10

THE ENVIRONMENT

A river tumbles through forested ravines and rocky gorges towards the sea. The state hydro-electricity commission sees the falling water as untapped energy. Building a dam across one of the gorges would provide three years of employment for a thousand people, and longer-term employment for twenty or thirty. The dam would store enough water to ensure that the state could economically meet its energy needs for the next decade. This would encourage the establishment of energy-intensive industry thus further contributing to employment and economic growth.

The rough terrain of the river valley makes it accessible only to the reasonably fit, but it is nevertheless a favoured spot for bushwalking. The river itself attracts the more daring whitewater rafters. Deep in the sheltered valleys are stands of rare Huon Pine, many of the trees being over a thousand years old. The valleys and gorges are home to many birds and animals, including an endangered species of marsupial mouse that has seldom been found outside the valley. There may be other rare plants and animals as well, but no one knows, for scientists are yet to investigate the region fully.

SHOULD the dam be built? This is one example of a situation in which we must choose between very different sets of values. The description is loosely based on a proposed dam on the Franklin River, in the southwest of Australia's island state, Tasmania – an account of the outcome can be found in Chapter 11, but I have deliberately altered some details, and the above description should be treated as a hypothetical case. Many other examples would have posed the choice between values equally well: logging virgin forests, building a paper mill that will release pollutants into coastal waters, or opening a new mine on the

edge of a national park. A different set of examples would raise related, but slightly different, issues: the use of products that contribute to the depletion of the ozone layer, or to the greenhouse effect; building more nuclear power stations; and so on. In this chapter I explore the values that underlie debates about these decisions, and the example I have presented can serve as a point of reference to these debates. I shall focus particularly on the values at issue in controversies about the preservation of wilderness because here the fundamentally different values of the two parties are most apparent. When we are talking about flooding a river valley, the choice before us is starkly clear.

In general we can say that those who favour building the dam are valuing employment and a higher per capita income for the state above the preservation of wilderness, of plants and animals (both common ones and members of an endangered species), and of opportunities for outdoor recreational activities. Before we begin to scrutinise the values of those who would have the dam build and those who would not, however, let us briefly investigate the origins of modern attitudes towards the natural world.

THE WESTERN TRADITION

Western attitudes to nature grew out of a blend of those of the Hebrew people, as represented in the early books of the Bible, and the philosophy of the ancient Greeks, particularly that of Aristotle. In contrast to some other ancient traditions, for example, those of India, both the Hebrew and the Greek traditions made human beings the centre of the moral universe – indeed not merely the centre, but very often, the entirety of the morally significant features of this world.

The biblical story of creation, in Genesis, makes clear the Hebrew view of the special place of human beings in the divine plan:

> And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the earth, and over every creeping thing that creepeth upon the earth.
> So God created man in his own image, in the image of God created he him; male and female created he them.
> And God blessed them, and God said upon them, Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea and over the fowl of the air, and over every living thing that moveth upon the earth.

Today Christians debate the meaning of this grant of 'dominion'; and those concerned about the environment claim that it should be regarded not as a license to do as we will with other living things, but rather as a directive to look after them, on God's behalf, and be answerable to God for the way in which we treat them. There is, however, little justification in the text itself for such an interpretation; and given the example God set when he drowned almost every animal on earth in order to punish human beings for their wickedness, it is no wonder that people should think the flooding of a single river valley is nothing worth worrying about. After the flood there is a repetition of the grant of dominion in more ominous language: 'And the fear of you and the dread of you shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hands are they delivered.'

The implication is clear: to act in a way that causes fear and dread to everything that moves on the earth is not improper; it is, in fact, in accordance with a God-given decree.

The most influential early Christian thinkers had no doubts about how man's dominion was to be understood. 'Doth God care for oxen?' asked Paul, in the course of a discussion of an Old Testament command to rest one's ox on the sabbath, but it was only a rhetorical question – he took it for granted that the answer must be negative, and the command was to be explained in terms of some benefit to humans. Augustine shared

this line of thought; referring to stories in the New Testament in which Jesus destroyed a fig tree and caused a herd of pigs to drown, Augustine explained these puzzling incidents as intended to teach us that 'to refrain from the killing of animals and the destroying of plants is the height of superstition'.

When Christianity prevailed in the Roman Empire, it also absorbed elements of the ancient Greek attitude to the natural world. The Greek influence was entrenched in Christian philosophy by the greatest of the medieval scholastics, Thomas Aquinas, whose life work was the melding of Christian theology with the thought of Aristotle. Aristotle regarded nature as a hierarchy in which those with less reasoning ability exist for the sake of those with more:

> Plants exist for the sake of animals, and brute beasts for the sake of man – domestic animals for his use and food, wild ones (or at any rate most of them) for food and other accessories of life, such as clothing and various tools.
>
> Since nature makes nothing purposeless or in vain, it is undeniably true that she has made all animals for the sake of man.

