

CONSERVATION, DEVELOPMENT AND ENVIRONMENTALISM: HISTORICAL PERSPECTIVE AND FUTURE IMPERATIVES

P.G. Purcell

P. & R. Geological Consultants Pty. Ltd., 141 Hastings St., Scarborough, W.A. 6019

ABSTRACT

Throughout history the city and the wilderness have been both idea and environment for urban man. The conflict between them is expressed in the earliest mythology and manifest today in the conservation versus development debate. The conflict is misdirected: conservation and development are interdependent. They are the same process on different time scales: the sustenance and security of life on earth. Their reconciliation is proposed in the concept of sustainable development.

The widespread concern about the environment in the industrialised, developed societies today combines scientific and emotional components. The scientific component is a new and valuable appreciation of, and commitment to, the global ecology. The emotional component is more an anti-technology mood, an historically cyclic phenomenon of complex origins. Modern environmentalism is a complex amalgamation of those environmental concerns with wide ranging socio-economic and political reforms. Those reforms frequently involve the concept of no-growth or very limited economic growth, especially in Western industrial society, and derive from a pessimistic world view historically common among intellectuals. It is environmentalism, not conservatism, which is in conflict with the concept of development.

A successful petroleum industry is vital to Australia's future security and welfare. The main threat to the industry comes from environmentalism, and the confusing myriad of legislation and regulation it has sponsored. Of particular significance is the policy of excluding exploration from conservation areas, rather than adopting a multiple and sequential land use approach. The single-usage approach to land management is inefficient balancing of resources and, correspondingly, is poor conservation practice. Multiple land use is a fundamental tenet of the sustainable development and the National Conservation Strategy of Australia.

APEA, and business and industry generally, must improve communications with the public. The significance of primary resources in the daily life and national economy must be retaught. Industry must play a leading role in defining and implementing sustainable development, and in championing the concept. The concept will be attacked and manipulated by no-growth environmentalists, but they must not be allowed to prevail.

Sustainable development offers the present generations the chance to reconcile conservation and development. That reconciliation is an imperative for the future.

INTRODUCTION

There is a myth that city life and civilization make men unhappy; that we carry within us 'an inconsolable memory of something lost in the forest' (Eliot, 1940), and that we can only be free and complete when reconciled with the wilderness. It is also said that men lose their nobility in the city; while the natives in the north, untainted by materialism, live in balance and harmony with the land and nature.

These myths will seem quite familiar to most people in the petroleum industry. They are in the headlines daily, and they underwrite much of the opposition to petroleum exploration and development in Australia. In the context of these myths, such activity is seen as despoiling the landscape, interfering with Aboriginal sites and, more generally, being part of the Western industrial complex which alienates man from himself and nature!

A successful and expanding petroleum industry is vital to Australia's security and welfare. Production from known producing fields will decline during the 1990s from the current c. 550,000 BOPD to c. 140,000 BOPD (APEA, 1988). Recent discoveries on the North West Shelf will partly offset the decline in reserves, but more discoveries are needed – 150 MMbbl per annum if Australia is to be even 50% self-sufficient in the year 2000. The main threat to those discoveries comes from the progressive loss of the right and freedom to explore. 'Access to prospective areas, both onshore and offshore, is crucial to the survival of the Australian petroleum industry' (APEA, 1990).

Twenty-five years ago, 4% of onshore Australia was off-limits to petroleum explorers. Today exploration is restricted or prohibited by legislation, government policy or accepted practice in about 24% of the land area. Alienation of land currently under claim by Aboriginal groups, or proposed as Wilderness Areas, would place restrictions and prohibitions on about 46% of the Australian onshore area (Australian Mining Industry Council, 1988).

The same pattern applies offshore: the area of Australia's coastal waters excluded from exploration has increased almost 100-fold in the past twenty years – not 100%, 10,000%! In 1968 exploration offshore was restricted from 280 sq km; by 1978 it was 1060 sq km; today, it is over 27,000 sq km. There were 19 declared protected areas offshore Australia in 1969; there were 172 in 1988. These figures do not include the Great Barrier Reef Marine Park which covers about 340,000 sq km (Warren, 1989).

The 'confusing myriad of Acts and regulations' (APEA, 1990) which dictate these restrictions are the legislative response to political and public pressures primarily related to environmentalism and Aboriginal land rights. Those pressures are bred of the prevailing concepts about the value and future of industrial civilization in relation to the natural environment.

In fact, that myth about city life and the melancholy there, and man's longing for the wilderness, is over 4000 years old: it is the Epic of Gilgamesh, one of the oldest written myths. Gilgamesh was King of the Sumerian city of Uruk, and the epic recounts his struggle and reconciliation with the forces of nature and civilization. Similarly, those northern tribes are not Australian Aborigines in Kimberley or Kakadu, but the Germanic tribesmen who decimated the Roman legions in the Rhine Valley in the year 9 AD.

This historical connection is not meant to trivialize the present, but to emphasise its complexity. Much of the confusion about modern environmentalism results from a failure to recognize that complexity. Current feelings and fears about nature and society are not simply recent phenomena. They may be in modern guises, with modern components and causes appended, but there are ancient ideas and emotions involved. At the core is the age-old conflict between city and nature.

This paper reviews the origins of those ideas and emotions, and their influence over recent centuries. That historical discussion provides some insight into their modern expression, and gives context to the more detailed analysis of modern concepts of conservation, development and environmentalism, and their impact on the petroleum exploration and development industry.

The lessons of that history are there for the learning – and the learning is an imperative for the future.

BEGINNINGS

The Epic of Gilgamesh comes from the first cities ever built, about 3500 BC, and tells of the painful passage from forest dweller to urban man. It describes allegorically, through the adventures of Gilgamesh, the founding of the city, the domestication of the savage, and the acceptance of the authority of the king. It also tells, through Gilgamesh's melancholy, that the passage was not an easy one. The forest beyond the city walls had become the home of both man's fears and his longing. The dark woods hid plundering hordes that ever threatened to over-run him; but they held also the freedom of the wild – or, at least, his nostalgic memory of it.

Gilgamesh and his companion, the wild man Enkidu, go into the forest to gather timber for the city and to slay the source of evil and unhappiness that lives there. They clear the fields as far as the Euphrates River. Enkidu is killed later, and Gilgamesh himself goes back to the wilderness, and reverts to savagery. Enkidu was his alter ego – he was nature; Gilgamesh, society – and each was unfulfilled without the other. Gilgamesh journeyed to the underworld, was reconciled with his mortality, and went back to the city to die (Sinclair, 1977). So, the legend says, city man is incomplete when he has lost the wilderness; but it also

says that man's destiny is not to remain a savage in the forest.

The basic themes of the Epic of Gilgamesh – the confrontation between forest and city, between primitive and urban man, nature and society – have been recurring themes throughout history, appearing in different guises in different cultures and times, but always powerful forces, both in the psyche and on the battlefield (Campbell, 1973). The Epic of Gilgamesh offered an understanding of them as partners, but that has not been – is not – the prevailing view. In the Judaic-Christian tradition, for instance, the biblical emphasis is on the evils of the city and the purity of the wilderness: the slavery in Egyptian cities, the wilderness of Sinai, decadent Sodom. Christ's first days were a flight from the city and its dangers. As a man he went often into the wilderness, seeking purification there, and in the end, like Gilgamesh, he went into the city to die.

This has been the more popular imagery; it is forgotten that Christ also went to the city for knowledge and learning. Our culture was shaped in those early cities. It was Uruk and other Sumerian cities that gave man the written word – the quintessential mark of civilization – and the beginnings of mathematics and astronomy. The achievements in philosophy and science in the city-state of Athens still astonish us. Roman law and the Roman Church remain fundamental elements of our society.

These cities also had critics within the walls. Prominent among them were unhappy intellectuals who romanticized a nobler life in the harshness beyond the city gates. The Roman historian Tacitus gave the Western world one of its most popular and enduring myths, the Noble Savage. Tacitus saw nobility embodied in the warring hordes of the German forests. He described them as courageous, chaste and frugal, living in balance with the land and nature; and he contrasted them with the materialism and decadence of Roman society. It has remained a favourite theme of city intellectuals.

Those northern hordes later over-ran Rome. They proved disinterested in urbanity, and much of the accumulated wisdom that went with it, and the dark forests regrew across the European mind. During those Dark Ages, scientific knowledge was preserved and developed mainly in the Arabic courts and cities. Carried back to Europe by the Crusaders, that knowledge helped light the way out of the Dark Ages. Those Arab cities also had dissenting intellectuals; their noble savages were the fierce Bedouin of the desert.

