

New Zealand Committee of the International Union for Conservation of Nature and Natural Resources



SUBMISSION ON PUBLIC DISCUSSION DOCUMENT: “MAXIMISING OUR MINERAL POTENTIAL: STOCKTAKE OF SCHEDULE 4 OF THE CROWN MINERALS ACT AND BEYOND”

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INTRODUCTION

IUCN, the International Union for Conservation of Nature and Natural Resources (hereafter referred to as IUCN) is the largest global nature conservation network. Membership of IUCN uniquely includes over 80 states, over 100 state agencies and over 800 NGO member organisations, plus some 11,000 scientists involved on a voluntary basis through six technical Commissions. IUCN works with governments, non-government organisations, United Nations agencies, development banks, companies and local communities across the world to conserve the integrity and diversity of nature. The Union has Official Observer Status at the United Nations General Assembly. Appendix 1 and www.iucn.org give more information on IUCN.

New Zealand scientists, protected area managers, government officials and a wide range of professional individuals and groups have been involved in the work of the IUCN since its earliest years. The New Zealand Committee of IUCN (NZIUCN) is the representative body for New Zealand and New Zealand-based IUCN Members and representatives of IUCN Commissions. In this submission we present both international and national considerations relevant to the proposals for the Schedule 4 Stocktake. We would note that the State Member (Department of Conservation) and State Agencies have not been involved in drawing up this submission.

By way of background we record that New Zealand's protected areas are highly regarded world-wide for their richness in biodiversity and geo-diversity, their legislative integrity and the quality of their management. This superb system has been built up progressively over the past 123 years (since the initial gifting of Tongariro National Park by Ngati Tuwharetoa in 1887) and, as well as its conservation values, provides the natural landscape and attractions for much of our tourism industry.

It is little wonder then that the most important of these protected areas – the national parks, nature reserves and scientific reserves, wilderness areas, sanctuaries, marine reserves, and the conservation lands of the Coromandel Peninsula and the islands of the Hauraki Gulf Maritime Park – were given legislative protection from mining in 1997 by the then National-led Government in Schedule 4 of the Crown Minerals Act 1991.

This amendment to the Act was not arrived at lightly but achieved only after several years of careful public consideration and negotiation by stakeholders. New Zealand has a well-developed practice of public involvement in decisions regarding the use of public conservation land. Consistent with this, the proposed removal of legislative protection from important areas of public conservation land also calls for extensive public scrutiny and consultation. This history forms a backdrop to the Committee's submission.

In responding to the Stocktake Discussion Paper below we use the numbering system set out in the Submission Questions document.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Question 1 and Question 4: NZIUCN opposes the removal of these lands from Schedule 4 – and any future removal of other protected areas already on the schedule in the localities listed in section 5.1 of the discussion document – and opposes (Question 4) further investigation of the mining potential of Conservation lands

The philosophy and intent of our national parks legislation is basically opposed to those of the Discussion Paper: the designation of national parks (and other legislatively protected areas) amounts to a conscious foregoing by our nation of any unsustainable extractive uses (like mining) of these lands.

Fundamentally, the proposals contained in the discussion document are flawed. They are contrary to longstanding and recognized practice and to the ethic of New Zealanders and are in conflict with a number of significant global considerations and practices.

There is no need to mine the conservation estate in order to develop New Zealand's mining industry.

Full consultations with the tangata whenua on all the proposals are appropriate and overdue

Question 2: The areas listed all fit the criteria in Schedule 4 of the Crown Minerals Act and therefore should be added.

NZIUCN submits that the following high-value conservation area types be added to Schedule 4: national reserves such as Lewis Pass, all of our World Heritage areas (Te Wahipounamu, Tongariro and the Sub-Antarctic Islands), and all ecological areas.

NZIUCN supports a law change to remove any ambiguities and enable automatic addition to Schedule 4 of protected areas which meet the criteria.

Question 3: NZIUCN rejects as grossly overstated the economic assumptions and contentions that form a highly significant part of the rationale for mining in areas included in Schedule 4, and does not accept the Government's stated position that "*it is possible to balance the different values of areas, and that modern mining need not be at the expense of conservation or other values.*" Any valid calculations need to take into account both the environmental and the economic costs of mining including the costs of extraction, environmental damage costs and the losses of market and non-market benefits.