In his own major work, the *Summa Theologica*, Aquinas followed this passage from Aristotle almost word for word, adding that the position accords with God's command, as given in Genesis. In his classification of sins, Aquinas has room only for sins against God, ourselves, or our neighbours. There is no possibility of sinning against non-human animals, or against the natural world.

This was the thinking of mainstream Christianity for at least its first eighteen centuries. There were gentler spirits, certainly, like Basil, John Chrysostom, and Francis of Assisi, but for most of Christian history they have had no significant impact on the dominant tradition. It is therefore worth emphasising the major features of this dominant Western tradition, because these features can serve as a point of comparison when we discuss different views of the natural environment.

According to the dominant Western tradition, the natural

world exists for the benefit of human beings. God gave human beings dominion over the natural world, and God does not care how we treat it. Human beings are the only morally important members of this world. Nature itself is of no intrinsic value, and the destruction of plants and animals cannot be sinful, unless by this destruction we harm human beings.

Harsh as this tradition is, it does not rule out concern for the preservation of nature, as long as that concern can be related to human well-being. Often, of course, it can be. One could, entirely within the limits of the dominant Western tradition, oppose nuclear power on the grounds that nuclear fuel, whether in bombs or power stations, is so hazardous to human life that the uranium is better left in the ground. Similarly, many arguments against pollution, the use of gases harmful to the ozone layer, the burning of fossil fuels, and the destruction of forests, could be couched in terms of the harm to human health and welfare from the pollutants, or the changes to the climate that will occur as a result of the use of fossil fuels and the loss of forest. The greenhouse effect – to take just one danger to our environment – threatens to bring about a rise in sea level that will inundate low-lying coastal areas. This includes the fertile and densely populated Nile delta in Egypt, and the Bengal delta region, which covers 80 per cent of Bangladesh and is already subject to violent seasonal storms that cause disastrous floods. The homes and livelihood of 46 million people are at risk in these two deltas alone. A rise in sea level could also wipe out entire island nations such as the Maldives, none of which is more than a metre or two above sea level. So it is obvious that even within a human-centred moral framework, the preservation of our environment is a value of the greatest possible importance.

From the standpoint of a form of civilisation based on growing crops and grazing animals, wilderness may seem to be a wasteland, a useless area that needs clearing in order to render it productive and valuable. There was a time when villages sur-

rounded by farmland seemed like oases of cultivation amongst the deserts of forest or rough mountain slopes. Now, however, a different metaphor is more appropriate: the remnants of true wilderness left to us are like islands amidst a sea of human activity that threatens to engulf them. This gives wilderness a scarcity value that provides the basis for a strong argument for preservation, even within the terms of a human-centred ethic. That argument becomes much stronger still when we take a long-term view. To this immensely important aspect of environmental values we shall now turn.

FUTURE GENERATIONS

A virgin forest is the product of all the millions of years that have passed since the beginning of our planet. If it is cut down, another forest may grow up, but the continuity has been broken. The disruption in the natural life cycles of the plants and animals means that the forest will never again be as it would have been, had it not been cut. The gains made from cutting the forest – employment, profits for business, export earnings, and cheaper cardboard and paper for packaging – are short-term benefits. Even if the forest is not cut, but drowned to build a dam to create electricity, it is likely that the benefits will last for only a generation or two: after that new technology will render such methods of generating power obsolete. Once the forest is cut or drowned, however, the link with the past has gone for ever. That is a cost that will be borne by every generation that succeeds us on this planet. It is for that reason that environmentalists are right to speak of wilderness as a 'world heritage'. It is something that we have inherited from our ancestors, and that we must preserve for our descendants, if they are to have it at all.

In contrast to many more stable, tradition-oriented human societies, our modern political and cultural ethos has great difficulty in recognising long-term values. Politicians are notorious for not looking beyond the next election; but even if they do,

they will find their economic advisers telling them that anything to be gained in the future should be discounted to such a degree as to make it easy to disregard the long-term future altogether. Economists have been taught to apply a discount rate to all future goods. In other words, a million dollars in twenty years is not worth a million dollars today, even when we allow for inflation. Economists will discount the value of the million dollars by a certain percentage, usually corresponding to the real long-term interest rates. This makes economic sense, because if I had a thousand dollars today I could invest it so that it would be worth more, in real terms, in twenty years. But the use of a discount rate means that values gained one hundred years hence rank very low, in comparison with values gained today; and values gained one thousand years in the future scarcely count at all. This is not because of any uncertainty about whether there will be human beings or other sentient creatures inhabiting this planet at that time, but merely because of the cumulative effect of the rate of return on money invested now. From the standpoint of the priceless and timeless values of wilderness, however, applying a discount rate gives us the wrong answer. There are some things that, once lost, no amount of money can regain. Thus to justify the destruction of an ancient forest on the grounds that it will earn us substantial export income is unsound, even if we could invest that income and increase its value from year to year; for no matter how much we increased its value, it could never buy back the link with the past represented by the forest.

