

Landscape Heritage, Biosphere Change, Climate Change and Conservation A General Approach and an Agenda

Introduction

I began writing this discussion paper in an attempt to find a rational approach and way of structuring the complex question of how Global Climate Change might affect the landscape heritage, the cultural heritage in general, and their conservation. The purpose of this was to find an approach that will assist the processes of thinking, researching, teaching; providing guidance on the subject; and finding practical solutions to the challenges that are posed by the phenomenon of Global Climate Change. But it also has another purpose which is to help open up a discussion about how Global Climate Change, landscape heritage and conservation relate to the wider topic of Biosphere Change and what are the main current priorities for the landscape heritage sector.

Biosphere Change

At an early stage in thinking about the question of a rational approach, it became evident that the subject of Global Climate Change is in fact part of a larger phenomenon and needs to be seen in this wider context and not simply on its own. The larger phenomenon is that of Biosphere Change. The Biosphere consists of the surface layers of the Earth and its atmosphere and Biosphere Change includes such things as environmental deterioration (incorporating the effects of pollution and over-population), environmental improvement, ecology, the ecology of humans, the quality of life for both humans and non-human life, and of course, Global Climate Change.

The current changes that are taking place in the Biosphere are due to many factors, mostly it would seem connected with humans and human activity. The changes appear to be accelerating in the direction of severe environmental deterioration on a global basis.

Global Climate Change

It is a widely held opinion that Global Climate Change is now one of the most significant factors that is causing negative Biosphere Change; that Global Climate Change is being caused by Global Warming; and that humans and human activities are now a primary cause of Global Warming. The primacy of the human contribution to Global Warming is widely accepted but it is not a universally held view.

The increase in Global Warming is generally measured in terms of the increase in Global Mean Temperature and this has been adopted as a way of measuring the extent of Global Climate Change and of indicating the nature of the effects that it will have on the world. A rise of 1 degree Celsius in the Global Mean Temperature represents the range of 0.5 – 1.5 degrees C; a rise of 2 degrees represents a range of 1.5 – 2.5, and so on (Stern 2006 p. 65). The increase is that which is calculated to have taken place since the period 1750-1850. From a global perspective, this period is referred to as being 'pre-industrial'.

The Stern Review comments on the effects of rising Global Mean Temperature in the range of 1 to 6 degrees C. It is thought that above 5 degrees, 'the "socially contingent" effects could be catastrophic' (Stern 2006 p. 69).

Landscape Heritage (including gardens and parks)

A suggested primary definition of landscape is as follows: *'A landscape is a concept, a real or imaginary environment, place, image or view in which the land, and natural and semi-natural elements, are prominent, dominant or the only ones. Landscapes may, and often do, include humans and man-made components as well. They are the product of the appearance, uses and perceptions of places that are part of the outdoor environment.'* (GARLAND Guidelines: 1. Topic: Landscape. 15 May 2007).

In relation to those of a physically real kind, and at the broadest level of characterisation, the main general types of landscape can be described as being:

1. Uncultivated Landscapes (Natural and Semi-natural Landscapes);
2. Cultivated Rural Landscapes;
3. Urbanised and Industrialised Landscapes;
4. Gardens, Parks and Designed Ornamental Landscapes.

'Uncultivated Landscapes' covers the range from 'wilderness' to land that is managed by humans but not cultivated in the sense of being ploughed, or having the surface broken up or planted with non-local plants. Wilderness is a natural landscape in which the effects of human intervention are entirely absent or minimal.

'Cultivated Rural Landscapes' refers to land that has been settled by humans and where arable cultivation (i.e. ploughing, or having the surface broken up) and the growing of non-local plants are a main feature of the local economy and way of life.

'Urbanized and Industrialized Landscapes' are landscapes where urban and industrial developments are prominent or dominant. These terms appear to be inconsistent with Garland's definition, above, but are useful when the land, natural or semi-natural elements are less than prominent, but where one wishes to emphasize or call attention to their existence.

'Gardens, Parks and Designed Ornamental Landscapes' are usually found within Cultivated Rural Landscapes and Urbanised Landscapes. The characteristics that make them distinctive are the high level of ornamental work, aesthetic modification and improvement, and horticultural activity that they exhibit. (GARLAND Guidelines: 1. Topic: Landscape. 15 May 2007).

Heritage is made up of those things that are inherited or inheritable. It includes those that we inherit from other people as well as those that come from the past in general. The people from whom we inherit may be living or dead. Heritage also includes the things that we, in turn, pass on to others either in the present or the future.