This short comment is not to romanticize cities, then or now, but to recognize them as the symbol and setting for civilization, and give them their due in that regard. Most of the lights along the way in the darkness have been lit in cities; and they have been lit by reason and technology, by the deliberate choice of science over superstition, and reason over magic. The debate about the city and the wilderness, their relationship to each other, and their relative value, is as old as urban man. The dream today of a simple, purer life away from the confines and congestion of the city is an ancient dream. It is part of that 'inconsolable memory'. Yet to turn back to the forest, back from science to superstition, is a flight from reason. Across the centuries, it has been a recurring dream and a popular flight.

THE GREAT SEESAW

The Industrial Revolution, commencing in the 17th Century, caused a rapid growth in urbanization and industrialization. It greatly stimulated the interplay in the urban mind between the ideas of the city and the wilderness. Technology and its impact, rather than the city itself, became the symbolic antithesis of nature.

Over subsequent centuries, there have been distinct changes in the Western perception of nature and technology. Thomas (1983) concluded that the British sympathy for nature, building slowly from about 1500 AD, simply gained in intensity markedly after 1800 AD. Others have seen distinct fluctuations in these feelings or moods. Williams (1973) noted a distinct tilt towards nature at the end of the 16th, 18th and 19th centuries.

Blainey (1989) presented a detailed analysis of these changing perceptions: urban man's alternating preference for Western civilization and technology versus nature and wilderness has been dubbed, accurately if inelegantly, 'the great seesaw'. 'Love of nature sits at one end of the see-saw and love of technology at the other. Sometimes the one end is heavier, sometimes the other; betwixt the beam is balanced more or less, but ever rocking back and forth.'

The causes and effects of 'the seesaw' are complex. Intellectual, cultural, artistic, technological and economic factors all influence and are influenced by it. Sometimes one factor leads, sometimes another; each influences the other. But the prevailing tilt, one way or the other, has a profound effect on the attitudes of the day. For instance, a tilt towards nature is invariably accompanied by an increased respect for primitive peoples: they are seen as living closer to nature. A tilt against technology is invariably accompanied by fears of famine and diminishing resources: technology embodies mankind's skills as a problem solver, and when faith in those skills is lost, concern grows over future supplies and security.

Blainey has chosen to label the preference for nature or technology as, respectively, pessimism or optimism. i.e. they reflect man's view of himself and the future, and his role and influence in it.

OPTIMISTS

Man is intelligent

Industrial civilization is admirable

New technology is good

City life is noblest

Reason is the highest virtue

Modern man is the ideal

Nature must be harnessed

Science will provide

The golden age lies in the present and future

PESSIMISTS

Man is not as clever as he thinks

Industrial civilization is sick

New technology is bad

Primitive life is noblest

Instinct and emotion are the highest virtues

The noble savage is the ideal

Nature is bountiful if left alone

Nature will provide

The golden age lies in the past and maybe a far-away utopian future

Both views exist today, and constitute one of the main ideological conflicts in our society. History reveals that both views have always existed, and the conflict between them is one of the fundamental dynamics in Western civilization. Our view of it has been obscured in the first half of the 20th Century by the confrontation between communism and Western democracies.

'The seesaw' is currently tilted dramatically towards nature. The prevailing mood carries little optimism about the future, and the popular intellectual beliefs are decidedly pessimistic. Similar and opposing tilts have occurred over recent centuries, and many of today's ideas and issues were equally debated and denounced. Recurrence does not disprove validity, of course, but it does caution against over-reaction.

Today's tilt, with the attendant feelings and fears, is quite similar to the situation at the end of the 18th Century, when Romanticism was at its peak. Earlier in the century, the mood had been quite positive: the intellectual revolution of the Enlightenment had the new French word, Optimism, for a battle cry. Scholars had rejected the biblical and classical world-views and saw history as progressive evolution. Scientific knowledge was seen as the hope of the future – and hope in the future was a new and welcome idea. Prosperity, not poverty and starvation, was to be man's inheritance.

The Romanticists rejected this view. Man may have advanced by stages from the trees to the boulevards of Paris, they argued, but the last stage was less than the first. Primitive man in far away lands was 'idylized' as far happier, healthier and virtuous than urban European man. Chief spokesman of the romantic vision was Jean-Jacques Rousseau and the myth of the Noble Savage is often blamed on him. The Romanticists had much to recommend them: their belief in the worth of different cultures, for instance, and their appreciation of the arts. But they were true heirs of the young Gilgamesh, unhappy in the city and civilization.

Captain Cook, writing at the height of 18th Century Romanticism, and borrowing from descriptions of North American Indians, described Australian Aborigines as living in a 'tranquility... far more happier than we Europeans'. The contrast with Dampier's description 80 years earlier of 'the miserablest people on earth' reflects changing perceptions in the European vision, not conditions in Australia (Smith, 1984).

By the turn of the century, the poor working conditions and pollution in the expanding industrial cities had triggered a nostalgia about rural life. Europeans refocused their romantic vision on their own countryside and past. Relatives still working the fields and ancestors long buried now became the Noble Savage. The romantic tradition was strongest in Germany and persisted there longest (Stern, 1963). The Volk (peasants) were said to depend physically and spiritually on a man-land bond. Destroy the land, it was said, or separate the Volk from it, and the soul would die.

An essay on population growth and dwindling food supplies by English clergyman Thomas Malthus appeared at this time. It argued that food production was increasing arithmetically but population was expanding geometrically.

The end result was inevitable; sustained human progress was impossible. Malthus' argument was a major influence on public emotions for several decades, and is relatively popular again today.

Over the next 50 years the mood in the Western world changed dramatically, and 'the seesaw' fell noisily back the other way. The great success in exploration, science and commerce was taken as evidence of some innate superiority of the European peoples. Technological progress was equated with cultural and moral progress. The future was in technology and the industrial cities. Primitive society was no longer noble. When John Stuart planted the flag in central Australia in 1861 it was 'a sign to the natives of the dawn of liberty, civilization and christianity' (Blainey, 1989). Freedom was not with the wandering tribes anymore; it was a product of democracy!

Malthusian pessimism was discredited. Man's increasing needs did not beget disaster but invention and innovation. The steamship, the railway and the telegraph were seen as instruments of peace and progress, facilitating trade and bringing people closer together. International business was hailed as a 'civilizing wand'. We live under the blessed light of science, an 1865 history book proclaimed. Not until the 1950s was optimism to reign again so supreme.

This mood began to falter about 1870. Periods of such success and accomplishment seem eventually to breed disbelief they can continue. The facts don't change, but the perceptions do, and 'the seesaw' begins to tilt. The expanded industrialization and urbanization made the countryside remote, literally and metaphorically, and concerns about food supplies reappeared. The grain fields of the USA and Russia had fed Europe aplenty for half a century but those frontiers were receding fast; there was no more land. A few years earlier, people had delighted in the security of a 'small' world; now it raised concerns about dwindling resources.

This reaction against science and progress intensified in the 1890s, influenced considerably by new intellectual trends in psychology and anthropology, especially Freud. The intellectuals reassigned to urban man his old unhappy fate, and hailed anew the nobility of primitive societies. Australian Aborigines, specifically the Arunta of Central Australia, were said to have much of value to teach the unhappy Europeans. Nature-based youth movements such as the Boy Scouts sprang up, all seeking to renew self and society by contact with nature.

The conservation movement in the USA emerged during this period, and achieved prominence after President Roosevelt's 1901 election. From the beginning, two very different concepts were evident: preservation versus conservation. Roosevelt's program was conservationist, based on management of resources and multiple land use, and it carried the day – until the modern era when environmentalists successfully outflanked it with 'the wilderness concept'.

'The seesaw' seemed to rock gently back and forth in the early 20th Century, but the end of the Second World War saw a sharp tilt towards technology and progress. The 1950s brought a revolution in everything technological: computers, electronics, automation, medicine, agriculture,

communication, and more. Optimism was on an all-time high. Wages were rising and prices were stable. Materials were plentiful and cheap, and prosperity was available to all. Poor nations were redefined as simply under-developed. The mood had returned to the heady optimism of the 1850s and '60s – and that should have been a warning. 'The seesaw' was set to tilt sharply back.