This argument does not show that there can be no justification for cutting any virgin forests, but it does mean that any such justification must take full account of the value of the forests to the generations to come in the more remote future, as well as in the more immediate future. This value will obviously be related to the particular scenic or biological significance of the forest; but as the proportion of true wilderness on the earth dwindles, every part of it becomes significant, because the op-

portunities for experiencing wilderness become scarce, and the likelihood of a reasonable selection of the major forms of wilderness being preserved is reduced.

Can we be sure that future generations will appreciate wilderness? Perhaps they will be happier sitting in air-conditioned shopping malls, playing computer games more sophisticated than any we can imagine? That is possible. But there are several reasons why we should not give this possibility too much weight. First, the trend has been in the opposite direction: the appreciation of wilderness has never been higher than it is today, especially among those nations that have overcome the problems of poverty and hunger and have relatively little wilderness left. Wilderness is valued as something of immense beauty, as a reservoir of scientific knowledge still to be gained, for the recreational opportunities that it provides, and because many people just like to know that something natural is still there, relatively untouched by modern civilisation. If, as we all hope, future generations are able to provide for the basic needs of most people, we can expect that for centuries to come, they, too, will value wilderness for the same reasons that we value it.

Arguments for preservation based on the beauty of wilderness are sometimes treated as if they were of little weight because they are 'merely aesthetic'. That is a mistake. We go to great lengths to preserve the artistic treasures of earlier human civilisations. It is difficult to imagine any economic gain that we would be prepared to accept as adequate compensation for, for instance, the destruction of the paintings in the Louvre. How should we compare the aesthetic value of wilderness with that of the paintings in the Louvre? Here, perhaps, judgment does become inescapably subjective; so I shall report my own experiences. I have looked at the paintings in the Louvre, and in many of the other great galleries of Europe and the United States. I think I have a reasonable sense of appreciation of the

fine arts; yet I have not had, in any museum, experiences that have filled my aesthetic senses in the way that they are filled when I walk in a natural setting and pause to survey the view from a rocky peak overlooking a forested valley, or sit by a stream tumbling over moss-covered boulders set amongst tall tree-ferns, growing in the shade of the forest canopy. I do not think I am alone in this; for many people, wilderness is the source of the greatest feelings of aesthetic appreciation, rising to an almost spiritual intensity.

It may nevertheless be true that this appreciation of nature will not be shared by people living a century or two hence. But if wilderness can be the source of such deep joy and satisfaction, that would be a great loss. To some extent, whether future generations value wilderness is up to us; it is, at least, a decision we can influence. By our preservation of areas of wilderness, we provide an opportunity for generations to come, and by the books and films we produce, we create a culture that can be handed on to our children and their children. If we feel that a walk in the forest, with senses attuned to the appreciation of such an experience, is a more deeply rewarding way to spend a day than playing computer games, or if we feel that to carry one's food and shelter in a backpack for a week while hiking through an unspoiled natural environment will do more to develop character than watching television for an equivalent period, then we ought to encourage future generations to have a feeling for nature; if they end up preferring computer games, we shall have failed.

Finally, if we preserve intact the amount of wilderness that exists now, future generations will at least have the choice of getting up from their computer games and going to see a world that has not been created by human beings. If we destroy the wilderness, that choice is gone forever. Just as we rightly spend large sums to preserve cities like Venice, even though future generations conceivably may not be interested in such architectural treasures, so we should preserve wilderness even

though it is possible that future generations will care little for it. Thus we will not wrong future generations, as we have been wronged by members of past generations whose thoughtless actions have deprived us of the possibility of seeing such animals as the dodo, Steller's sea cow, or the thylacine, the Tasmanian marsupial 'tiger'. We must take care not to inflict equally irreparable losses on the generations to follow us.

Here, too, the effort to mitigate the greenhouse effect deserves the highest priority. For if by 'wilderness' we mean that part of our planet that is unaffected by human activity, perhaps it is already too late: there may be no wilderness left anywhere on our planet. Bill McKibben has argued that by depleting the ozone layer and increasing the amount of carbon dioxide in the atmosphere, we have already brought about the change encapsulated in the title of his book – *The End of Nature*: 'By changing the weather, we make every spot on earth man-made and artificial. We have deprived nature of its independence, and that is fatal to its meaning. Nature's independence is its meaning; without it there is nothing but us.'

This is a profoundly disturbing thought. Yet McKibben does not develop it in order to suggest that we may as well give up our efforts to reverse the trend. It is true that in one sense of the term, 'nature' is finished. We have passed a watershed in the history of our planet. As McKibben says, 'we live in a post-natural world'. Nothing can undo that; the climate of our planet is under our influence. We still have, however, much that we value in nature, and it may still be possible to save what is left.

