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Environmental Citizenship for the Future: Roger Crofts, Scottish Natural Heritage

Introduction

For those of us who claim to be environmentally aware, it is very easy to assume that one takes on the mantle of environmental responsibility in life as a matter of course. Individuals do not become environmental citizens or become environmentally aware without some external stimulation. In this paper, I seek to identify what I mean by environmental citizenship from a range of different perspectives. I address the question of how citizens value the environment: weighing scientific approaches to those dealing with emotional or cultural approaches. I then reflect on what geography teachers can contribute as I believe that they are in a good position to influence and build environmental citizens for the future.

What do we mean by environmental citizenship?

There is no one standard definition. It is disappointing that there is minimal reference to environmental citizenship in the Scottish Executive's Consultation document on 'Education for Citizenship'. Surely political awareness has to include environmental, as well as cultural, social and economic awareness. This would accord with the approach adopted by the Scottish Executive in successive 'Partnership for Government' documents on both, 'social and environmental sustainability'.

I have taken a definition which the World Wide Fund for Nature defined in a report on "stewardship of natural resources". Focus on the term "Stewardship", is a very good label for environmental citizenship as it places responsibility on the citizen as part of the local community and wider society

on the basis that as individuals we should act for the “common good”, ie the summation of public and private benefits. In the report, stewardship is described as follows:

- Is a responsible approach to things one is entrusted to care for. It builds on sense of personal responsibility.
- Involves taking into account the interest of others such as other people, communities, future generations and other species.
- In the case of property, it involves being entrusted to care for it on behalf of others and means accepting some conditions on how property is used.
- Aims to deliver “common good” which is the balance between public and private interests.
- Suggests some level of accountability for one’s actions based on working towards agreed standards.

None of these elements of the definition of stewardship is particularly novel or revolutionary, but are, nevertheless, virtually important.

In trying to decipher what is meant by environmental citizenship, I identify five elements: lifestyle at home, lifestyle in the community, willingness to pay, understanding the environment, and campaigning for the environment. For each of these elements, I seek to identify everyday activities for most people if they were minded to take a responsible approach towards environmental resources and their role as citizens.

(1) Lifestyle at home

The domestic household is a major source of consumption of environmental assets and also a producer of a vast amount of waste. Dealing with this situation should be the essential starting point for training everyone about their role as environmental citizens. Any thought of reducing consumption is regarded by many people as an infringement on their personal liberty and likely to result in a reduction in their living standards. However, if we consider the level of use of naturally-based resources, such as electricity, gas and

water, such as the various types of fibres, then it is challengeable as to whether each individual in each domestic household could reduce their consumption. Turning off the light, using low energy light bulbs, minimising the number of electrical appliances which are kept on, having a two-level flush toilet are all well-known examples of this approach. In addition, assessments of household energy loss show that the two critical issues are the need to have an efficient heating system alongside ensuring that the building is effectively lagged, especially the roof. Clearly there are cost implications but there are government grants for some of these activities.

Waste is a major issue for the domestic household as we have become less able to consume our waste. We seem not to recycle waste materials ourselves and our track record is much worse than in other European countries. Indeed, we prefer to see waste going to recycling facilities which require natural energy resources for recycling. Civic amenity sites in many cities and larger towns and bottle banks etc at supermarkets are now well-used facilities. Often people travel long distances to dispose of their waste perhaps consuming more energy than is saved through the recycling. One novel initiative in a number of towns and cities in Scotland (eg Edinburgh, Inverness, Stirling) is the supply, at a low price or free, of compost bins for garden waste and vegetable waste. Not only does this provide good soil conditioner and therefore reduce the need for use of non-renewable material like peat, it is also a valuable way of reducing the waste which goes beyond the household itself.