In 1969 man landed on the moon. That was really the end of the era of technology. Even as man took that giant step, the warning bells were ringing up to crisis level. Amid the carillon that rang in the era of environmentalism, were the familiar bells of expanding population, dwindling supplies and diminishing resources.

CONSERVATION AND ENVIRONMENTALISM

The mood in Western society today is firmly pro-nature and almost as firmly anti-technology. 'The great seesaw' is well and truly tilted towards nature, and the social attitudes and values that characterize that tilt are widespread. Fears of population explosions and depleted resources are common. There is widespread discontent with urban society. Thoreau's adage, 'in wilderness is the preservation of the world', is quoted and misquoted: in preservation of the wilderness is the world. The 'native' is everywhere the noble savage again, deemed full of wisdom essential for urban man!

In many ways, the mood/belief complex is indistinguishable from that prevailing 200 years ago and again, though to a lesser extent, 100 years ago. Yet there are factors now that are unique: acid rain, atmospheric pollution, soil degradation, water pollution, and much more. The population of the earth has trebled since 1900. The world economy has expanded 20 times. The consumption of fossil fuels has increased 30-fold. Industrial production has increased 50 times this century; 40 times since 1950. Today's concerns about population growth and diminishing resources do seem better founded than in earlier times.

The feelings and fears prevailing today about nature and civilization would seem, therefore, to have both a rational and an irrational component. The rational component has a scientific basis in the recognition that human care of the environment has been inadequate in the past, and that better care and protection are essential in the future. That much is simple enough, and is to be applauded and encouraged. The irrational component – the tilt on 'the seesaw' – is influenced by those scientific concerns, but is more a reaction to recent social, economic and intellectual trends.

The main complexity and force in the contemporary situation comes, however, from the merging of the scientific issues into 'an extremely confused alliance with a whole series of political motivations and interests, partly manifest, partly concealed' (Enzemberger, in Arnold, 1982). It is this superposition of socio-political reform on the scientific discipline of ecology that converts Conservation to Environmentalism.

This complexity is confusing to many observers in business and industry. On a given issue, environmentalism

may seem to be both a vehicle for middle/upper class elitism and a repository for left-wing activism. Underneath all that may be a real and worthwhile environmental issue – to which industry could and should respond. Developing the proper response to environmental issues, both short term and long term, requires some understanding of the main components of modern environmental movement, both Conservation and Environmentalism, and their different aspirations and agenda.

Public Concerns

The public's growing concerns about the environment, both the scientific and the emotional, has involved a great many issues and influences over recent decades. It had its beginnings in the 1950s with concern about atmospheric pollution, particularly smog and nuclear fall-out. It was stimulated by a variety of books, beginning with Rachel Carson's (1962) *Silent Spring* and by colour television: nature's beauty and man's pollutants were brought into sharp focus in everyone's living room. Media coverage of spectacular environmental accidents, such as the 1968 Santa Barbara oilwell blow-out, made local events into national, even international, disasters.

Not all the information was scientifically accurate, and some of it was deliberately inaccurate. That they raised public awareness is now offered as justification for those errors and exaggerations but it falsely alarmed the community. People could see problems in their own community, and accepted this uncritically as microcosm of the global dilemma. Industrial waste in local lakes and rivers became symbolic of 'dying oceans'. Crowded cities at home reflected expanding populations abroad. A pessimistic 'doomsday' mentality developed.

In 1972 the Club of Rome's *Limits to Growth* predicted global collapse within a century. In essence, this was the same old Malthusian scenario, but it was now 'proved' by detailed computer analyses of 'world system' models. The public reaction was hardly surprising. The technology that put man on the moon now foretold the end of the world. That wasn't true of course – but the issue is one of perception, not of fact. Scientists protested, but other scientists contradicted them, and public confusion and alarm increased. Governments responded internationally to the growing concerns and pressures with the 1972 UN Conference on the Human Environment.

The Greenhouse Effect emerged in the late 1970s and became the fundamental and unifying environmental issue. Computer models are an integral part of this concept, and the case is argued by eminent scientists and accepted by world leaders. The ozone 'hole' is another issue which has served to internationalize the public perspective and motivate a co-ordinated international response.

There were many other local and general influences: the expanding cities and the counter-culture of the Vietnam era, for example. All combined to alter the public perception of industry and the environment during those decades. They created a valid and useful public concern, but they also created a pessimism about, and hostility towards, Western society and civilization. The public became

increasingly nervous about the present and future value of technology. It was not simply a loss of faith in human technology and the security of the future; it was a feeling that technology was to blame. The community became increasingly receptive to critical sounds emerging from various intellectual camps, and from within the society itself.

Social Dynamics

In many ways it is the anti-industry bias, rather than pro-nature sentiments, that poses the main difficulty for any reconciliation of development and conservation. It is ironic that a major cause of the bias is the affluence and security that industry has provided for our society over recent decades.

In 1950 most Australians were anxious for security and material well-being, and were staunch advocates of industry and technology. In 1990, a large number are relatively affluent, and their opinion of industry – and many other things – is quite different. Technology itself was 'the motor of change' (Inglehart, 1977). It brought the economic growth that provided the affluence; it improved the production methods, and triggered the changes in occupational structure; it provided the funding and motivation for expanded education; and it created the hardware for the mass communications industry.

Since the end of World War Two, improved production methods have progressively moved people out of the primary and secondary industry sectors. Many moved into the developing 'information industry' and the expanding civil service. Over two-thirds of the population now work in the service sector, including Government, and have little contact with primary production. They live mainly 'in urban and suburban centres comfortably buffered from and unaware of the needs and travails of the hurly-burly resource industries' that ultimately support them (Arnold, 1982).

Television speaks daily to this audience. News reportage is preoccupied with the minority positions and protests, and the entertainment industry seems incapable of recognizing the value of industry and business. An analysis of the top 200 USA television shows found that two-thirds of the business men were portrayed as evil, and over half the business activities were illegal (Samuels, 1981). The same bias is quite marked on many Australia television shows (Karadzic, 1989).

Compounding this is the psychological impact of the affluence. As physiological needs – food, shelter, security – are satisfied, people's focus shifts to 'higher' needs – the emotional, the intellectual, the aesthetic. This is common wisdom at the personal level, but it also constitutes a powerful social force (Maslow, 1970): with increasing affluence, many people develop 'a certain disdain' for the more basic needs and issues, and the people pursuing them.

These factors have combined to create a mentality that is naturally prejudiced against industry and development. In 1970, 70% of the American people believed that companies 'struck a fair balance between profit and public interest'; by 1980, the figure was reduced to 19%. Half the population

had changed its mind! It is fair to suggest that a similar percentage-change has occurred in Australia.

These social dynamics had their most profound effect at the middle to upper middle-class level. Generally well-educated and professionally employed, these people proved receptive to prevailing intellectual trends and arguments, and emerged as the new leaders of the environmental movement.

Intellectual Trends

Contemporaneous with the growing public concern and the social dynamics, were a variety of intellectual trends, all critical in one way or another of Western society. In many ways, these trends were simply the latest version of age-old discontents and fears, be they anti-civilization generally, or Malthusian concerns about population outgrowing food supplies. The similarities to Rousseau's Romanticist doctrines are unmistakable. Not surprisingly, they proved very popular with the newly emergent and burgeoning intellectual class, and did much to shape the new ideology of environmentalism. The worldwide distribution and publicity given to these views ensured a substantial audience, and greatly increased their influence. The counter-culture spawned of the Vietnam War was a major stimulus to many of these ideas.

These various ideas ranged from the general (anti-Western civilization) to the more focussed (dehumanising machine, for example), and commonly incorporated an anti-capitalist bias. In Australia, Manning Clark gave regular expression to the anti-civilization school, invariably as apocalyptic yearnings for a new world. In the context of the emerging environmentalism, the most influential trends were the opposition to industrial expansion and population growth. These became increasingly prominent and loudly proclaimed through the 1960s. Industrial growth was consuming the earth's resources and polluting the earth and atmosphere with waste products; the exploding 'population bomb' was just as destructive. Both concerns were valid enough at the base – and remain so – but they were wrongly generalized into an attack on Western technology, and on man himself. The former was an error of judgement: technology wasn't inherently bad, it just needed improving. The anti-humanity concept was arguably the most disturbing trend, finding extreme expression in the advocacy of totalitarian measures to restrict population growth.

