, under the hand of God. They love nature as a gift, not a 'resource', and they take time to enjoy it. When they travel, they are not trying to destroy time, but to enjoy God's time, perhaps having social interaction on the way. They are grateful, sacramentally grateful, for every drop of liquid carbon that enables them to do these things, but they take nothing for granted, least of all the effects of that carbon on others. They enjoy a sense of global community, and are no longer so satisfied with a 'winner takes all' approach, as they want to be able to look their Southern neighbours in the face (see Sir John Houghton's strategy for 'sharing' opposite).

One understands the mentality of people (2 million!) who fled the British floods by taking the next plane out, though it hardly helps the problem. But for those who saw it through and enjoyed seeing neighbours meeting, people shopping on bicycle and foot, and communities working together, there must have been a foretaste (amid the 'nightmare' of destruction) of how things could be in an environmentally healed future.

### The environmental crisis and Christian witness

IFES World Assembly

Report by John Houghton

The International Fellowship of Evangelical Students (IFES) is a global fellowship of indigenous national student movements. It holds a world assembly every four years. This year's was in Hamilton, Canada, celebrating 60 years (I have never seen a larger birthday cake!). Having grown enormously since 1947, its ministry now involves about 250,000 university students and about 150,000 high school students in 152 countries, with 600 at the assembly.

Evangelism is a main focus of the IFES and in many countries Christian witness is tough either because of apathy in the rich north, strong opposition in many countries with Islamic or totalitarian regimes or because of extreme poverty throughout much of the south. I was privileged to be a part of the Assembly over two or three days and heard first hand of the problems and difficulties. Yet the overwhelming message was one of great encouragement in the transforming power of the Christian gospel and the steady growth that is taking place throughout the world.

The development of the Christian mind and encouragement to apply biblical truth and the Lordship of Christ to every area of society has been one of the hallmarks of IFES since its inception. The world's poorer countries provide tremendously challenging examples of opportunities for this 'integral ministry'. One of the evenings at the Assembly was devoted to the HIV/AIDS pandemic in Africa. On another evening they invited me to speak on *The environmental Crisis and Christian Witness*. I spoke about the devastation that is likely to be suffered in many poor countries as a result of climate change. I also explained the responsibility of those of us in the rich world to share our wealth and skills to assist our neighbours in developing countries to cope with the ravages of climate change and also to develop sustainable energy especially for those many millions who have no access to any form of commercial energy.

Many of those present enthusiastically picked up this concept of *sharing*. One means of realizing this sharing would be to develop partnerships amongst Christians across the rich/poor divide bringing together experts in scientific, technical and other disciplines. Discussions over the next year will consider how such partnerships might begin to be established.

JRI Events

October 13th 2007

St Matthew's Church, Cheltenham

**Coffee House Day**

01242 714821(JRI)

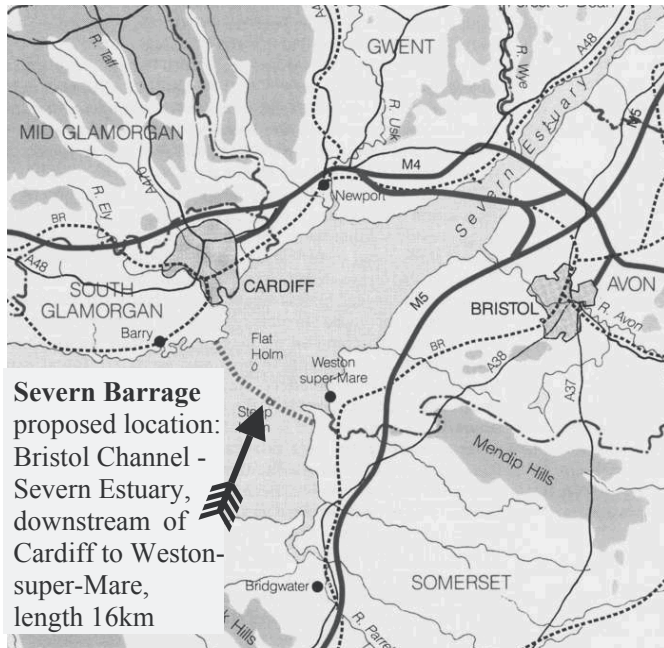
January 19th 2008

Redcliffe College, Gloucester

**Ecology and the Return of Christ**

01452 308097 (Redcliffe)