(2) Lifestyle in the Community

Many people consider that being an environmentally aware citizen reduces their lifestyles and this approach is really for those who are trying to turn their back on modern society. I doubt if this is the case if one looks at two aspects which will affect most individuals and most domestic households. First, is the type of transportation we use in our business and leisure times. Attempts to reduce traffic congestion by improving public transportation are now high on the public agenda. It is relatively easy for those who live in towns and cities to avail themselves of these opportunities, but even then car pooling for example

in Edinburgh has failed. It is much more difficult in rural areas where public transport is relatively limited and the distribution of major service points, such as schools and supermarkets, necessitates the need for private transport. However, post buses, carrier services and car sharing are growing.

Furthermore, when we are looking at investing our resources, whether in the local bank or building society or on the stock market, how often do any of us think about the environmental awareness of the companies in which we are investing? Ethically sound and environmentally sensitive investments are now much more accessible than they were in response to market demand; and the returns, overall, are just as good as for non-ethical and non-environmentally sensitive investments.

(3) Willingness to pay

One of the major issues for the citizen is a preparedness to pay for protecting and improving environmental assets. Assessment of public opinion surveys suggests that most people are, for example, more likely to provide assets for the environment by being a member of a charitable organisation than they are to pay a higher price for the food that has been grown in an environmentally sensitive way. It is noticeable that the shelves in the fruit and vegetable parts of supermarkets labelled “organic” have begun to expand again but are still a very small proportion of the total shelf fruit and vegetable area. However, being prepared to vote with ones feet and buy foods which are produced in an environmentally sensitive way, either to the full code of the Soil Association or to other environmental codes, have still not really taken off despite the promotion by leading environmental farmers such as the Prince of Wales. Part of the issue is perhaps that these are seen as somewhat off-beat products. We have not yet got the message through that more environmentally sensitive food production is about treating the natural resources of the soil and the water courses in a much more sensitive way than before, so that the productivity of those resources can be sustained in the future. Perhaps the aftermath of BSE and foot and mouth disease will prompt a demand from society for a more formative role by farmers in stewardship of environmental assets.

More people are joining non-government voluntary environmental organisations each year. Although there are often dips in the membership when the economy is weaker, the overall trend is in an upwards direction. Major charities like the Royal Society for the Protection of Birds with over 1.2 million members in the UK and over 70,000 members in Scotland and the National Trust for Scotland with over 240,000 members in Scotland are seen by many as a way of supporting environmental conservation in its many and varied guises. The ability of these organisations to purchase property of environmental significance and to ensure its perpetual protection cannot be understated. It is notable, for example, that when organisations like RSPB and NTS put out appeals to buy a particular property fundraising is relatively easy. It is equally notable that it is more difficult for funds to be gained for the long-term maintenance, and where appropriate improvement, of these properties. Public perception of environmental needs is unfortunately focussed on ownership, rather than long-term care.

So willingness to pay is moving forward with people voting with their cheque books in many ways but it has still a long way to go.

(4) Understanding

Underlying personal responsibility for the environment is the need to improve the level of knowledge and understanding about the environment: how does it work in practice, what are the critical capital assets of the environment, what are the natural limits on use of the environment, what is its natural carrying capacity? These are not just the esoteric questions of environmental scientists but ones which every citizen should have some understanding of. Improving understanding of how the environment works as a complex system at different geographic scales and its interaction with human activity is one of the most fundamental issues that we have in environmental education. What we do in one place could have very substantial effects in another, for example. Also the concepts of working with nature and natural processes rather than trying to work against them can have very considerable benefits and lower costs. Excellent examples are in trying to manage receding

coastlines where the hard physical structures long beloved by engineers have been shown for a long period of time to be a waste of public resource by creating problems elsewhere along the coast. Spending vast resources protecting settlements like Perth from flooding without taking action to allow flood plains upstream to flood makes little sense.

More prosaically, perhaps, is the need to ensure that urban society, in particular, understands the origins of many of the goods and services of the environment which we are dependent on in our everyday lives. It is a truism that some urban children believe that bread comes from the supermarket along the road rather than requiring the careful cultivation by experts of grain in a field and then a whole chain of activities until it arrives on the supermarket shelves.