By the mid-1960s these disparate intellectual trends and social dynamics saw the emergence of a new breed of environmentalist. In the USA, the arrival was signalled by the 'take-over' of the traditionally aristocratic conservation groups such as the Sierra Club, and the successful lobbying for the Wilderness Act 1964. In Australia the change came a little later. Beginning in the 1960s, the transformation was symbolically completed by the 1973 realignment of the Australian Conservation Foundation from research and education to activism. The conservation movement 'was transformed from a genteel collection of armchair dwellers and bushwalkers to a huge movement of often militant crusaders' (Time, 1988); the movement had become environmentalism, and the agenda went far beyond trees.

Fundamental to these changes was the pursuit of 'preservation' rather than 'conservation', and the move towards an anti-human perspective. The conservationist concern was for man himself: he was messing HIS environment. With environmentalism, the emphasis shifted: man – especially Western capitalist, industrialized man – was messing THE environment, and using resources to which he had no title. Humanity has no more ethical standing than any other part of nature or the universe, according to former Australian Conservation Foundation Chairman, Bruce Davis. (Time, 1988). The implications of that concept are obvious and ominous. The anti-human perspective remains a strong force and fundamental flaw in environmentalism in Australia and elsewhere.

By the end of the 1960s, industrial and population growth were seen by environmentalists as the root cause of evil in the ecosystem. Both were definitely cause for concern, and remain so, but the intellectual's inherent pessimism led to destructive rather than constructive notions. Technology, which could help solve the problems, was adjudged the cause of the problems. Dismantling it rather than developing it was the intellectual's misguided approach. In mythic terms, Western technology, industrial development and population growth had become the giants which must be slain to make men free and happy in the city. They even had an Achilles' heel: energy supplies.

ENERGY AND THE NEW IDEOLOGY

The petroleum industry has been on the front lines of the environmentalists' campaign since the early days. Commoner's (1972) influential book, *The Closing Circle*, attributed the environmental crisis primarily to the post-war development of the petroleum and chemical industries. Petroleum was not only fuelling the despised Western industrial growth, it was feedstock for the plastic and insecticide industries. The subsequent linking of fossil fuels with the Greenhouse Effect has ensured pride of place for petroleum in the environmental hall of infamy. Other energy sources have fared no better.

It was 'the central question of energy' that provided the beginnings of common cause and unity of purpose within the environmental movement, and with other activist groups. Whether the specific concern was expanding population, Western Capitalism, industrial pollution or whatever, radical or conservative in bent, the common enemy turned out to be energy supplies – especially cheap energy supplies. Lovins (1977), in *Soft Energy Paths*: 'It would be little short of disastrous for us to discover a source of clean, cheap abundant energy because of what we might do with it'. Or Paul Ehrlich (1968), leading spokesman for the zero population growth movement: 'giving society cheap abundant energy at this point would be the equivalent of giving an idiot child a machine gun'.

Activists with very different economic, social and political aspirations found their first common cause in limiting energy supplies. Industrial growth, capitalism, third-world exploitation, population, pollution . . . all could be halted or slowed by restricting access to energy supplies.

The recognition of the main common cause was 'more

profound... the gradual realization of all the various groups within the movement... that ecology implies the indivisibility of total systems: that matters of energy, agriculture, health, transport, land use and so forth were not susceptible of different solution or even reform but implied structural attack on the political and economic system itself' (Cockburn & Ridgeway, in Arnold, 1982). This was the lesson learnt in the 1970s: though they marched to different drums, they marched towards the same dawn.

The argument may be about trees or trout, but the battle is about development and growth, about stopping them. The enemy is not the miner or the logger *per se*; they are only enemy agents. The real enemy is the entire complex of our culture, especially its Western ethos and its basis in capitalistic individualism.

Former US Secretary of the Interior Jim Watts was correct: 'the battleground is not... protecting the environment. It is over ideology, over forms of government that lead to a centralized socialized society' (Arnold, 1982).

The environmentalists themselves have made this perfectly clear. Former ACF Chairman Bruce Davis describes environmentalism as 'a quiet revolution in gradually challenging most of the fundamental tenets of Western industrial capitalism'. Peter Hay, Political Analyst, University of Tasmania calls environmentalism 'a fully fledged system of thought capable of providing ideological guidance to the whole range of issues; a competitor in the struggle for the hearts and minds with the great isms – socialism, liberalism and conservatism' (*Time*, 1988).

This new ideology defines wide-ranging socio-economic and political objectives, and it has obvious religious overtones. This is not to say that environmentalism is a religious movement; only that it functions very much like a religion for many people, defining their place in creation. Indeed, it has many of the trappings of a religion: sacred texts, revered dogma, the process of conversion, the promise of salvation, and so on. The concept of a progressive universe of divine order, so comfortable in the 1950s, had slid away in the 1960s, prodded fore and aft by the counter-revolution, and was now replaced by this nature-mysticism.

Analysis of environmentalists' statements and writings identifies a number of basic beliefs (Barbour, 1973):

- 1 Man is inseparable from nature and dependent on the environment. Western religion and culture have been based on man's dominion over nature and lead inevitably to its destruction.
- 2 The earth's resources have finite limits, and will be exhausted if growth in population and living standards continue unabated. Changes in values and social institutions are essential.
- 3 Industrial development progressively destroys the earth's ecology and must be changed by political and legislative means.
- 4 Uncontrolled technology is the main threat to the earth. The consumption of natural resources and the creation of waste products must be minimized. Individual liberties may need to be sacrificed to social demands.
- 5 Poverty and pollution are linked products of our

economic system. Changes in political power are necessary to make technology an equitable instrument for human welfare.

The agenda dictated by this ideology obviously involves protection of the natural environment; but it also includes major social, economic and political reform – and it sees them as inseparable. This intertwining of socio-political activism and the conservation ethic is the main impediment to a rational and necessary reconciliation of conservation and development.

SOCIAL UTOPIANS AND THE BUREAUCRACY

Conservation, historically an aristocratic tradition, has emerged into a relatively popular concept. A concern about balancing development and conservation, rarely held by more than a small minority, now has widespread public support. That groundswell concern is about conservation, not environmentalism and its attendant ideology and agenda. That distinction is not clear to most, however, either in private support for organizations, or in the Australian political process. It is a confusion that works to the benefit of environmentalism.

Control of, and support for, the environmental agenda in Australia comes from a 'highly specific segment of the population...' (Hay in *Time*, 1988): upper middle-class, well-educated, relatively affluent people, working mainly in the public sector and service industries. Most are committed faithful to the new ideology.

Bred of the affluence, education and social dynamics of the post-war decades, this group developed during the 1970s into a powerful social force in Western societies. They were active in many areas including the environment. In the USA, looking at their power in the Carter administration, Kristol (1978) called them 'the new class' and argued that they are 'acting on a hidden agenda: to propel the nation from that modified form of capitalism we call the welfare state towards an economic system so stringently regulated in detail as to fulfil many of the traditional anti-capitalist aspirations of the Left'.

They constitute a 'new class' only by virtue of their growing numbers and influence. They are, simply, the modern intellectuals and, like so many intellectuals before them, they are unhappy with the society they live in, and they seek to change it. Schumpeter (1939) defined them as the people who wield the power of the spoken and written word, and saw in them the demise of capitalism: alienated 'Intellectuals', he predicted, not exploited workers, would cause the revolution!

Again like so many intellectuals before them, they seek control and change through the bureaucracy. In the USA, the legal system has made the courts a useful avenue for activism, and there are signs of that beginning in Australia (e.g., the Greenpeace action against Caltex's Kurnell refinery), but the bureaucracy remains the main approach. This has usually been the intellectuals' way: lacking a sword, they seek power with the pen.

A properly functioning bureaucracy is essential to a

democratic society. However, intellectuals see bureaucracy less as a means of administration than as a vehicle to power and reform. They believe that society can be regulated and legislated to perfection, and they create extensive and invasive bureaucracies to that end. In the environmental context, for example, Rucklehaus (1989) points to polls showing public concern for the environment as evidence of 'proper values', and argues the need for new institutions and laws to properly motivate and regulate behaviour compatible with those values.

Meztger (1979) coined the term, 'co-ercive utopians' for these people. They are 'utopians' by virtue of their belief in, and pursuit of, a perfect world and man. They believe that the evils that exist are largely the product of our socio-economic system and, like Gilgamesh, they seek to make men free and happy by slaying the source of evil. They become 'co-ercive' when their approach is outside the democratic process; when it is through the back door, not the ballot box (Isaac & Isaac, 1983).