Furthermore, NZIUCN is of the view that if Government is prepared, for example, to countenance mining in Coromandel Peninsula protected areas with their high and threatened biodiversity values, then we have little confidence it is willing to protect other endangered plants and animals in other Schedule 4 lands.

Question 5: NZIUCN recommends that:

- because conservation funding is currently woefully inadequate, much more Crown funding of core work is required;
- a conservation fund from royalties should not, however, be seen as making mining on conservation land more acceptable;
- a royalties fund can supplement efforts, but should not be restricted or capped;
- it is appropriate that some royalties from mining on conservation land are allocated to conservation priorities;
- a contestable fund will assist in supplementing conservation work - some design features of the proposal are supported, while others are not.

Question 6: NZIUCN strongly opposes the proposed changes to existing provisions in relation to decision-making on mining access to Schedule 4 and other conservation

areas.

Question 7: NZIUCN regards the abandonment, by the current government, of the well-established practice of extensive public consultation on any proposal to alter the designation, management or use of public conservation lands as an unfortunate and undemocratic precedent, and recommends that Ministers and officials resume the usual practice of organizing open public meetings to explain the resource values at stake and to respond to questions.

RESPONSES TO QUESTIONS AND CONCLUSIONS

Questions 1 and 4: areas proposed for removal from Schedule 4 or for addition to the research and investigation programme.

The interplay of national and international factors is important in responding to these questions since existing policy and practice is clear, and New Zealand is in alignment with the global dimension.

As the acknowledged world leader in protected area identification and management IUCN sets the international standards. Its six-fold (I-VI) classification system for protected areas is followed by virtually all government conservation agencies. All of our New Zealand protected areas in Schedule 4 conform with IUCN's highest protection categories, namely I-IV (see Appendix 2 for a detailed explanation of the categories). Our nature, scientific, and marine reserves and wilderness areas accord with IUCN's Category I **strict protection areas**; our national parks to IUCN's Category II (**national parks**¹); the **remaining conservation lands** on Schedule 4 are a mixture of IUCN's Category III and IV protected areas.

The IUCN's attitude to mining in Protected Areas is unequivocal. Its World Conservation Congress in 2000² called on "...all IUCN's State members to prohibit by law, all exploration and extraction of mineral resources in protected areas corresponding to IUCN Protected Area Management Categories I to IV."

This call posed no problem for New Zealand: we have been able to hold our heads high in international conservation circles (and especially in the global development of national biodiversity strategies stemming from our commitment to the UN Convention on Biological Diversity) because our most important protected areas have for decades been proscribed for unsustainable resource uses like mining..

The intent of the National Parks Act 1980, for example, again introduced by a National-led government, is quite clear. Such areas of New Zealand "... contain scenery of such distinctive quality, ecological systems, or natural features so beautiful, unique, or scientifically important that their preservation is in the national interest." Why? For the purpose of "... preserving (such areas) **in perpetuity** as national parks, for their intrinsic worth and for the benefit, use, and enjoyment of the public..." [S.4 (1)].

The philosophy and intent of our national parks legislation is thus fundamentally opposed to those of the Discussion Paper. There is no room for compromise – the designation of national parks (and other legislatively protected areas) amounts to a conscious foregoing by our nation of any unsustainable extractive uses (like mining) of these lands.

It is irrelevant that the 7,058 ha of protected areas proposed for removal from Schedule 4 are only a small portion of New Zealand's conservation lands, that the exact area eventually mined could be even smaller than this, and that all mining would have stringent environmental controls. **Fundamentally, the proposals of the Discussion Document are flawed. They are contrary to longstanding and recognized practice and to the ethic of New Zealanders.**

NZIUCN accordingly opposes the removal of these lands from Schedule 4 – and any future removal of other protected areas already on the schedule in the localities listed in section 5.1 of the discussion document – and opposes (Question 4) further investigation of the mining potential of Conservation lands.

¹ *Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.*

² *Resolution 2.82, World Conservation Congress, Amman, Jordan, 4-11th October, 2000*

Global considerations

NZIUCN further submits that the proposals to remove areas from Schedule 4 should be rejected as they are in conflict with a number of significant global considerations.