Thus a human-centred ethic can be the basis of powerful arguments for what we may call 'environmental values'. Such an ethic does not imply that economic growth is more important than the preservation of wilderness; on the contrary, it is quite compatible with a human-centred ethic to see economic growth based on the exploitation of irreplaceable resources as something that brings gains to the present generation, and possibly the next generation or two, but at a price that will be paid by

every generation to come. But in the light of our discussion of speciesism in Chapter 3, it should also be clear that it is wrong to limit ourselves to a human-centred ethic. We now need to consider more fundamental challenges to this traditional Western approach to environmental issues.

IS THERE VALUE BEYOND SENTIENT BEINGS?

Although some debates about significant environmental issues can be conducted by appealing only to the long-term interests of our own species, in any serious exploration of environmental values a central issue will be the question of intrinsic value. We have already seen that it is arbitrary to hold that only human beings are of intrinsic value. If we find value in human conscious experiences, we cannot deny that there is value in at least some experiences of non-human beings. How far does intrinsic value extend? To all, but only, sentient beings? Or beyond the boundary of sentience?

To explore this question a few remarks on the notion of 'intrinsic value' will be helpful. Something is of intrinsic value if it is good or desirable *in itself*; the contrast is with 'instrumental value', that is, value as a means to some other end or purpose. Our own happiness, for example, is of intrinsic value, at least to most of us, in that we desire it for its own sake. Money, on the other hand, is only of instrumental value to us. We want it because of the things we can buy with it, but if we were marooned on a desert island, we would not want it. (Whereas happiness would be just as important to us on a desert island as anywhere else.)

Now consider again for a moment the issue of damming the river described at the beginning of this chapter. If the decision were to be made on the basis of human interests alone, we would balance the economic benefits of the dam for the citizens of the state against the loss for bushwalkers, scientists, and others, now and in the future, who value the preservation of

the river in its natural state. We have already seen that because this calculation includes an indefinite number of future generations, the loss of the wild river is a much greater cost than we might at first imagine. Even so, once we broaden the basis of our decision beyond the interests of human beings, we have much more to set against the economic benefits of building the dam. Into the calculations must now go the interests of all the non-human animals who live in the area that will be flooded. A few may be able to move to a neighboring area that is suitable, but wilderness is not full of vacant niches awaiting an occupant; if there is territory that can sustain a native animal, it is most likely already occupied. Thus most of the animals living in the flooded area will die: either they will be drowned, or they will starve. Neither drowning nor starvation are easy ways to die, and the suffering involved in these deaths should, as we have seen, be given no less weight than we would give to an equivalent amount of suffering experienced by human beings. This will significantly increase the weight of considerations against building the dam.

What of the fact that the animals will die, apart from the suffering that will occur in the course of dying? As we have seen, one can, without being guilty of arbitrary discrimination on the basis of species, regard the death of a non-human animal who is not a person as less significant than the death of a person, since humans are capable of foresight and forward planning in ways that non-human animals are not. This difference between causing death to a person and to a being who is not a person does not mean that the death of an animal who is not a person should be treated as being of no account. On the contrary, utilitarians will take into account the loss that death inflicts on the animals – the loss of all their future existence, and the experiences that their future lives would have contained. When a proposed dam would flood a valley and kill thousands, perhaps millions, of sentient creatures, these deaths should be given great importance in any assessment of the costs and benefits of

building the dam. For those utilitarians who accept the total view discussed in Chapter 4, moreover, if the dam destroys the habitat in which the animals lived, then it is relevant that this loss is a continuing one. If the dam is not built, animals will presumably continue to live in the valley for thousands of years, experiencing their own distinctive pleasures and pains. One might question whether life for animals in a natural environment yields a surplus of pleasure over pain, or of satisfaction over frustration of preferences. At this point the idea of calculating benefits becomes almost absurd; but that does not mean that the loss of future animal lives should be dismissed from our decision making.

That, however, may not be all. Should we also give weight, not only to the suffering and death of individual animals, but to the fact that an entire species may disappear? What of the loss of trees that have stood for thousands of years? How much – if any – weight should we give to the preservation of the animals, the species, the trees and the valley's ecosystem, independently of the interests of human beings – whether economic, recreational, or scientific – in their preservation?

Here we have a fundamental moral disagreement: a disagreement about what kinds of beings ought to be considered in our moral deliberations. Let us look at what has been said on behalf of extending ethics beyond sentient beings.

REVERENCE FOR LIFE

The ethical position developed in this book is an extension of the ethic of the dominant Western tradition. This extended ethic draws the boundary of moral consideration around all sentient creatures, but leaves other living things outside that boundary. The drowning of the ancient forests, the possible loss of an entire species, the destruction of several complex ecosystems, the blockage of the wild river itself, and the loss of those rocky gorges are factors to be taken into account only

in so far as they adversely affect sentient creatures. Is a more radical break with the traditional position possible? Can some or all of these aspects of the flooding of the valley be shown to have intrinsic value, so that they must be taken into account independently of their effects on human beings or non-human animals?