Environmentalists, more than most, seem to be drawn to bureaucracy. If ecology means that 'everything relates to everything', then everything must be evaluated for its environmental impact, and environmental regulation must apply to any and every activity. This philosophic rationale has an obvious practical benefit: the more regulations that apply, the greater the restraint on development, and the greater control for the environmentalists.

Overlap and exchange of personnel between the government agencies and the environmental organizations ensures common purpose. Yesterday's protest leader is tomorrow's Ministerial adviser. Government funding is available via administrative grants or for commissioned survey or research work. In Australia, the government funding has not approached the levels in the USA, but substantial money is involved. For example, the ACF has received over \$1,000,000 in grants from the Federal government since 1983 (*News Weekly*, 1990).

Environmentalists sharply reject any charges of hidden agenda, and deny any gap in information or aspiration between the 'leaders' and their supporters. The truth may depend on the definition of 'supporters'. Environmentalists certainly speak and write relatively openly of their philosophy and aims in newsletters, press interviews (e.g. *Time*, 1988) and major publications such as the Rockefeller Institute's *Unfinished Agenda* (Barney, 1977). The question is whether or not the general public hears and reads those statements.

The vast majority of people in Australia are very concerned about the environment, and accept the need for changes to social and industrial practices to better protect it. Worldwide polls show good public support for, e.g., increased taxes or higher costs to cover environmental programmes (*Geotimes*, 1989). It is debatable, however, whether the general public perception of those changes, and their likely impact on the style and quality of life currently enjoyed, fits with the environmentalist's preferences.

The vast majority of Australians want economic growth, individually and nationally. Development of the national potential and conservation of the nation's resources are

both seen as essential. The concept of 'sustainable growth' is directed towards these interlocking needs. Whether or not it proves acceptable to environmentalists will ultimately show whether their main aspirations lie with the protection of the environment or the restructuring of society.

SUSTAINABLE DEVELOPMENT: RECONCILING CONSERVATION AND DEVELOPMENT

Few environmentalists today argue openly for a NO-growth policy. The objective now is 'sustainable growth'. Defining and pursuing that objective will be a major issue of the 1990s.

The concept of sustainable development was cast on the world stage by the UN-sponsored World Commission on Environment and Development (WCED), commonly known as the Brundtland Commission. The report, 'Our Common Future', defined sustainable development as 'development which meets the needs of the present without compromising the needs of the future generations to meet their own needs' (World Commission on Environment and Development, 1987).

Sustainable development involves a new application of economics to environmental evaluation and management. Each generation is to be required to pass onto the next 'a stock of assets no less than the stock it has inherited' (Pearce, 1989). Those assets will include man-made capital and environmental capital – the stock of oil and gas, minerals, etc., but also 'the ozone layer, the protective function of forests and wetlands, the waste-assimilating functions of rivers and oceans, and the store of biological diversity'.

Maintaining the capital stock will ultimately involve some trade-off between environmental and other capital. This will require evaluation of the environment, wherever possible, in dollar terms. It will also require that environmental programs or restraints be assessed in economic terms against any overlapping development project. This balanced approach, and very clear statements about the need for industry and development, have earned loud applause for the Brundtland Commission and the concept of sustainable development from industry and business groups. There has been near universal acceptance at the political level: the United Nations, the European Community, the OECD and most national governments, for example.

The concept of sustainable development is inherent in the National Conservation Strategy for Australia (Department of Home Affairs and Environment, 1983), a local rewriting of the UN-sponsored World Conservation Strategy. The National Conservation Strategy for Australia (NCSA) has a rational and realistic view of the necessary balance between conservation and development, and APEA (1990) has publicly endorsed it.

The NCSA declares, by way of its opening remarks, that 'development and conservation are equally necessary for our survival and for the discharge of our responsibilities as trustees of the national estate'. Indeed, it offers the insight that 'development and conservation are but different

democratic society. However, intellectuals see bureaucracy less as a means of administration than as a vehicle to power and reform. They believe that society can be regulated and legislated to perfection, and they create extensive and invasive bureaucracies to that end. In the environmental context, for example, Rucklehaus (1989) points to polls showing public concern for the environment as evidence of 'proper values', and argues the need for new institutions and laws to properly motivate and regulate behaviour compatible with those values.

Meztger (1979) coined the term, 'co-ercive utopians' for these people. They are 'utopians' by virtue of their belief in, and pursuit of, a perfect world and man. They believe that the evils that exist are largely the product of our socio-economic system and, like Gilgamesh, they seek to make men free and happy by slaying the source of evil. They become 'co-ercive' when their approach is outside the democratic process; when it is through the back door, not the ballot box (Isaac & Isaac, 1983).

Environmentalists, more than most, seem to be drawn to bureaucracy. If ecology means that 'everything relates to everything', then everything must be evaluated for its environmental impact, and environmental regulation must apply to any and every activity. This philosophic rationale has an obvious practical benefit: the more regulations that apply, the greater the restraint on development, and the greater control for the environmentalists.

Overlap and exchange of personnel between the government agencies and the environmental organizations ensures common purpose. Yesterday's protest leader is tomorrow's Ministerial adviser. Government funding is available via administrative grants or for commissioned survey or research work. In Australia, the government funding has not approached the levels in the USA, but substantial money is involved. For example, the ACF has received over \$1,000,000 in grants from the Federal government since 1983 (*News Weekly*, 1990).

Environmentalists sharply reject any charges of hidden agenda, and deny any gap in information or aspiration between the 'leaders' and their supporters. The truth may depend on the definition of 'supporters'. Environmentalists certainly speak and write relatively openly of their philosophy and aims in newsletters, press interviews (e.g. *Time*, 1988) and major publications such as the Rockefeller Institute's *Unfinished Agenda* (Barney, 1977). The question is whether or not the general public hears and reads those statements.

The vast majority of people in Australia are very concerned about the environment, and accept the need for changes to social and industrial practices to better protect it. Worldwide polls show good public support for, e.g., increased taxes or higher costs to cover environmental programmes (*Geotimes*, 1989). It is debatable, however, whether the general public perception of those changes, and their likely impact on the style and quality of life currently enjoyed, fits with the environmentalist's preferences.

The vast majority of Australians want economic growth, individually and nationally. Development of the national potential and conservation of the nation's resources are

both seen as essential. The concept of 'sustainable growth' is directed towards these interlocking needs. Whether or not it proves acceptable to environmentalists will ultimately show whether their main aspirations lie with the protection of the environment or the restructuring of society.

SUSTAINABLE DEVELOPMENT: RECONCILING CONSERVATION AND DEVELOPMENT

Few environmentalists today argue openly for a NO-growth policy. The objective now is 'sustainable growth'. Defining and pursuing that objective will be a major issue of the 1990s.

The concept of sustainable development was cast on the world stage by the UN-sponsored World Commission on Environment and Development (WCED), commonly known as the Brundtland Commission. The report, 'Our Common Future', defined sustainable development as 'development which meets the needs of the present without compromising the needs of the future generations to meet their own needs' (World Commission on Environment and Development, 1987).

Sustainable development involves a new application of economics to environmental evaluation and management. Each generation is to be required to pass onto the next 'a stock of assets no less than the stock it has inherited' (Pearce, 1989). Those assets will include man-made capital and environmental capital – the stock of oil and gas, minerals, etc., but also 'the ozone layer, the protective function of forests and wetlands, the waste-assimilating functions of rivers and oceans, and the store of biological diversity'.

Maintaining the capital stock will ultimately involve some trade-off between environmental and other capital. This will require evaluation of the environment, wherever possible, in dollar terms. It will also require that environmental programs or restraints be assessed in economic terms against any overlapping development project. This balanced approach, and very clear statements about the need for industry and development, have earned loud applause for the Brundtland Commission and the concept of sustainable development from industry and business groups. There has been near universal acceptance at the political level: the United Nations, the European Community, the OECD and most national governments, for example.

The concept of sustainable development is inherent in the National Conservation Strategy for Australia (Department of Home Affairs and Environment, 1983), a local rewriting of the UN-sponsored World Conservation Strategy. The National Conservation Strategy for Australia (NCSA) has a rational and realistic view of the necessary balance between conservation and development, and APEA (1990) has publicly endorsed it.