The things that are inherited may belong to either the natural or the cultural dimensions of life and environments, or to both at the same time. The word 'cultural' signifies those things that are of human origin or the result of human activity. The historical dimen-

sion is one aspect of both the natural and the cultural; it places things in time and relates them to the different contexts that exist during the course of time.

Heritage includes not only tangible (physical) objects, but also intangible ideas, responses and skills. This definition accepts that we can add to heritage on a continual basis and at the same time we can conserve and care for those things that we inherit and that are of value in one way or another. These two approaches to heritage do not necessarily exclude each other, where they do come into conflict with each other, specialist knowledge and assessment will be needed to find a resolution.

Landscape heritage is a combination of natural heritage and cultural heritage. It embraces both dimensions.

Structuring our Thinking about Biosphere Change and Landscape Heritage

Global Climate Change affects every aspect of nature and life. Its effects will be all pervading on a global basis because it will bring significant and fundamental changes to the processes by which the Biosphere currently functions. It has become usual in Western civilization for people to operate on the basis that these processes are normally fairly stable, constant, orderly and predictable. However, phenomena such as significant rises in Global Mean Temperature will cause life to become increasingly more unstable, inconstant, disorderly and unpredictable; in other words more chaotic.

Another important factor is that changes may take place slowly and incrementally over a seemingly long period in relation to an average human lifetime, and this can lead to them being underestimated or even ignored by humans. An apparently long period for humans may however be a very short period in terms of the natural adaptation of species and other natural processes. The survival of species may be made more precarious by the relative rapidity of the changes.

Biosphere Change is a very large and complex subject and a basic, reliable and generally usable way of structuring it is required both by specialists and everyone else so that it can be dealt with on a rational and logical basis, a 'scientific' basis in fact.

The concept of 'Nature' is a good starting point for structuring the subject of Biosphere Change in relation to its effects on landscape heritage. Nature may be thought of as consisting of two main ingredients, i.e.:

1. Non-living Nature (Inanimate Nature).
2. Living Nature (Animate Nature).

Non-living Nature includes: energy, temperature, atmosphere, water, climate, rocks, and minerals.

Living Nature is made up of the scientifically recognized Kingdoms of living things. There are at least five of these (New Encyclopaedia Britannica 2003, vol. 14, pp 1094-1095):

1. Monera (including bacteria, archaeobacteria, blue-green algae)
2. Protista (Algae other than blue-green algae, slime molds, protozoa)
3. Fungi (Molds, mushrooms and toadstools)
4. Plantae (Typical green plants from mosses and liverworts to flowering plants of all kinds)
5. Animalia (Animals, from sponges and mezozoans to mammals)

From a human perspective, and because humans are now such a dominant and environmentally influential life-form, it is often useful to think of living nature as also having two main ingredients, those of human life and non-human life. Amongst the factors that distinguish human life from non-human life are the exceptionally

high ability of humans to:

1. Observe objects and phenomena very closely and remember them;
2. Think abstractly and imaginatively;
3. Think and act on a rational basis;
4. Reason and act on the basis of what is 'good' and 'bad' for them;
5. Engage with their environment and particular places, and modify them;
6. Make inanimate objects;
7. Communicate feelings, thoughts and ideas.

Collectively, the factors that distinguish humans from other forms of life can be referred to as the 'cultural factors'. It might be argued that, in origin, the cultural factors are natural; some would say that they are divine. Whatever their origin, at some point in human evolution, it has become a very prominent and semi-independent ingredient of humans. This semi-independence gives rise to a duality in humans which might be regarded as being a partnership between primary human nature and the cultural factors. These are the two main ingredients of Humanity, but the concept of 'Humanity' usually implies that the cultural factors are dominant.

This leads to the question of whether Humans are to be regarded part of Nature or not. It is clear that they are part of it, but at the same time there is a very important part of them that is not the same as the rest of Nature. This important difference needs to be recognized, and this is why it is a useful convention to think of humans as being a distinctive form of life. Within this context, Nature might be defined as 'that which exists or occurs without being consciously planned by humans, either as individuals or as groups.'

The subject of Biosphere Change may be considered under the sub-headings provided by the three main ingredients of Nature described above. They may be referred to as the three primary components of the Biosphere. They are:

1. Non-living Nature (Inanimate Nature);
2. Non-human Life;
3. Human Life (Humanity).

Each of these represents a main vehicle through which the dynamic forces that determine the course of events in the Biosphere operate. Of course, these three primary components interact with each other.