To extend an ethic in a plausible way beyond sentient beings is a difficult task. An ethic based on the interests of sentient creatures is on familiar ground. Sentient creatures have wants and desires. The question: 'What is it like to be a possum drowning?' at least makes sense, even if it is impossible for us to give a more precise answer than 'It must be horrible'. In reaching moral decisions affecting sentient creatures, we can attempt to add up the effects of different actions on all the sentient creatures affected by the alternative actions open to us. This provides us with at least some rough guide to what might be the right thing to do. But there is *nothing* that corresponds to what it is like to be a tree dying because its roots have been flooded. Once we abandon the interests of sentient creatures as our source of value, where do we find value? What is good or bad for nonsentient creatures, and why does it matter?

It might be thought that as long as we limit ourselves to living things, the answer is not too difficult to find. We know what is good or bad for the plants in our garden: water, sunlight, and compost are good; extremes of heat or cold are bad. The same applies to plants in any forest or wilderness, so why not regard their flourishing as good in itself, independently of its usefulness to sentient creatures?

One problem here is that without conscious interests to guide us, we have no way of assessing the relative weights to be given to the flourishing of different forms of life. Is a two-thousand-year-old Huon pine more worthy of preservation than a tussock of grass? Most people will say that it is, but such a judgment seems to have more to do with our feelings of awe for the age,

size, and beauty of the tree, or with the length of time it would take to replace it, than with our perception of some intrinsic value in the flourishing of an old tree that is not possessed by a young grass tussock.

If we cease talking in terms of sentience, the boundary between living and inanimate natural objects becomes more difficult to defend. Would it really be worse to cut down an old tree than to destroy a beautiful stalactite that has taken even longer to grow? On what grounds could such a judgment be made? Probably the best known defence of an ethic that extends to all living things is that of Albert Schweitzer. The phrase he used, 'reverence for life', is often quoted; the arguments he offered in support of such a position are less well-known. Here is one of the few passages in which he defended his ethic:

> True philosophy must commence with the most immediate and comprehensive facts of consciousness. And this may be formulated as follows: 'I am life which wills to live, and I exist in the midst of life which wills to live.' . . . Just as in my own will-to-live there is a yearning for more life, and for that mysterious exaltation of the will which is called pleasure, and terror in face of annihilation and that injury to the will-to-live which is called pain; so the same obtains in all the will-to-live around me, equally whether it can express itself to my comprehension or whether it remains unvoiced.
>
> Ethics thus consists in this, that I experience the necessity of practising the same reverence for life toward all will-to-live, as toward my own. Therein I have already the needed fundamental principle of morality. It is good to maintain and cherish life; it is *evil* to destroy and to check life. A man is really ethical only when he obeys the constraint laid on him to help all life which he is able to succour, and when he goes out of his way to avoid injuring anything living. He does not ask how far this or that life deserves sympathy as valuable in itself, nor how far it is capable of feeling. To him life as such is sacred. He shatters no ice crystal that sparkles in the sun, tears no leaf from its tree, breaks off no flower, and is careful not to crush any insect as he

> walks. If he works by lamplight on a summer evening he prefers to keep the window shut and to breathe stifling air, rather than to see insect after insect fall on his table with singed and sinking wings.

A similar view has been defended recently by the contemporary American philosopher Paul Taylor. In his book *Respect for Nature*, Taylor argues that every living thing is 'pursuing its own good in its own unique way.' Once we see this, we can see all living things 'as we see ourselves' and therefore 'we are ready to place the same value on their existence as we do on our own'.

It is not clear how we should interpret Schweitzer's position. The reference to the ice crystal is especially puzzling, for an ice crystal is not alive at all. Putting this aside, however, the problem with the defences offered by both Schweitzer and Taylor for their ethical views is that they use language metaphorically and then argue as if what they had said was literally true. We may often talk about plants 'seeking' water or light so that they can survive, and this way of thinking about plants makes it easier to accept talk of their 'will to live', or of them 'pursuing' their own good. But once we stop to reflect on the fact that plants are not conscious and cannot engage in any intentional behaviour, it is clear that all this language is metaphorical; one might just as well say that a river is pursuing its own good and striving to reach the sea, or that the 'good' of a guided missile is to blow itself up along with its target. It is misleading of Schweitzer to attempt to sway us towards an ethic of reverence for all life by referring to 'yearning', 'exaltation', 'pleasure', and 'terror'. Plants experience none of these.

Moreover, in the case of plants, rivers, and guided missiles, it is possible to give a purely physical explanation of what is happening; and in the absence of consciousness, there is no good reason why we should have greater respect for the physical processes that govern the growth and decay of living things than we have for those that govern non-living things. This being so,

it is at least not obvious why we should have greater reverence for a tree than for a stalactite, or for a single-celled organism than for a mountain.