The NCSA declares, by way of its opening remarks, that 'development and conservation are equally necessary for our survival and for the discharge of our responsibilities as trustees of the national estate'. Indeed, it offers the insight that 'development and conservation are but different

expression of the one process': that process is the human endeavour to sustain and improve life on earth. Development is the use and management of the biosphere to provide for the present; conservation is the use and management of the biosphere to provide for the future. It is the same process on different time scales.

These concepts are positive in tone. The Brundtland Commission deliberately rejected pessimism. 'Our Common Future is not a prediction of ever increasing environmental decay, poverty and hardship in an ever more populated world among ever decreasing resources. We see instead the possibility of a new era of economic growth . . .'.

These pronouncements might be seen as the beginnings of a return to optimism, of faith in human capacity to manage the future. Perhaps 'the great seesaw' is beginning to tilt back from the overbalance of recent decades. It is too early to tell and there are still powerful forces at the far end.

The need for caution remains. Sustainable development may mean a balanced integration of conservation and development, but to some of its architects and many of its enthusiasts it is also the imperative for a new international order. Jim Macneil (1989), Secretary General of the WCED, sees a restructuring of modern civilization as inherent to the concept; social, economic and political values and institutions will need to change. William Rucklehaus (1989), also a member of the WCED, and formerly Administrator of the USA Environmental Protection Authority, looks towards changes comparable to 'only two other changes: the late Neolithic agricultural revolution and the Industrial Revolution of the past two centuries'. The main impediments to instituting these changes are 'the free-market economic system... and democracy' (Rucklehaus, 1989)!

The scale and power of the international bureaucracy foreseen by some as part of this new global order is alarming. Special taxes are to apply on energy, resources, fossil fuels, etc. Direct government ownership of resources is advocated. National environmental agencies are to be expanded and given more power. All government policies and programs will be subject to the environmentalist's overview. New international institutions will be created. They could, for example, levy a 'climate-protection' tax on fossil-fuel consumption in industrialized countries, and redistribute the money to developing countries. Ultimate wisdom on environmental matters would emanate from a 'global institution' that involves various 'non-government and quasi-government organizations . . . pulled together into a co-operative network' (Macneil, 1989; Rucklehaus, 1989)!

Regardless of the various utopian dreams and schemes, sustainable development is the way of the future. It is not going to simplify 'the environmental debate' in the short term, and it may make things worse. Bringing it to reality will require considerable debate and adjustment, and Industry must play a leading role. That is one of the clearest lessons of history. There is an urgent need for a more informed public, and greater awareness of the costs and benefits of development, as well as conservation.

Ensuring and cultivating that awareness is the challenge before business and industry.

LESSONS OF HISTORY

1 The current debate about the relative values of the natural environment versus technological civilization is not simply a recent phenomenon. It is the theme of the oldest written myth, and has been an ongoing debate throughout history, especially since the Industrial Revolution. These ancient roots and historical precedents are not cause to trivialize the present feelings and fears. They are a warning of the complexity of the debate: modern problems and perceptions are interwoven with some very old ideas and emotions.

Those historical precedents are also a caution against over-reaction. Widespread belief does not necessarily constitute evidence of validity, whether the issue be the orbits of the planets or Ozone depletion by man-made chlorofluorocarbons. These beliefs quickly become dogma, and persist regardless of the scientific or historical evidence to the contrary. Twenty years ago, scientists were concerned that cooling earth temperatures showed the approach of a mini ice-age. That doesn't disprove current concerns about rising temperatures, but it is a warning to scientifically consider the data.

2 The public concern about the environment combines scientific and emotional components. Industry needs to be aware of and to address both aspects.

The scientific component is a newly focussed awareness and appreciation of the ecology of the planet, man's inter-relationship with it, and the need for greater care in future social and industrial initiatives. The emotional component is more a pro-nature/anti-technology mood, and appears to be a cyclical phenomenon.

3 These cycles are a response to social, political, economic artistic and intellectual forces and trends in society, but also include less-definable psychological components: the tendency towards nature-worship at the end of four of the past five centuries, for instance. The current cycle draws its intensity from the conjunction of several cycles: a general swing towards nature is occurring co-incident with the historical unease at the end of a century. Superimposed on these, one must presume, is the millennial factor: for centuries, Western man believed the world would end in the year 2000 AD.

This conjunction might make the current cycle a relatively long event. Having begun in the 1950s and built in intensity to the present, it would be expected to continue well into the next century, unless other influences come into play. The most effective influence would be Industry and individual efforts to champion the potential of science and technology, and a return to optimism.

4 Within urban society, intellectuals have historically been among the more dissatisfied groups; a pessimistic view of civilization and the future, and a romanticized view of nature and primitive society are characteristic. Their sense of alienation finds common expression in utopian dreamings, and practical outlet in efforts to restructure the prevailing social, economic and political systems. The

intellectuals' leadership of the current environmental debate belongs to this tradition: they have superimposed a socio-political reformist movement on the conservation ethic, the new product being environmentalism. Their pessimistic world-view has sponsored a destructive approach to the problems. They want to de-develop, as Suzuki (1990) puts it, and return to an animistic bond with nature. It is a backward step. A more positive approach is embodied in the Gaia concept (Lovelock, 1987) where that bonding has been combined with an appreciation of technology. However, that imaginative concept of the earth as total organism has not proved popular with environmentalists. Their negative vision is a deliberate regression (Harbison, 1980), a return to the forest, and it is now, as it has always been, a wrongful turning.

It is also poor conservation. The greatest ecological damage is not the product of advanced technology, but of primitive technology, such as in subsistence farming regions of Africa and elsewhere (Lovelock, 1987). Nor has the intellectual's preference to specifically blame Western capitalist technology proven particularly accurate in view of the appalling pollution problems now being revealed in Eastern Europe.

5 The socio-political programs of the environmentalists must not be the basis for simplistic knee-jerk political labelling. Left-wing/right-wing labels do not apply necessarily, and their use confuses rather than clarifies. Blainey's (1989) classification in terms of Optimists and Pessimists is a simpler and more accurate description of the two very different perspectives on man, his technology, and the value of the future. Nor should the socio-political program distract attention from the environmental issues which demand our attention, both as individuals and as Industry.

6 Information is the main influence on public opinion and mood. A key factor in the prevailing anti-industry perspective is the one-sided argument the public has heard for decades. Environmentalists speak on prime-time television; industry responds by internal memo or discrete political lobbying.

Industry must communicate more openly and more effectively with the public, presenting the facts and answering all false claims. Otherwise, a poorly informed, even misinformed public will hold very counter-productive views. For example, a recent poll showed that 90% of Australians considered future oil sufficiency to be 'vitally important' but only 15% believed that any problem with self-sufficiency existed. Hence, oil supply was ranked LAST of the 16 issues listed as problems for the nation. That is not only against industry's interests, it is clearly against the public interest.

7 Education is the imperative.

Industry must ensure it is fully educated and properly informed, beginning at the boardroom and continuing through to employees and shareholders. National and international liaison with industry, environmental and political groups is essential.

The public must be re-educated about their dependent

relationship with the primary producing and energy resource industries. For decades, environmentalists have misrepresented their case as 'the people' versus 'big business'. This has depersonalized business and obscured the obvious relationship between the public as consumer and the companies as producers. The WA Government's (1987) booklet, *Mining and the Environment: Balancing the Scales*, is a good example. The cover illustration shows a drilling rig being weighed against a tree. The 'real' balance is between people using trees and people using minerals, or enjoying the fruits of national income derived from them.

The education must include the next generation. Education and influence through the schools is a main priority with many environmentalists. Having 16% of their members schoolteachers gives the Australian Conservation Foundation 'an enormous influence at that point of first contact with kids growing up', according to Director, P. Toyne (*Time*, 1988). Their efforts were subsidized by the Federal Government to the tune of \$48,000 in 1988-9 for mailing to schools (*News Weekly*, 1990)! Industry and individuals must present the case for technology and development – not in opposition to the environment, but integrated with it.

Children must learn that a balance between development and conservation is not only possible but imperative. At present, a rather pessimistic world-view is being passed on to the next generation. Industry must argue against that pessimism; otherwise it will prevail.

8 The concept of 'sustainable development' seeks to restore that balance and re-establish optimism about the future. Translating that concept into practice is the challenge of the next decade and the future beyond. The development of an Environmental Ethic by industry is a precondition for its evolution from concept to useful reality (Kensey, 1990).