Opening up a Discourse on Biosphere Change

A discourse on Biosphere Change in relation to landscape heritage, and indeed in relation to other forms of heritage, can be opened up by applying four Key Questions, individually or in combination, about each of the Primary Components of the Biosphere. Three of the Key Questions are about the effects of Biosphere Changes and the fourth is about the action that might be taken. The four questions are:

Key Question 1: What effects will, or might, Biosphere Changes have on each Primary Component of the Biosphere in terms of the nature of the effects and their relative significance?

Key Question 2: What additional effects ('knock-on' effects) will, or might, changes in one Primary Component of the Biosphere have on each of the others?

Key Question 3: What additional effects ('knock-on' effects) will, or might, changes in one Primary Component of the Biosphere have on Biosphere Change in general?

Key Question 4: What action can, or should, be taken to control and manage Biosphere Change and its effects?

NB In general terms, the effects might be beneficial, neutral, or detrimental.

Each of the four Key Questions needs to be asked and answered within a stated 'context' and this might be defined in terms of a number of different Context Defining Factors which might be used on their own or in combination with others. These factors include such things as the following:

- The Primary Component of the Biosphere, or individual elements of it, to which the Key Questions are being applied. (It would be helpful to have a structured concept of the nature of each Primary Component. The structure might be a hierarchical one.)
- The aspect of Biosphere Change, or individual elements of it that are to be considered. (It would be helpful to have a structured concept of the nature of the aspects of Biosphere Change. A hierarchical structure might be appropriate.)
- The magnitude of the increase in the Global Mean Temperature on the scale of 1 - >5 degrees Celsius. In the Stern Review, a table is given that indicates the nature of the global changes that will occur with rising Global Mean Temperature at intervals of 1 degree Celsius (Stern 2006, Table 3.1, pp 66-67). It might be useful to think of each of these levels as a separate 'context'.
- The mental and intellectual context (or the point of view) from which the Key Questions are being asked. The point of view might, for example, be professional, academic or at the level of general interest. In each case it might be specified more closely by reference to particular already named subject areas or fields of interest.
- The global region in relation to which the Key Questions are being asked. There are different ways of defining global regions. Possibly a combination of factors will be needed. For example: continents, oceans and latitude zones. (Tropical: 0 - 22.5 degrees Lat.; Sub-tropical: 22.5 -45.0 degrees Lat.; Temperate: 45.0 - 67.5 degrees Lat.; Polar: 67.5 - 90.0 degrees Lat.)
- Climatic type.
- The type of place in terms of its extent (eg international region; national region; locality; and individual site).
- And in relation to Key Question 4, the type of action that is under consideration, such as: Legislative and administrative action; Education, training and awareness raising; Recording; Investigation and Research; Direct intervention; Indirect intervention.
- Others?

The Cultural Dimension and Heritage Conservation

The term 'conservation' is used here in the UK sense, meaning a rational approach to protection that is based on clear principles and but which can be flexible, as opposed to inflexible, where circumstances allow flexibility. This can lead to a range of actions such as preservation, restoration, reconstruction, adaptation and recording.

For humans, cultural factors and the Cultural Dimension of Heritage Conservation are of special significance. These factors include the mind and the soul of individuals, and they require nourishment and support, just as much as the human body. For this reason the different aspects of the Cultural Dimension must be taken fully into account in relation to Biosphere Change and environmental management.

The scope of the mental dimension stretches from basic perception and cognition to aesthetic, intellectual and spiritual interpreta-

tions. It includes such things as:

1. Human responses to life as individuals, groups and communities;
2. Human emotions and rationality;
3. Human aspirations and satisfaction with life.

The prime professional responsibility for conservators and conservationists working in the field of movable works of art (such as paintings, sculpture, furniture), or with settlements, buildings, structures and architecture, is usually the conservation of non-living objects. However, in the field of landscape heritage, their prime responsibility also includes living things (eg plants and animals) as a very important component. The landscape heritage is a combination of living and non-living phenomena. This difference provides a basis for a significant distinction between three types of conservation, which are as follows:

1. Conservation that is primarily concerned with non-living phenomena;
2. Conservation that is primarily concerned with living phenomena (both human and non-human life);
3. Conservation that is concerned with both non-living and living phenomena at the same time.

Conservation of landscape heritage belongs to the last, ie item 3. In general, conservation of landscape heritage has much in common with both the conservation of the natural heritage and the conservation of non-living artefacts, but it also deals with living artefacts.