(5) Campaigning

Environmental campaigning has now become a significant activity in its own right. To some it is the lifeblood for the future of global society, and to others it is a major irritant and block on development. For sure, some campaigners are so single minded in their approaches that perhaps they are not as influential as they might hope to be. On the other hand, without campaigning, we would not have had changes in approach to public transport, to air pollution, and to water quality that have been achieved. We seem to be very strong in terms of direct action campaigning, for instance against new road schemes, but much weaker where we wish to argue for change in the way that the environmental is effected by our demands for energy, food and fibre.

It is clear that the five different ways I have set out above are not mutually exclusive. Environmental citizenship as defined in the WWF Report would expect, if it is to be achieved, to have all citizens responsible at home and further afield in their approach to their footprint on the environment. It would expect citizens to be prepared to pay direct or indirectly for those resources and for the care of the environment, and to be prepared to increase their knowledge and understanding and apply it in their own decisions and in the way that they influence the decisions of others. And it would expect citizens

to campaign for change which ensure that the environment is at the heart of decision making.

How do we as citizens value the environment?

Another way to look at the issue is to consider: how to citizens value the environment? Individuals value the environment, and its component parts, in many and varied ways. It is important that we understand these different approaches and that we use our intellectual ingenuity to understand these perceptions and to improve our methods of valuation. Taking the examples of a river basin, a native woodland and the coast. I shall assess each in turn from aesthetic, cultural, existence value, scientific and economic perspectives. I shall then indicate the overall approach. The examples are chosen as a way of trying to capture the way individuals value the different parts of the environment.

(1) The river basin

The river basin is one of the major natural units in our terrestrial landscape and is vitally important in the various roles and functions which it performs for society.

Assessing it from an aesthetical or an amenity point of view then the things that people like are individual elements such as waterfalls, trees over the water, the subtle interplay between sky and the water surface, and the many seasonal effects of water and adjacent vegetation. In other words, ***we like it*** because it looks nice.

From a cultural point of view we can see a number of artefacts in the landscape. We can find monuments to previous generations. If we look hard we can find evidence of previous cultivation systems. And if we examine the buildings we can find many different uses over generations. In short, ***we inherit it*** and we seek to use it for our own benefit.

Even if we do not go out into the countryside and visit our mythical river basin, the fact that we know it is there and it can provide us with clean water, good quality food and wood for furniture and other purposes. We might look at it from afar through a video or a television programme or just read about it. In other words, it has an existence value in the jargon or in the commonplace language ***we value it for its own sake***.

Some of us will see the river basin from a more scientific perspective. We will have an understanding of its evolution over earth history, the particular parts of that history which provide the basin forms and hillslopes, the effects of tectonics on the rate of erosion and sedimentation in the basin etc. We will perhaps have some inkling of the processes which are ongoing and the current evolution of the basin: the overland and subsurface movement of water from the highest to the lowest parts, the development of soil profiles, the effect of different types of use on soil stability and fertility. We will probably have some knowledge of the native species within the river systems and their state of health: declining Atlantic salmon and sea trout, re-introductions of shad and lamphrey, discovery of more freshwater pearl mussels beds. We will probably know something about the interplay between these species and the management of the river for fishing and the interplay between these species and other species which prey upon them such as the various saw-billed ducks. We will probably have some view of the environmental footprint of human endeavour on the river basin; for example, the effect of grazing levels and afforestation, particularly in the upper parts of the catchment, changing soil runoff and sedimentation rates; the effect of the change from spring to autumn sowing on soil stability; and the effect of water abstraction for irrigation and for domestic and industrial use on water levels and original habitats. In other words, at a variety of different levels of knowledge we can say that ***we understand it***.