DEEP ECOLOGY

More than forty years ago the American ecologist Aldo Leopold wrote that there was a need for a 'new ethic', an 'ethic dealing with man's relation to land and to the animals and plants which grow upon it'. His proposed 'land ethic' would enlarge 'the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land'. The rise of ecological concern in the early 1970s led to a revival of interest in this attitude. The Norwegian philosopher Arne Naess wrote a brief but influential article distinguishing between 'shallow' and 'deep' strands in the ecological movement. Shallow ecological thinking was limited to the traditional moral framework; those who thought in this way were anxious to avoid pollution to our water supply so that we could have safe water to drink, and they sought to preserve wilderness so that people could continue to enjoy walking through it. Deep ecologists, on the other hand, wanted to preserve the integrity of the biosphere for its own sake, irrespective of the possible benefits to humans that might flow from so doing. Subsequently several other writers have attempted to develop some form of 'deep' environmental theory.

Where the reverence for life ethic emphasises individual living organisms, proposals for deep ecology ethics tend to take something larger as the object of value: species, ecological systems, even the biosphere as a whole. Leopold summed up the basis of his new land ethic thus: 'A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.' In a paper published in 1984, Arne Naess and George Sessions, an American philosopher involved in the deep ecology movement, set out

several principles for a deep ecological ethic, beginning with the following:

1 The well-being and flourishing of human and non-human Life on Earth have value in themselves (synonyms: intrinsic value, inherent value). These values are independent of the usefulness of the non-human world for human purposes.
2 Richness and diversity of life forms contribute to the realisation of these values and are also values in themselves.
3 Humans have no right to reduce this richness and diversity except to satisfy *vital* needs.

Although these principles refer only to life, in the same paper Naess and Sessions say that deep ecology uses the term 'biosphere' in a more comprehensive way, to refer also to non-living things such as rivers (watersheds), landscapes, and ecosystems. Two Australians working at the deep end of environmental ethics, Richard Sylvan and Val Plumwood, also extend their ethic beyond living things, including in it an obligation 'not to jeopardise the well-being of natural objects or systems without good reason'.

In the previous section I quoted Paul Taylor's remark to the effect that we should be ready not merely to respect every living thing, but to place the same value on the life of every living thing as we place on our own. This is a common theme among deep ecologists, often extended beyond living things. In *Deep Ecology* Bill Devall and George Sessions defend a form of 'biocentric egalitarianism':

> The intuition of biocentric equality is that all things in the biosphere have an equal right to live and blossom and to reach their own individual forms of unfolding and self-realisation within the larger Self-realisation. This basic intuition is that all organisms and entities in the ecosphere, as parts of the interrelated whole, are equal in intrinsic worth.

If, as this quotation appears to suggest, this biocentric equality rests on a 'basic intuition', it is up against some strong intuitions that point in the opposite direction – for example, the intuition

that the rights to 'live and blossom' of normal adult humans ought to be preferred over those of yeasts, and the rights of gorillas over those of grasses. If, however, the point is that humans, gorillas, yeasts, and grasses are all parts of an interrelated whole, then it can still be asked how this establishes that they are equal in intrinsic worth. Is it because every living thing plays its role in an ecosystem on which all depend for their survival? But, firstly, even if this showed that there is intrinsic worth in micro-organisms and plants *as a whole*, it says nothing at all about the value of individual micro-organisms or plants, since no individual is necessary for the survival of the ecosystem as a whole. Secondly, the fact that all organisms are part of an interrelated whole does not suggest that they are all of *intrinsic* worth, let alone of equal intrinsic worth. They may be of worth only because they are needed for the existence of the whole, and the whole may be of worth only because it supports the existence of conscious beings.

The ethics of deep ecology thus fail to yield persuasive answers to questions about the value of the lives of individual living beings. Perhaps, though, this is the wrong kind of question to ask. As the science of ecology looks at systems rather than individual organisms, so ecological ethics might be more plausible if applied at a higher level, perhaps at the level of species and ecosystems. Behind many attempts to derive values from ecological ethics at this level lies some form of holism – some sense that the species or ecosystem is not just a collection of individuals, but really an entity in its own right. This holism is made explicit in Lawrence Johnson's *A Morally Deep World*. Johnson is quite prepared to talk about the interests of a species, in a sense that is distinct from the sum of the interests of each member of the species, and to argue that the interests of a species, or an ecosystem, ought to be taken into account, alongside individual interests, in our moral deliberations. In *The Ecological Self*, Freya Mathews contends that any 'self-realising system' has intrinsic value in that it seeks to maintain or preserve

itself. While living organisms are paradigm examples of self-realising systems, Mathews, like Johnson, includes species and ecosystems as holistic entities or selves with their own form of realisation. She even includes the entire global ecosystem, following James Lovelock in referring to it by the name of the Greek goddess of the earth, Gaia. On this basis she defends her own form of biocentric egalitarianism.