Such a decision would involve New Zealand, often regarded as a leader in conservation, in diminishing the immense global importance of protected areas at a time when the international community, through the Programme of Works on Protected Areas of the Convention on Biological Diversity and the United Nations *International Year of Biodiversity*, looks to governments to be strengthening their commitments.

Biodiversity is already under threat globally and there is an escalating extinction crisis. We know that New Zealand's largely unique biodiversity has experienced one of the highest species extinction rates in the world, due to the loss of habitats and the introduction of pest plants and animals. Almost 2,500 native land-based and freshwater species are listed as threatened³. Protected areas are the principal sanctuaries for these species and every new incursion into protected areas contributes to irretrievable biodiversity loss.

In a time of mounting threats to nature worldwide, the precedent of a developed nation removing legislative protection to allow mining sets a very serious example to other, less fortunate, nations.

The specific issue of mining in or near protected areas has been an issue of serious concern to IUCN Members for many years, a fact that is reflected in numerous resolutions and recommendations of IUCN World Conservation Congress and in the various World Parks Congresses. Some examples follow.

The world's leading authority on protected areas, the IUCN World Commission on Protected Areas, stated in 1999 that "*exploration and extraction of mineral resources are incompatible with the purposes of protected areas corresponding with IUCN Protected Areas Management Categories I to IV, and should therefore be prohibited by law or other effective means*". As noted above, the World Conservation Congress endorsed this recommendation in the following year.

At the World Conservation Congress in 2008, IUCN Members called on its State Members to "*uphold the integrity of critical ecosystems, and of IUCN's Protected Area Categories, in the management of the world's protected areas and to establish and enforce international best practices and national laws for mining*" (Recommendation 4.136). They also urged "*global mining companies, including the members of the International Council for Mining and Metals (ICMM), to avoid mineral exploration and mining activities that will affect the long-term integrity of high conservation value areas (protected and not protected), critical ecosystems, water catchment areas and biological corridors*".

Also in 2008, IUCN Members reminded countries of "*their obligations under various environmental conventions and agreements to protect the diversity of life and to promote protected areas as a critical means of achieving such protection*" (recommendation 4.087). These decisions support the policy of the World Heritage Committee, the decision-making body of the UNESCO's World Heritage Convention, of not allowing exploration and/or exploitation of mineral resources, oil and gas in World Heritage sites.

IUCN has also obtained from Royal Dutch Shell and the industry-supported International Council on Mining and Metals commitments not to explore or mine in World Heritage Areas⁴.

³ *Ministry for the Environment, Environment New Zealand - 2007*

⁴ http://cmsdata.iucn.org/downloads/iucn_icmm_dialogue_review_final_report.pdf

Tangata whenua considerations

There has been a three week extension to the very brief consultation period on the Stocktake Paper because the government has belatedly accepted that there are significant tangata whenua interests involved. This should have been apparent from the beginning. The first National Park was created as a result of the generosity and far-sightedness of a distinguished Maori leader. Several other National Parks are co-managed by various iwi and there remain unresolved Treaty issues which relate to claims to conservation lands or to mana whenua recognition.

On the international level there is explicit recognition of the place of tangata whenua in global decision-making fora on protected areas. Tuwharetoa Paramount Chief Tumu Te Heuheu is the immediate past Chair of UNESCO's World Heritage Committee, the body which determines which applications for World Heritage status for natural and cultural sites around the world are to be approved, while Aroha Mead (Ngati Awa and Ngati Porou) is the Chair of the IUCN Commission which helps formulate IUCN policy on such issues as Protected Area co-management.

For its part the IUCN membership has consistently shown its awareness of the links between indigenous people and protected areas and the need for full consultation on proposals for changing their status. It has a clear policy to "*promote respect to the free, prior informed consent of indigenous peoples in relation to the interventions of the private sector which may affect the lands, territories and resources of indigenous peoples*", and consistently promotes this principle in its relationships with the private sector.⁵ It calls on governments to "*ensure due recognition of the rights of indigenous peoples in existing protected areas.*" (WCC resolution 4.048, 2008) and in particular supports effective participation of such peoples in the management of protected areas which lie fully or partially within their territories.