From an economic point of view, we tend to think of the river basin as an exploitable asset. Those things that we can identify in terms of their monetary value, such as the value of rock quarried out of the hillside in the river basin or the value of the salmon caught in the river or the red deer shot on the hill, all

have a direct financial value in the marketplace. However, the application of modern environmental economics demonstrates that we can value some of the non-monetary aspects of our river basin and set them alongside the more traditional monetary valuations. It is possible to use economics to justify spending on environmentally sensitive agriculture schemes which benefit wildlife and landscape and reduce soil loss. It is possible to determine the benefits of wild geese which create damage to agricultural land in our river basin in terms of the income to their local economy through hunters and bird watchers. It is possible to put values on the amenity value, recreational benefit and water management benefit in the catchment of forestry, as well as their market value as timber. We can also put a value on some of the timber which can be extracted from these forests as part of the long-term sustainable management and which is in demand for creative styles of furniture. In other words ***we put a value on it***.

Returning therefore to the five elements of environmental citizenship and relating them to the river basin, the following points can be made:

- **for lifestyle at home** citizens should ensure that their levels of water use are minimised,
- **for lifestyle in the community** that in visiting and appreciating these areas citizens should seek to make minimal environmental impact upon them;
- **for willingness to pay** citizens should personally through our taxes support the proper protection and management of key species within river systems, and show a willingness to pay for products which have been husbanded in an environmentally sensitive way such as foods, and be prepared to pay for excess use of water;
- **we should seek to understand** the importance of river basins in our everyday life as individuals and as a wider society, and make demands on the educational scientific system to ensure that material is accessible in a way for everyone to understand; and

- in our **campaigning** we should argue the need for strict environmental codes of practice for agriculture, forestry, water use, river management, and for river basins to manage as whole systems.

(2) **The Caledonian Pine Forest**

From an aesthetic point of view many people value the Caledonian Pine Forest for the magnificent "granny" pines with their twisted trunks and their contorted branches standing serenely in the landscape. ***We like it*** also because it somehow takes us back to a world which we do not normally access directly where nature seems to be almost totally in charge. We like it also because we know that there are many special bird species, particularly capercaillie, the Scottish crossbill and the crested tit, that live in these forests.

In Scotland, we certainly have a cultural pride in the Caledonian Pine Forest: **we inherit it**. Even if there was never any such thing as the "Great Wood of Caledon", as environmental historians tell us, we can see on closer inspection that there has been a living forest on which man has been dependent for many generations. Trees have been removed for constructing boats, branches have been used for thatching, and their bark has been used for tannin. We also find evidence of dwellings in the woods. And there is usually plenty of evidence of planting with non-native species of much higher growth rates than native ones.

We value it for its own sake because it exists. The fact that it is now only a very small fraction of the total coverage at the Climatic Optimum, increases its value to modern society. It is a source of pride for many in that it is being protected under very strict European Union habitat regulations. A good example of the value which society places on the Caledonian Pine Forest is the extent to which they have been purchased in recent years by voluntary environmental organisations, such as RSPB and NTS, and are also in the ownership of government organisations such as Forest Enterprise and Scottish Natural Heritage. Increasingly these organisations have public support for restoring these areas to their previous levels of diversity.

From a scientific point of view, we are clear that the remaining fragments of forest are too small for the whole range of species which would naturally occur there. To seek to re-introduce them, whether the wolf or the wild boar or others, would be foolhardy because the habitat is nether of sufficient quality nor sufficiently extensive. We have worked out through experiment and demonstration that we can retrieve the quality of all of the components of the wood from the soil through the floor and shrub levels to the tree level, if we have a more interventionist approach to grazing and to the removal of non-native species. We also know that too much disturbance, even by visitors, can reduce the regeneration of the plant species and reduce the productive success of key bird species. And we are beginning to understand the importance of these woods and forests as an intrinsic part of the natural ecosystem in regulating water run off, and storing carbon dioxide. In other words we have a greater **understanding** of their significance from a scientific perspective.