There is, of course, a real philosophical question about whether a species or an ecosystem can be considered as the sort of individual that can have interests, or a 'self' to be realised; and even if it can, the deep ecology ethic will face problems similar to those we identified in considering the idea of reverence for life. For it is necessary, not merely that trees, species, and ecosystems can properly be said to have interests, but that they have morally significant interests. If they are to be regarded as 'selves' it will need to be shown that the survival or realisation of that kind of self has moral value, independently of the value it has because of its importance in sustaining conscious life.

We saw in discussing the ethic of reverence for life that one way of establishing that an interest is morally significant is to ask what it is like for the entity affected to have that interest unsatisfied. The same question can be asked about self-realisation: what is it like *for the self* to remain unrealised? Such questions yield intelligible answers when asked of sentient beings, but not when asked of trees, species, or ecosystems. The fact that, as James Lovelock points out in *Gaia: A New Look at Life on Earth*, the biosphere can respond to events in ways that resemble a self-maintaining system, does not in itself show that the biosphere consciously desires to maintain itself. Calling the global ecosystem by the name of a Greek goddess seems a nice idea, but it may not be the best way of helping us to think clearly about its nature. Similarly, on a smaller scale, there is nothing that corresponds to what it feels like to be an ecosystem flooded by a dam, because there is no such feeling. In this respect trees, ecosystems, and species are more like rocks than they are

like sentient beings; so the divide between sentient and non-sentient creatures is to that extent a firmer basis for a morally important boundary than the divide between living and non-living things, or between holistic entities and any other entities that we might not regard as holistic. (Whatever these other entities could be: even a single atom is, when seen from the appropriate level, a complex system that 'seeks' to maintain itself.)

This rejection of the ethical basis for a deep ecology ethic does not mean that the case for the preservation of wilderness is not strong. All it means is that one kind of argument – the argument from the intrinsic value of the plants, species, or ecosystems – is, at best, problematic. Unless it can be placed on a different, and firmer footing, we should confine ourselves to arguments based on the interests of sentient creatures, present and future, human and non-human. These arguments are quite sufficient to show that, at least in a society where no one needs to destroy wilderness in order to obtain food for survival or materials for shelter from the elements, the value of preserving the remaining significant areas of wilderness greatly exceeds the economic values gained by its destruction.

DEVELOPING AN ENVIRONMENTAL ETHIC

In the long run, the set of ethical virtues praised and the set of ethical prohibitions adopted by the ethic of specific societies will always reflect the conditions under which they must live and work in order to survive. That statement is close to being a tautology, because if a society's ethic did not take into account whatever was needed for survival, the society would cease to exist. Many of the ethical standards that we accept today can be explained in these terms. Some are universal and can be expected to be beneficial to the community in virtually any conditions in which humans live. Obviously a society in which members of the community are permitted to kill each other with

impunity would not last long. Conversely, the parental virtues of caring for children, and other virtues like honesty, or loyalty to the group, would foster a stable and lasting community. Other prohibitions may reflect specific conditions: the practice among the Eskimo of killing elderly parents no longer able to fend for themselves, is often cited as a necessary response to life in a very harsh climate. No doubt the slow pace of changing climatic conditions, or of migration to different regions, allowed time for systems of ethics to make the necessary adjustment.

Now we face a new threat to our survival. The proliferation of human beings, coupled with the by-products of economic growth, is just as capable as the old threats of wiping out our society – and every other society as well. No ethic has yet developed to cope with this threat. Some ethical principles that we do have are exactly the opposite of what we need. The problem is that, as we have already seen, ethical principles change slowly and the time we have left to develop a new environmental ethic is short. Such an ethic would regard every action that is harmful to the environment as ethically dubious, and those that are unnecessarily harmful as plainly wrong. That is the serious point behind my remark in the first chapter that the moral issues raised by driving a car are more serious than those raised by sexual behaviour. An environmental ethic would find virtue in saving and recycling resources, and vice in extravagance and unnecessary consumption. To take just one example: from the perspective of an environmental ethic, our choice of recreation is not ethically neutral. At present we see the choice between motor car racing or cycling, between water skiing or windsurfing, as merely a matter of taste. Yet there is an essential difference: motor car racing and water skiing require the consumption of fossil fuels and the discharge of carbon dioxide into the atmosphere. Cycling and windsurfing do not. Once we take the need to preserve our environment seriously, motor racing and water skiing will no more be an acceptable form of entertainment than bear-baiting is today.