## Environmental Decision-Making: Did Theology Help?



Whether we like it or not, human beings have charge of the earth, and the environmental decisions we make, or fail to make, have huge consequences. Is there a biblical wisdom that can help with the genuine dilemmas of technology and conservation?

At Bristol's Trinity College, we spent a day in March examining the Severn Barrage proposal. **'Environmental Decision-Making: Does Theology Help?'** was the conference title. The conclusion was that theology *does* help. It sets the framework of human and creation care in which we must operate; but there is still a need for precise technical study, to see how best to fulfil those objectives.

**Ian Arbon** began the day by setting out the energy context in which decisions have to be made. In the last ten years, the UK's electricity demand, far from reducing, has risen by 1.5% a year. This demand has been met by using more gas and coal. The use of nuclear power has been declining, as has oil; but we do not as yet have enough renewable energy to fill the gap.

Typically, we like to talk about 'either/or' solutions: either renewables or nuclear, either one thing or another. But, Ian said, if we are honest about our situation, this is false, because we will have to do 'everything' if we are to avert serious climate change and supply people's needs. Of all the options, the cheapest and most effective by far is energy conservation; that is, using energy least wastefully. There is much too to be done in energy efficiency: for example, our power stations operate at 35% efficiency, whereas in Denmark 80% is being reached. If we are not doing those things, then to make electricity in renewable ways is almost pointless, if we are throwing away power elsewhere in the system.

The proposal for a Severn Barrage uses a technology that has been successfully used in France for 35 years. The Severn, with its tidal rise the second highest in the world (14 metres at spring tide), is highly suitable. The plan is to 'impound' the tide and then release it slowly through turbines. Its annual output could be 17 terawatt hours, or roughly 5% of the UK's power consumption. If we save on our total electricity use, then that becomes a higher percentage.

The cost of the barrage was estimated in 2005 at £14bn. As a nation, Ian reminded us, we spent £2.4bn on Valentine's Day alone. The Olympics are expected to cost £8-12bn.

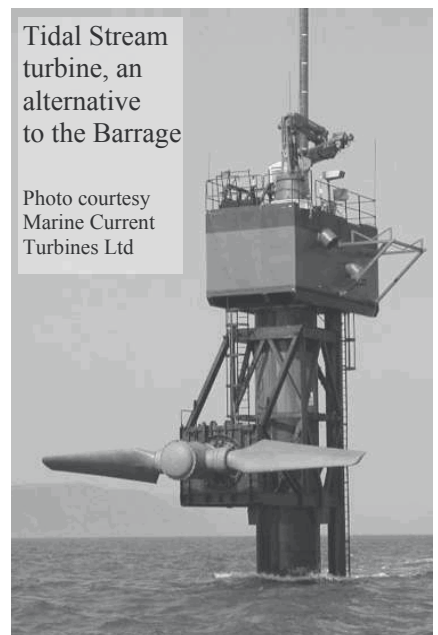
There are other benefits; a new rail link with Wales, ships able to dock for longer as the high water will last longer; and a new 'lake' will be made for sailing. But most of all there will be a security of supply, at least for the six hours after high tide. The peaks of electricity will still have to be found by other means, but a significant proportion of supply can be met through this means.