From an economic perspective we are increasingly ***putting a value on restoration of these woodland ecosystems***. A good deal of taxpayers money, as well as private money, is being invested in their restoration. By using economic techniques and ecological knowledge, we can get to the point where we can have the most economically efficient and environmentally effective redesign and restoration of these woodlands. We can also put a value on some of the timber which can be extracted from these forests as part of the longer sustainable management and which is in demand for different styles of furniture.

For Caledonian Pine Forests in terms of the five elements of environemntal citizenship the following is inferred:

- **lifestyle at home** citizens should recognise the value of timber for furniture and construction which has an environmental standard or kite mark;

- in **lifestyle in the community** citizens should be careful that we do not damage and disturb the delicate ecological balance in the woodlands when we visit, then particularly to see key species like the capercaille;
- **on willingness to pay** citizens should be prepared to allow government funds to rejuvenate and restore these assets and be prepared to subscribe to those organisations which purchase, own and manage these areas;
- **to improve our understanding** citizens should seek material on the importance of these woodlands and ensure that the material is accessible and intelligible to us; and
- in our **campaigning** citizens should argue for stopping the destruction of the remnant of the woodlands, for the extension of existing woodlands and connecting them with other woodlands through natural corridors, and for the removal of non-native species within them.

(3) The Coast

I have chosen the coast as the third example as most citizens will have some perception of it, if not direct access to it or knowledge of it.

From the **aesthetic** point of view the coast has many benefits, hence w**e like it** the subtle interplay of land and sea in our island areas, the changing mood of the sea under different weather and light conditions, the ability of the sea to be both constructive and destructive are all parts of the elemental aesthetic attraction of the coast. Indeed, the desire of people to visit the coast as a day-tripper or holidaymaker to participate in leisure and creation activities of the coast is a good manifestation of their amenity.

From a cultural point of view, the coast within Scottish history is an important inheritance: **we inherit it.** There has been a high dependency on food from the sea over many generations from the early strand loopers to the modern highly technically efficient fisherman. Our dependency is manifested in the location of our key towns and cities at or near to the coast and development of port and harbour infrastructure which is still utilised and which was the essence of links culturally with other parts of the world over many generations.

As people who live on an island, or indeed land with almost 100 inhabited islands and many more uninhabited ones, the very existence of the coast is important to many of us: **we value it for its own sake.** Even if we never go there, or go there very infrequently, the continuing battle between land and sea is something which we find awesome, if not frightening. The coast is long and has tremendous diversity which gives us many different opportunities for enjoying it. The coast is also a very important area for sea birds with many millions nesting and breeding around Scotland's coasts: sea bird cities like St Kilda being of world importance.

Our knowledge of the interplay between land and sea is extending all of the time: **we understand it.** Where the coast lies at the moment is perhaps an accident of post-glacial sea-level rise and isostatic readjustment. In places we have a greater understanding of the interplay between land and sea with the combination of erosion and accretion meaning the shoreline is ever changing. This is heightened by increased storminess and rising sea-level which have challenged scientists to develop explanatory models of what will happen and how we can combat or at least minimise the effect of sea-level rise where it is likely to create problems for properties. Scientific ingenuity has resulted in the development of many techniques which seek to work with nature but to minimise the impact of the energy of the sea in order to protect the land edge. We also have a greater understanding of the interplay between those species which are dependent upon the sea but live on land, in particular sea birds which nest and breed on sea cliffs but are dependent on the area immediately offshore for fledging and areas much further offshore for food supplies. It is increasingly important to understand, therefore, the coastal zone as an environmental system with the subtle interplay of land, air and sea and the energy transfers between them. We also have a greater understanding of the diversity of marine plant and animal life as we explore the waters in our sea lochs and off our rocky cliffs.