Industry cannot wait for a fully articulated vision or strategic plan to emerge from national or international discussions. It must take an active role in defining and implementing this concept. Industry must develop Codes of Practice relating to land use, pollution and environmental management, and self-regulate to meet those standards. Companies must integrate the concept of environment management with economic growth in their own organizations, and articulate their efforts and success for the public.

Industry has a special responsibility to develop and implement the new and improved technology that sustainable development requires. This will include greater energy-efficiency and waste-minimization, as well as reducing environmental impact of all operations.

9 The concept of sustainable development is not the end of the conflict; it may trigger an escalation of it.

Many of the principles of sustainable development have been introduced before, and are soundly rejected by many environmentalists. Multiple and sequential land use, and the principle of sustainability were key elements of the 'gospel of efficiency' designed by President Roosevelt's chief conservationist, Gifford Pinchot, early this century. He advocated 'rational planning to promote efficient development and use of all natural resources'. Recreation,

logging, mining and scenic preservation were not necessarily incompatible, and where they were, the 'highest use' prevailed (e.g., the preservation of trees in watershed areas). This policy prevailed over advocates of 'preservation' until the 'carefully evolved concept' of Wilderness was introduced by environmentalists in the 1960s (Tucker, 1982).

There will be direct opposition to sustainable development, and industry's efforts towards that end. However, the main threat will probably come from environmentalists who support the concept openly, but work towards their preferred interpretation of it. 'Ecologically sustainable development' means little or no development to those who consider further development to be ecologically unsustainable.

10 The current trend in Australia to increased regulation and legislation can be expected to continue, and probably worsen. There is an accelerating shift towards greater Federal authority over the environment. The States retain control of the onshore land areas but that may come under increasing challenge. The land and its resources, like the air and oceans, can be defined as part of the 'commons', and therefore subject to Federal authority.

USA precedents point towards increasing penalties for the infringement of environmental regulations, directed at both the corporation and the managers personally. Fines and jail terms may be involved.

11 USA precedents also point to increased use of the courts by environmental groups. The 1990 action by Greenpeace against Caltex in the New South Wales Court, and the 1989 Federal Court ruling that the ACF has a special interest in NSW forests, are both first steps in this direction. The USA environmentalists have also made more extensive use of 'species-protection' arguments, and there are now signs of that developing in Australia. The scientific basis for many claims are suspect, to say the least, but they can prove major impediments to development projects. It has been possible to hire biologists in the USA who would 'guarantee' identification of a new species in a given area (Tucker, 1982).

On a more positive note, American corporations have seen the need to respond to this new situation, and the Environmental Manager is moving into the boardroom. That is a lead Australia should follow.

12 The current anti-development mood will pass in time. The speed of that passing, extraordinary influences excluded, will depend mainly on the clarity of the argument in favour of the concept of sustainable development. In the current world, the recognition of an inter-relationship between conservation and development is the first step towards a renewed faith in human technology, and its capacity to sustain the future. The arguments towards that end will need to come from business and industry, as well as individuals.

13 The main lesson of the historical continuity back to Gilgamesh is more challenge than admonition: the forces of

nature and civilization may have been in conflict in the urban mind for millenia, but their proper reconciliation remains an imperative for sustaining life on earth.

APEA'S PLANS AND PROGRAMS

Responsible environmental management has been a priority issue with APEA since its founding 30 years ago. The first APEA Code of Environmental Practice was published in 1970 – a clear demonstration of industry's early awareness and sensitivity regarding environmental issues, and APEA's leadership in that regard. The Code has been upgraded several times – most recently in 1989 – and is now part of a series of publications dealing with environmental matters. Industry achievements at Barrow Island and Burrup Peninsula, for example, have set national standards.

The rapidly evolving nature of the environmental debate demands constant re-evaluation of APEA's programs and plans, and restructuring to better fit the future needs. That process of self-evaluation continues in 1990 with the Land Use Committee's presentation, and related discussions, at the APEA Convention.

The main environmental and social issues facing the petroleum exploration and development industry in Australia today are:

- a Access to Land.
State and Federal legislation limits or excludes petroleum exploration in a wide range of areas:
 - National Parks
 - Marine Parks
 - Flora and Fauna Reserves
 - Recreational Reserves
 - National Estate areas
 - World Heritage areas
 - Wilderness Areas.The wording may not specifically prohibit exploration but the effect is to so severely inhibit access as to make exploration efforts commercially impracticable (APEA, 1990).
- b Pollution of land or sea areas by oil spills.
- c Effect of atmospheric emissions – Greenhouse Effect, Ozone layer.
- d Aboriginal land.
- e Education regarding Sustainable Development.
- f Waste management and recycling.

APEA's and industry's environmental efforts and programs to date provide a good start towards managing these issues – and the environmental issue generally.

APEA's newly updated Code of Environmental Practice details the relevant legislation and appropriate environmental planning for all phases of oil and gas exploration and development, both offshore and onshore. The Code is aimed primarily at corporate management, but Field Guides dealing with practical aspects have been prepared

for use by site personnel. Individual companies have also prepared handbooks and field guides, including manuals on particular problems, e.g. bulldozing seismic lines. Several State Governments have taken up aspects of these codes and incorporated them into the State regulations.

Position papers on a variety of environmental issues have been prepared by APEA, the Australian Institute of Petroleum (AIP) and the Australian Gas Association (AGA). Issues include the concept of multiple and sequential land use, the Wilderness concept and World Heritage. APEA (1990) has recently completed a comprehensive overview report, *Land Use and Environmental Protection in Australia: A Petroleum Exploration and Production Industry Perspective*. This material has been distributed mainly to politicians, government and industry officials and the media, but has also been disseminated through talks, articles and interviews by APEA members and Secretariat.

APEA has also prepared a booklet on *Aboriginal Communities and Petroleum Exploration and Development*. This has recently been endorsed by the Federal Department of Aboriginal Affairs.

Industry has developed new techniques to minimize the environmental impact of exploration activity, e.g. the use of rollers to prepare seismic lines, thereby minimizing root-stock and surface disturbance, and erosion.

The petroleum industry worked closely and successfully with the South Australian Government in developing a policy incorporating the multiple land use principle. APEA was a strong advocate of the Federal initiative to create the Resource Assessment Commission to undertake cost/benefit analyses of resource development and land-use decisions, including conservation proposals. Subsequent amendments to the RAC's terms of reference have, unfortunately, reduced its value in this regard.

These programs and efforts will be continued but the need for new and expanded initiatives is clear.

i APEA has recognized the need for more direct input to the community. Two points will be emphasised:

- the importance of the petroleum industry to the welfare of Australia
- the professionalism and success of the industry in its environmental management and pollution control programs.

This material will be covered by press releases and advertisements in the printed media and on television, and will be publicised at public seminars and meetings, and in briefing sessions with politicians, bureaucrats and conservationist groups.

ii The urgent need to provide more educational material to schools is being addressed. The APEA kit will present the environmental management aspects of the petroleum industry, and should be available to schools in 1991.

iii APEA is committed to a significant role in developing the concept of sustainable development in Australia. The fact that no Australian government or opposition party, State or Federal, has accepted the need for economic assessment of conservation programs, and that only the South Australian Government has accepted the multiple land use concept, testifies to the long road ahead.

The Australian petroleum exploration and development industry obviously faces a great challenge in the 1990s. It must become a more active part of the community. It must implement the sustainable development ethic internally, and help resist those forces who will oppose it in the name of the environment. That will take considerably more time, effort and resources than industry has committed in the past. But it is imperative.

BOATS AGAINST THE CURRENT – A CREDO

Environmentalists constantly describe the earth as sacred. This elevates environmentalism to a moral issue, and, naturally, the environmentalists claim the high ground: it is they who care for the earth, and so it is they and their arguments that are moral. These claims serve two ends. Firstly, they preclude the need for further debate: the claim of morality is not meant as an argument, but as the end of the argument. Secondly, they imply that business and Industry, however environmentally minded, remain fundamentally in the wrong.

This falsehood has been sold very effectively. Conversations with businessmen, and scrutiny of their writings, show that many accept the environmentalists' propaganda. It is likely that much of the hesitance to speak out against environmentalism comes from a deep-seated concern that, in the end, they may be right. That is a wrong view, and must not be entertained.