Next, we considered whether there were alternative *engineering* solutions to building a full-length barrage. **George Gibberd**, an engineer specialising in tidal stream devices, outlined the possibilities. A barrage forces nearly all the outflowing tide through narrow gates with turbines. It is possible to make several smaller lagoons, 'mini barrages', but this does involve huge amounts of sand and gravel with potential instability. Then there are 'open flow' devices, either arranged along a 'tidal fence', or freestanding at various points in the river. Like wind-turbines, but underwater, these simply capture energy from the flow around them, but can be much more tightly packed than wind turbines. Not surprisingly, the amount of power produced is only 10-15% of what can come from a Barrage, but there are also significant advantages. Tidal stream devices can be installed much more quickly and are relatively easy to maintain. They have little effect on fish, as they turn relatively slowly (10-15 revolutions per minute) but there may be noise issues for mammals, especially in construction. It would be possible to install some of these devices in addition to a Barrage, to generate further power. The conclusion is that tidal stream devices do have less impact than a whole barrage, but also produce a lot less energy.

How important is the Severn?

**Les Batty** next discussed the probable environmental impacts of a barrage. The Severn Estuary is a wetland of international importance, home and staging post to numerous migrating birds, and also has one of the most diverse fish communities in the UK (with an important run of migrating fish, salmon, sea trout, lampreys). It is protected by a whole suite of British conservation designations, and is proposed as a Special area of conservation under the European Habitats directive. Seventy thousand birds winter on the Severn; this is down from eighty-four thousand, since because of recent mild winters, birds do not need to travel as far.

What makes this such a special habitat? A tidal estuary such as the Severn has two bodies of water meeting, salt and fresh, and that meeting produces a lot of sediment. That is deposited in the middle area as mudflats and salt marshes. The mudflats are very productive for food, with worms, crabs, snails and



shrimp. It is a harsh environment, and those creatures that survive can reach high numbers. The lower salt marshes are also an important nursery for young fish, when the tide covers them.

### What would change with a Barrage?

The tidal range would be reduced by about half; low water would be around the present mid tide mark and high water would be reduced by about a metre. High water would last longer, so there would be more wave impact at high water. But slower currents and less turbidity would mean the water would be clearer. Sediments would be repositioned, and salt marshes would be eroded in some places and increase in others. Essentially the system would still be estuarine.

The predictable effects on wildlife relate particularly to the clearer water. There would be more phytoplankton with more light, thus a potential increase in mussels, oysters and crabs that feed on them. There should be more eel grass, *Zostera*, which is a good habitat for fish. Birds are more likely to catch fish because they can see them better, but there would be fewer birds due to a smaller area for feeding. The greatest problem for fish would be in finding and moving through the sluices, and navigating through fast moving turbines.



### Does this change matter?

‘Conservation’ can imply that change is bad, and one might wonder how far the estuary is legally protected. If there is ‘overriding public interest’, Les explained, then protection can be set aside; however a ‘compensatory habitat must be provided’. This presumably stops short of excavating a replica estuary somewhere else. But we also need to consider that change is part of the way nature works, and we cannot in any case ‘fix’ a portion of nature in a moment in time. There may be other benefits from a barrage, such as flood protection for those living on the Severn. Climate change ensures there is nothing stable. However, Slimbridge wildlife sanctuary will retain its marshes, since impacts will be lower further up the river.

Les concluded with some reflections on the decision making process in the UK. The government is committed to the ‘market’ and so will not be drawn into giving a lead. And if the primary objective of the project is to make money, than he thinks it is unlikely to happen. He felt the national obsession with money was preventing proper decision-making for the public good, as was an obsession with power with so many statutory bodies requiring to be placated that it is impossibly time-consuming to even initiate major projects.

Next, **John Bimson** spoke on **theological aspects of the Barrage**.

Among God’s creatures, humans have a unique position, relating both vertically and horizontally. Alone we are in God’s image, and Psalm 8 tells us that all things are under our feet, while Psalm 115 says ‘the earth he has given to the

children of men’. That vertical relationship of imaging God to the creation has also to be placed alongside a ‘horizontal’ position among the creatures, made, like them, from the earth. Adam means ‘earthling’, and the phrase ‘living being’, used of him, is also used of animals (see Genesis 1:24 and 2:7). When God saw the whole creation that it was ‘very good’, this was not because humans had arrived in their superiority, but because the creation as an interdependent whole was now complete.