We are getting better at **putting a value** on the coast. In addition to the value of particular properties, whether links golf courses or houses or industrial

development, putting a value on the non-monetary aspects which will benefit health and wellbeing of individuals who are going to the coast has become increasingly important. It is also important in managing the coast to be clear of the economics of different types of management systems. For instance, we have choice between traditional hard concrete approaches to coastal protection and softer techniques, and between migrating links golf courses inland or sternly resisting their loss at the seaward side.

Relating the coast to the five aspects of environmental citizenship we can perhaps conclude as follows:

- **On lifestyle at home** citizens should resist building their homes or investing in properties which require expensive coast protection works;
- **On lifestyle in the community** in our use of the coast citizens should recognise its inherent fragility, that disturbance of breeding wildlife can create population collapses and that we can go to parts of the coast using public transport rather than using private vehicles;
- **Our willingness to pay** is manifested by citizens encouraging the most cost- effective forms of coastal protection rather than protection at any price bearing in mind our improved understanding of coastal processes; and also the role which government and non-government organisations play in the protection of coastal habitats and species;
- **To understand** the dynamics of the coast much better, citizens must encourage our academic experts to put this over in an understandable manner so that we have greater choices; and
- In **our campaigning** citizens should argue for more integrated approaches to the management of the coastal zone, and that those activities which are not suitable for siting on the coast should be sited elsewhere. We should argue the benefits of letting nature take its course in some places by allowing the coast to retreat and safeguarding it in others where property is vital.

In these three examples, therefore, it is clear that citizens value the environment from a number of perspectives

- **We like it**
- **We inherit it**
- **We value it for its own sake**
- **We understand it**
- **We put a value on it.**

But for the citizen to be environmentally truly responsible, we need to work towards them having appreciation of all of these five attributes. In addition, it is vital that the citizen has a concept not just of inheritance to the current generation but also the desirability of passing on these environmental assets in a better shape for future generations, so the sixth value should be **we pass it on** in better shape.

What can geography teachers contribute?

Basically geography teachers are in a very strong position to contribute to environmental citizenship. This is partly because of the subject matter itself, with its high level of understanding of the natural environment and human societies interaction with it and dependence on it. It is also partly because as teachers your role is to contribute to the education of citizens.

Looked at from a generic perspective then, the geographer is able to "connect the pieces". Geographers are extremely good at looking at the whole picture and from an environmental perspective this means linking environment with social and economic dimensions. There is a trend to teach the different parts of geography separately which flies in the face of the challenge of implementing sustainable development. This approach demands that more integrated methods are used which recognise the inter-dependency of the natural environment, with social well-being and economic prosperity.

Second, geography teachers can help from the specific perspective of the understanding of environmental systems themselves. Environmental systems are dynamic and not static and, as our subject has evolved, then so has the

approach we have taken to teaching it. Geography teachers are knowledgeable about how environmental systems work and the substantial growth in knowledge, whether it be in river basins or in forests or the coastal environment - the examples used earlier in this paper - of the dynamics of particular systems and the flows of energy and materials is now more accessible. We are also becoming much better at identifying ways of intervening which work with natural systems and processes rather against them. Although the argument is not always won, whether in river engineering or forest management or coastal engineering, we now have a greater knowledge of how some interventions are successful and improve the environment and others are very detrimental.

Geography teachers can also ensure that citizens have understanding and knowledge of the tools to play their role in society. Geography should teach students how to analyse issues, how to solve problems, how to make decisions, how to use technical information, and how to manipulate data.

And finally, geography teachers can also contribute from a broader societal perspective. You have the opportunity to go over messages about responsible behaviour of individuals both now and in the future, the responsibility of individuals within wider society and how the membership of that society is different groupings can be an important facet of environmental citizenship. Also, there is increasing need to teach about the ability to reduce environmental conflicts through mediation and moderation techniques, not necessarily approaches through the legal system, but more informal approaches which have been successfully used here and many other countries.