As ultimate scientific proof of their arguments, environmentalists point to the Second Law of Thermodynamics, the principle of entropy. This says that when energy is converted from lower to higher entropy, i.e. from a more organized to a less organized form, the energy to restore it to its original form (and energy potential) is greater than the energy originally released. In simple terms, burning a piece of wood involves a net loss of energy. The cosmological implication is that, like a river flowing downhill, energy is constantly dissipating to lower levels, towards a vast level-temperature, low-grade-energy sink. The earth is spinning down to die, and the universe with it unless other forces, natural or supernatural, come into play.

Environmentalists argue that using energy and resources only speeds the end. Thus science is said to substantiate their claim to the moral ground, and to denounce industry and progress as inevitably destructive. This is a despairing view, and its claim to morality is false. Modern science – the mythology of our times – offers, as it should, a more positive view of the cosmic order.

Ilya Prigogine, the Belgium chemist, won the 1977 Nobel Prize for work on the Second Law of Thermodynamics. Like others, Prigogine knew that living organisms are 'negative-entropy machines' – they create order – and that order prevailed in the random disorder of some physical and chemical reactions. Prigogine's genius was to recognize these phenomena as back currents of higher order, running against, and driven by, the flow of disorder.

The river may flow downhill, but all along the edges are eddies that swirl and sweep upstream.; momentarily perhaps, but upstream. Prigogine saw that 'we are those little

back currents, small pockets of non-random organization where entropy is momentarily reversed' (Arnold, 1982). We take energy from the downward flow, and use it to move upstream. We flow down again, draw strength anew, and sweep back.

'So we beat on', as F. Scott Fitzgerald put it, 'boats against the current, borne back ceaselessly into the past'. For the past is higher order, and our journeying there ultimately prolongs the passage to the sea.

When we use energy so, we are not robbing the future, we are prolonging it. Obviously we must use non-renewable energy no more than necessary, but solar and nuclear energy seem inexhaustable.

As our technology improves, we learn to do more with less consumption of energy and resources. That is conservation. For the less we need and use, the greater are the resources available. There are infinite points on a finite line (Simon, 1981).

Technological progress and the building of civilization, says Prigogine (1985), are not flawed; they are in keeping with the universe, for they are building order out of chaos.

We are beginning to learn, like Gilgamesh, that the city and the forest are both essential to man's future and happiness. We have come to understand that conservation and development are really the same process on different time scales, and we must reconcile them within us. Such a reconciliation will be worth our efforts, and worth passing on to the future.

'It would be wrong', US President George Bush said recently, 'to pass onto future generations a world tainted by present thoughtlessness' (ICC, 1989).

It would be wrong, too, to pass on a fear of the future. The future needs our dreams, not our despair.

ACKNOWLEDGEMENTS

My thanks for wide-ranging help and constructive comments from friends and APEA LUC colleagues, especially R. Nunn, J. Poll and O. Morozow. My very special thanks to my wife, Robyn Purcell, for her editorial help and encouragement.

REFERENCES

- ARNOLD, R., 1982 — *At the Eye of the Storm: James Watt and the Environmentalists*. Regnery Gateway, Chicago.
- AUSTRALIAN MINING INDUSTRY COUNCIL, 1988 — *Lost in the Wilderness*. Australian Mining Industry Council, Canberra.
- AUSTRALIAN PETROLEUM EXPLORATION ASSOCIATION, 1988 — Submission to the Economic Planning and Advisory Council on Broad Budget Strategy for the 1988/89 Commonwealth Budget. Australian Petroleum Exploration Association, Sydney.
- AUSTRALIAN PETROLEUM EXPLORATION ASSOCIATION, 1990 — Land Use and Environmental Protection in Australia: A Petroleum Exploration and Production Industry Perspective. Australian Petroleum Exploration Association, Sydney.
- BARBOUR, I. (Ed), 1973 — *Western Man and Environmental Ethics*. Addison-Wesley, Reading.
- BARNEY, G.O., 1977 — *The Unfinished Agenda*. Thomas Y. Crowell Co., New York.
- BLAINEY, G., 1989 — *The Great Seesaw: A New View of the Western World, 1750-2000*. Macmillan, Melbourne.
- CAMPBELL, J., 1973 — *Myths To Live By*. Bantam Books, New York.
- CARSON, R., 1962 — *Silent Spring*. Houghton Mifflin, Boston.
- COMMONER, B., 1972 — *The Closing Circle*. Bantam Books, New York.
- DEPARTMENT OF HOME AFFAIRS AND ENVIRONMENT, 1983 — National Conservation Strategy for Australia: Living Resource Conservation for Sustainable Development. Australian Government Printer, 1983.
- EHRLICH, P., 1968 — *The Population Bomb*. Ballantine Books, New York.
- ELIOT, T.S., 1940 — *The Cocktail Party*. Faber and Faber, London.
- GEOTIMES, 1989 — Polls indicate concern about the environment. December 1989, 10.
- HARBISON, R., 1980 — *Deliberate Regression*. Andre Deutsch, London.
- INTERNATIONAL CHAMBER OF COMMERCE, 1989 — Sustainable Development. The Business Approach. ICC Publication 210/330, Stockholm.
- INGLEHART, R., 1977 — *The Silent Revolution: Changing Values and Political Styles among Western Publics*. Princeton University Press, Princeton.
- ISAAC, R.J. & E., 1983 — *The Coercive Utopians: Social Deception by America's Power Players*. Regnery Greenway, Chicago.
- KARADZIC, N., 1989 — A Country Practice: Feminized Community. *IPA Review*, June-August, 1989, 62-6.
- KENSEY, S.D., 1990 — Sustainable Development — Beyond the Rhetoric. Address to Earth Resources Foundation Seminar, University of Sydney, 23 February, 1990.
- KRISTOL, I., 1978 — *Two Cheers for Capitalism*. Basic Books, New York.
- LOVELOCK, J.E., 1987 — *Gaia. A new look at life on Earth*. Oxford University Press, Oxford.
- LOVINS, A., 1977 — *Soft Energy Paths*. Harper and Row, New York.
- MACNEIL, J., 1989 — Strategies for Sustainable Economic Development. *Scientific American*, 261, 3, 104-13.
- MASLOW, A.H., 1970 — *Motivation and Personality*, 2nd edn. Harper and Row, New York.
- METZGER, H.P., 1979 — *The Coercive Utopians: Their Hidden Agenda*. Public Service Company of Colorado, Denver.
- NEWS WEEKLY, 1990 — Conservation Foundation repays Labor. March 17, 1990, 5.
- PEARCE, D., 1989 — *Sustainable Development*. The Pearce Report. Management Brief, Shell International Petroleum Company Limited.
- PRIGOGINE, I., 1985 — *Order out of Chaos. Man's New Dialogue with Nature*. Fontana, London.
- RUCKLEHAUS, W.D., 1989 — Towards a Sustainable World. *Scientific American*, 261, 3, 114-20B.
- SAMUELS, P., 1981 — TV writers put the boot into business. *The Bulletin*, August 4, 1981, 123.

SCHUMPETER, J.A., 1939 — *Capitalism, Socialism and Democracy*. Allen and Unwin, London.

SIMON, J.L., 1981 — *The Ultimate Resource*. Princeton University Press, Princeton.

SINCLAIR, A., 1977 — *The Savage: A History of Misunderstanding*. Weidenfeld and Nicolson, London.

SMITH, B., 1984 — *European Vision and the South Pacific*, Second Edition. Harper and Row, Sydney.

STERN, F., 1963 — *The Politics of Cultural Despair*. University of California Press, Berkeley and Los Angeles.

SUZUKI, D., 1990 — *Inventing the Future*. Essays on Science, Technology and Nature. Allen and Unwin, Sydney.

THOMAS, K., 1983 — *Man and the Natural World*. Changing Attitudes in England, 1500–1800. Allen Lane, London.

TIME, 1988 — Earth-Fire: The Struggle for Australia. November 28, 15–41.

TUCKER, W., 1982 — *Progress and Privilege: America in the Age of Environmentalism*. Anchor Press/Doubleday, New York.

WARREN, R.P., 1989 — Offshore Oil and Gas Exploration: What are the environmental effects and do they justify limitations on access to coastal waters? *Australian Petroleum Exploration Association Journal*, 29, 1, 84-95.

W.A. GOVERNMENT, 1987 — Mining and the Environment. Balancing the scales. *Western Australian Government Policy Report*, Perth.

WILLIAMS, R., 1973 — *The Country and the City*. Chatto and Windus, London.

WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1987 — *Our Common Future*. Oxford University Press, London.