A General Method for Opening up a Discourse on Biosphere Change in Connection with Landscape Heritage and Conservation?

The various points made above provide a basis for a general method for identifying, analyzing and assessing the effects of Biosphere Change and the action that might be taken. The method can be formulated, in brief, as follows:

1. Note the four Key Questions and select which are to be applied;
2. Define the context within which the Key Questions are to be asked. Two of the main Context Defining Factors are the component of the Biosphere and the aspect of Biosphere Change that are to be considered;
3. Apply the appropriate Key Questions to the selected context;
4. Assess the results and prepare a statement about the conclusions that can be drawn;
5. Compare and contrast the results for the selected context with those for other contexts, and prepare a statement about the conclusions that can be drawn;
6. Agree to a course of action and implement it;
7. Repeat the process for other contexts.

The number of contexts that might be addressed using this method is extremely large, and this raises the question of where to begin?

Different organizations and individuals could begin with the contexts with which they are already particularly familiar. This would make use of their existing and particular expertise. It might, however, lead to a patchy coverage of the overall range of contexts, so the results would need to be kept under review so that gaps and also the more important results that emerge can be identified, widely disseminated, and then addressed.

Another approach would be to encourage planned programs of investigation and action which would examine particular contexts or groups of them.

An important group of contexts has been identified by the Council of Europe's 'European Landscape Convention' (2000). This

convention is about landscapes in general, and not specifically about landscape heritage. Nevertheless, it is highly relevant. In Article 6, nine 'Specific Measures', are listed under five main headings. These specific measures are ones that each party to the convention is expected to implement. They are all forms of action and therefore relate to Key Question 4. They are as follows:

Awareness-raising

Each Party undertakes to increase awareness among the civil society; private organisations; and public authorities of the value of landscapes, their role and changes to them.

Training and education

Each Party undertakes to promote:

1. Training for specialists in landscape appraisal and operations;
2. Multidisciplinary training programmes in landscape policy, protection, management and planning, for professionals in the private and public sectors and for associations concerned;
3. School and university courses which, in relevant subject areas, address the values attaching to landscapes and the issues raised by their protection, management and planning.

Identification and assessment

With the active participation of the interested parties and with a view to improving knowledge of its landscapes, each party undertakes:

1. to identify its own landscapes throughout its territory;
2. to analyse their characteristics and the forces and pressures transforming them;
3. to take note of changes;
4. to assess the landscapes thus identified, taking into account the particular values assigned to them by the interested parties and population concerned.

These identification and assessment procedures shall be guided by the exchanges of experience and methodology, organised between the Parties at European level.

Landscape quality objectives

Each party undertakes to define landscape quality objectives for the landscapes identified and assessed, after public consultation.

Implementation

To put landscape policies into effect, each Party undertakes to introduce instruments aimed at protecting, managing and/or planning the landscape.

The specific measures identified by the European Landscape Convention are relevant and important in connection with the combined context of Biosphere Change, Landscape Heritage and Conservation. But:

1. What aspects and effects of Biosphere Change need to be addressed as a matter of priority by these specific measures?
2. To what extent are these specific measures already being put into practice?
3. What improvements are needed and how might they best be made?
4. Where are the resources that will be needed come from?

These questions provide an initial agenda for fuller discussion.

Summary

This paper has put forward some ideas for consideration. These include:

1. That Global Climate Change should be seen in the wider context of Biosphere Change.
2. A rational approach and way of structuring the complex question of how Biosphere Change might affect the landscape heritage and cultural heritage in general.
3. That landscape heritage is a combination of natural heritage and cultural heritage; it embraces both.
4. That the Cultural Dimension is important to humans.
5. That conservation of landscape heritage has much in common with both the conservation of the natural heritage and the conservation of non-living artefacts, but it also deals with living artefacts.
6. A method of opening up the exploration of the subject of Biosphere Change. This includes four Key Questions.
7. A method of opening up the exploration of the subject of Biosphere Change in relation to landscape heritage and conservation. This includes four useful Key Questions.
8. That developments in knowledge and understanding of the relationships between Biosphere Change, landscape heritage and conservation need to be kept under review and the outcomes of the process of review need to be widely disseminated and addressed.
9. That the Specific Measures advocated by the European Landscape Convention provide a useful starting point for a planned programme of investigation and action.
10. An initial agenda for further discussion and action in relation to Biosphere Change, landscape heritage and conservation.

A discussion of the above points and an agenda for making progress is needed.

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