The broad outlines of a truly environmental ethic are easy to discern. At its most fundamental level, such an ethic fosters consideration for the interests of all sentient creatures, including subsequent generations stretching into the far future. It is accompanied by an aesthetic of appreciation for wild places and unspoiled nature. At a more detailed level, applicable to the lives of dwellers in cities and towns, it discourages large families. (Here it forms a sharp contrast to some existing ethical beliefs that are relics of an age in which the earth was far more lightly populated; it also offers a counterweight to the implication of the 'total' version of utilitarianism discussed in Chapter 4.) An environmental ethic rejects the ideals of a materialist society in which success is gauged by the number of consumer goods one can accumulate. Instead it judges success in terms of the development of one's abilities and the achievement of real fulfilment and satisfaction. It promotes frugality, in so far as that is necessary for minimising pollution and ensuring that everything that can be re-used is re-used. Carelessly to throw out material that can be recycled is a form of vandalism or the theft of our common property in the resources of the world. Thus the various 'green consumer' guides and books about things we can do to save our planet – recycling what we use and buying the most environmentally friendly products available – are part of the new ethic that is required. Even they may prove to be only an interim solution, a stepping-stone to an ethic in which the very idea of consuming unnecessary products is questioned. Wind-surfing may be better than water-skiing, but if we keep on buying new boards in order to be up to date with the latest trends in board and sail designs, the difference is only marginal.

We must re-assess our notion of extravagance. In a world under pressure, this concept is not confined to chauffeured limousines and Dom Perignon champagne. Timber that has come from a rainforest is extravagant, because the long-term value of the rainforest is far greater than the uses to which the timber is put. Disposable paper products are extravagant, because an-

cient hardwood forests are being converted into wood-chips and sold to paper manufacturers. 'Going for a drive in the country' is an extravagant use of fossil fuels that contributes to the greenhouse effect. During the Second World War, when petrol was scarce, posters asked: 'Is your journey really necessary?' The appeal to national solidarity against a visible and immediate danger was highly effective. The danger to our environment is less immediate and much harder to see, but the need to cut out unnecessary journeys and other forms of unnecessary consumption is just as great.

As far as food is concerned, the great extravagance is not caviar or truffles, but beef, pork, and poultry. Some 38 per cent of the world's grain crop is now fed to animals, as well as large quantities of soybeans. There are three times as many domestic animals on this planet as there are human beings. The combined weight of the world's 1.28 billion cattle alone exceeds that of the human population. While we look darkly at the number of babies being born in poorer parts of the world, we ignore the over-population of farm animals, to which we ourselves contribute. The prodigious waste of grain that is fed to intensively farmed animals has already been mentioned in Chapters 3 and 8. That, however, is only part of the damage done by the animals we deliberately breed. The energy-intensive factory farming methods of the industrialised nations are responsible for the consumption of huge amounts of fossil fuels. Chemical fertilisers, used to grow the feed crops for cattle in feedlots and pigs and chickens kept indoors in sheds, produce nitrous oxide, another greenhouse gas. Then there is the loss of forests. Everywhere, forest dwellers, both human and non-human, are being pushed out. Since 1960, 25 per cent of the forests of Central America have been cleared for cattle. Once cleared, the poor soils will support grazing for a few years; then the graziers must move on. Scrub takes over the abandoned pasture, but the forest does not return. When the forests are cleared so that cattle can graze, billions of tons of carbon dioxide are released into the

atmosphere. Finally, the world's cattle are thought to produce about 20 per cent of the methane released into the atmosphere, and methane traps twenty-five times as much heat from the sun as carbon dioxide. Factory farm manure also produces methane because, unlike manured dropped naturally in the fields, it does not decompose in the presence of oxygen. All of this amounts to a compelling reason, additional to that developed in Chapter 3, for a largely plant-based diet.

The emphasis on frugality and a simple life does not mean that an environmental ethic frowns upon pleasure, but that the pleasures it values do not come from conspicuous consumption. They come, instead, from warm personal and sexual relationships, from being close to children and friends, from conversation, from sports and recreations that are in harmony with our environment instead of being harmful to it; from food that is not based on the exploitation of sentient creatures and does not cost the earth; from creative activity and work of all kinds; and (with due care so as not to ruin precisely what is valued) from appreciating the unspoiled places in the world in which we live.

11

ENDS AND MEANS

WE have examined a number of ethical issues. We have seen that many accepted practices are open to serious objections. What ought we to do about it? This, too, is an ethical issue. Here are four actual cases to consider.

Oskar Schindler was a German industrialist. During the war he ran a factory near Cracow, in Poland. At a time when Polish Jews were being sent to death camps, he assembled a labour force of Jewish inmates from concentration camps and the ghetto, considerably larger than his factory needed, and used several illegal strategems, including bribing members of the SS and other officials, to protect them. He spent his own money to buy food on the black market to supplement the inadequate official rations he obtained for his workers. By these methods he was able to save the lives of about 1,200 people.

In 1984 Dr Thomas Gennarelli directed a Head Injury Laboratory at the University of Pennsylvania, in Philadelphia. Members of an underground organisation called the Animal Liberation Front knew that Gennarelli inflicted head injuries on monkeys there and had been told that the monkeys underwent the experiments without being properly anaesthetised. They also knew that Gennarelli and his collaborators videotaped their experiments, to provide a record of what happened during and after the injuries they inflicted. They tried to obtain further information through official channels but were unsuccessful. In May 1984, they broke into the laboratory at