The dominion of humans is meant to reflect the rule of the ideal king (Ps 72: 12-14). Being in God’s image is to model his care and provision for what he has made. The kingly image of Psalm 8 is that of a protector. This is seen in the Flood Covenant to all creatures, which is made through Noah acting on God’s behalf (Genesis 9: 16).

This understanding of beneficent rule is amplified when we understand that the instruction in Genesis 2:15 to ‘till and keep’ the garden equates to ‘serve and honour’. ‘Keep’ (‘dress’ in the AV) is the same word used in Numbers 3 (7-8) for ‘looking after’ the tabernacle.

The Bible’s overall view of creation, far from being anthropocentric, is God-centred. In Job 38-39, Job is shown an array of creatures that are clearly not there for human use or benefit, with an implication that there is far more to Creation than we can understand. Through this experience Job sees that his predicament is not the true centre of the story, but that God himself is.

When we read the New Testament, we need to remember that the Old Testament is presupposed. Most of the New Testament writings were written to address new issues that had come up, rather than to repeat what was already established. However there are new emphases. All of creation – not just the human parts – is shown to relate to Christ. Colossians states that *all things* were created through him and for him, and Ephesians speaks of the plan to ‘unite *all things* in him’ (1:10). Thus creation has a history, coming from Christ in its totality, and a future, being directed towards Christ for reconciliation and unity.

It is in the light of this comprehensive affirmation of all created things that we must read the passage in 2 Peter 3: 10, which appears to predict an utter destruction of the created order. ‘The elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up’ (KJV). A more recent translation reads ‘the heavenly bodies will be burned up and dissolved, and the earth and the works done in it will be exposed’ (ESV). The actual Greek word for ‘exposed’ is ‘found’ (though there are Ms which read ‘burned up’). ‘Exposure’ echoes other prophesies of judgment which emphasise the revealing of what is hidden. Furthermore, when Peter goes on to speak of a ‘new heavens and a new earth’, he uses the Greek word ‘kainos’, which is used of new converts in 2 Corinthians 5: 17 and indicates that which is new in character or renewed, rather than new (‘neos’) having never existed before. In Revelation 21: 1-3 earth is still humanity’s dwelling place, a fact that assumptions about a future existence in heaven have often overlooked.

Here what is important for our current understanding of creation is the reminder that people are not saved out of a physical into a non-physical creation (as in some Gnostic and Platonic traditions), but that God’s plan is for a recreation and renewal of this existing earth. God’s purpose from the beginning was for an earth and a physical creation, and just as

it was never the physical that failed, it is not God's purpose for physical existence to be scrapped.

The physical world, then, is not some hobby of ours, or God's, to be laid aside when finished with. We are not to think of 'being kind to animals' out of a sentimental attachment to nature, which could come and go with our feelings. We are to have far more reverence than that, because the things that are are the things that God made. We have to move even beyond aesthetic, spiritual, economic and biodiversity value. All these values are there to be appreciated. But as we have seen in Job, the Bible values creatures with no obvious use, because it is God himself who 'rejoices in his works' (Psalm 104: 31). We have to develop the capacity to find space, love and care for 'the useless'; which is equivalent to finding space for God.

So how do we apply this thinking to the proposed Barrage? There is a group of birds, waders, that come to the Severn Estuary from as far away as Canada, Greenland, Iceland and North Russia. Would we want to deprive them of their feeding ground? However, the Severn also has the lowest carrying capacity for on-shore birds of any British estuary and it is possible that a barrage could generate a more benign ecosystem, that would enable some bird populations to increase. In such thinking, we are attempting to move beyond economics, utility, and even aesthetics, to a kind of 'theological respect' - which could well help us prevent mistakes, because 'the fear of the Lord is the beginning of wisdom'.

The final presentation was **Margot Hodson's**, on **Ethics and Decision-Making**. When we make decisions, we are used to gathering relevant data, but much less good at examining the core beliefs and ethical principles which will contribute to our final answer. What we believe about ultimate value is just as important as what we know.

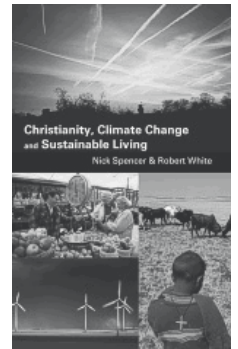
In environmental decision-making, it is useful to distinguish four approaches. In **anthropocentric** approaches we suit our own needs, desires and convenience. In **biocentric** approaches we attempt to meet the interests of every separate organism, without priority. In **eco-centric** approaches, the emphasis is more on the whole than the part; so it is acceptable to sacrifice one species' needs for the sake of others'. The Christian **stewardship** approach exercises care for the part and the whole, in a context of human need seen against the primacy of God's glory. Created things are neither neglected nor absolutised. This Christian approach is something to offer a postmodern world full of ideals but beset by practical dilemmas.

Ethicists distinguish two types of ethics: consequentialist (results based) and deontological (principle based). But there is another, 'truth-based', approach which asks what is true about the world, and then derives virtues and values from that. What is our view of the good? For some, the good life will be defined in terms of goods and possessions, peace and plenty. Christians also have a vision of other goods apart from material. We follow a Master who sacrificed his own life and who said 'if you save your life you will lose it'. So the Christian vision of the good can involve self-denial for the sake of others. But is it not anti-material or disregarding physical needs, especially those of the poor. So 'stewardship' is a word that in a Christian context embraces enjoyment and sacrifice, consumption and care, all in their place. In caring for 'the other' we at the same time care for ourselves, because we find our own destiny as image-bearers of God. Like Jesus, we are lifted up when we stoop down.

This truth-based approach was then tested in discussion groups. It helped us understand that the cost to the rest of creation of our consumption patterns is real—and that though a barrage might help some creatures (even as it displaced others), it certainly ought not to be done without an effort to reduce energy consumption as a whole. Otherwise we would be asking big sacrifices from nature, with little from ourselves.

## Of sacred cars and sacred cows

**Bob White**, JRI director and a Cambridge professor of geophysics, has just collaborated with Nick Spencer on a new book '**Christianity, Climate Change and Sustainable Living**'. We asked him how he got into writing the book and how it has changed him.



Bob has been concerned for some time that a fundamentally 'Christian' issue – the state of the planet – has been too much neglected by Christians, and by default almost barred off as 'New Age'. But climate change (the evidence for which, as an earth scientist, he could not avoid) has forced us to realise that 'environment' is an issue for everyone, which Christians should be speaking about boldly. Aside from the science, the main issue is our unsustainable lifestyle, which Nick Spencer and The Jubilee Centre have been researching especially in its relational and social consequences. Working with Nick has seemed an ideal way of putting the whole picture together.

How for Bob does theoretical become personal? One detail that has become quite pressing has been the realisation that the world's 1.7 billion cattle (nearly one cow for every three people) together contribute more to global warming by greenhouse gases than the entire world's transport system. Beef cattle consume 10 kg of protein for every 1 kg of meat they produce. So for Bob, eating a lot of meat no longer feels right. That is not the only lifestyle change (offsetting flights is another) that has arisen from writing the book. But without making rules, he is clear that change definitely has to happen, for everyone's sake, and that it is important for individuals to make educated choices about their lifestyles.

This is a book that sets out the whole story of consumption and its consequences. One of the key points is that the global problem (which seems so big) has local causes, ones within the scale of things we can personally affect. But if we change negative habits, we need a vision of what we can move to, and this is provided by a biblical perspective from Isaiah, and by detailed personal and public policy suggestions.

**Spencer, Nick & White, Robert (2007). *Christianity, Climate Change and Sustainable Living*, 245pp. (RRP £9.99) was published on 23 August by SPCK. Bob White can mail copies for £8.00 inc. p&p in the UK (15 Mingle Lane, Great Shelford, Cambridge CB22 5BG).**

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