NZIUCN recognizes that in relation to many areas currently included in Schedule 4 and elsewhere on the conservation estate there have been, over many years, contentious issues between tangata whenua and Government. These issues often concern acknowledgement of mana whenua and the exclusion from places of wahi tapu and mahinga kai that is imposed by these places being within the conservation estate.

Considering longstanding claims by those that hold traditional mana whenua over the land, and that conservation land is not generally available for Treaty settlements, it seems inequitable to be considering giving rights for prospecting and extractive activities to others. The direction of the proposals is certainly out of line with the trend to co-management as seen in the Ngai Tahu, Waikato-Tainui and other settlements. **Full and considered consultation with tangata whenua on the current proposals is appropriate and overdue.**

Why Conservation land?

It is of great concern that the most valuable conservation areas on the conservation estate, as identified by Schedule 4, are singled out for prospecting. There are millions of hectares of Crown and private land with mineral potential, not only outside of the Schedule 4 lands but also outside the conservation estate, as identified in the discussion document itself (page 5). And furthermore, even the Barker report states quite clearly that, "*both scenarios [of economic growth through mining] can be achieved without access to national parks and other sensitive areas that are now closed to mining*".

NZIUCN believes that, if mining is to be developed in New Zealand, it is negligent of the government not to undertake a stocktake and assessment of mineral prospects on all non-conservation lands. Indeed we believe a responsible government would run such a process before looking at the conservation estate. It is highly likely, as the government's

⁵ IUCN Statement to the United Nations Permanent Forum on Indigenous Issues, May 2009

own discussion paper and the Barker report show, that such an assessment and stocktake would confirm that **there is no need to mine the conservation estate in order to develop New Zealand's mining industry.**

Why, we would ask, are the most precious areas within our conservation protected areas system now being investigated and areas proposed for removal? This has serious implications for our protected areas management systems, and our commitment to our own national Biodiversity Strategy stemming from our commitment to the UN Convention on Biological Diversity. It cannot fail to have detrimental ramifications on our own faith in Government conservation protection, for our marketing brand and our international reputation for environmental management.

As a consequence NZIUCN rejects the proposal to remove any areas that are presently included in Schedule 4 and opposes (Question 4) further investigation of the mining potential of Conservation lands.

Question 2: Areas proposed for addition to Schedule 4

The areas listed all fit the criteria in Schedule 4 of the Crown Minerals Act and therefore should be added.

Furthermore, the addition of specific conservation units that fit the categories listed in Schedule 4 should be an automatic process. It is logical that if an area is added to a National Park, or a new Marine Reserve is created, then these areas should be considered as covered by Schedule 4 by virtue of their elevated conservation status. We understand that this was the intention of Parliament in 1997, and was assumed to be the case by the Department of Conservation until recently.

It transpires that the wording of the Act is ambiguous enough that additions are not being automatically considered to be covered by the Schedule. **The Act should therefore be amended to remove this ambiguity and ensure that any addition to a category covered by Schedule 4 is automatically protected by Schedule 4's prohibition on mining activities.** This includes all new marine reserves, national parks, nature reserves, scientific reserves, wilderness areas, wildlife sanctuaries, internationally significant wetlands and any additions to these areas.

Also, NZIUCN submits that the following high-value conservation area types be added to Schedule 4: national reserves such as Lewis Pass, all of our World Heritage areas (Te Wahipounamu, Tongariro and the Sub-Antarctic Islands), and all ecological areas.

The discussion paper refers to the proposed additions in a way that suggests they offset, or are compensation for, proposed removals. This is not the case. We agree with the Parliamentary Commissioner for the Environment who has submitted that, "*additions should not be regarded as a quid pro quo for the areas proposed for removal*" [emphasis in original]. These additions should have been already protected by virtue of their conservation status belonging to the categories listed in Schedule 4.

NZIUCN supports a law change to enable automatic addition to Schedule 4 of protected areas which meet the criteria. We advocate accordingly an amendment to the Crown Minerals (Protection of Public Conservation Land Listed in the Fourth Schedule) Act. Adoption of this amendment would retain the existing provisions of Schedule 4 protection in the Crown Minerals Act, and would require an Act of Parliament to remove areas from Schedule 4, once they have been gazetted. This would elevate the no-mining protection status of Schedule 4 areas to the same level as National Parks. No area can be removed from a National Park without an Act of Parliament.

Question 3: On the assessment of areas and values

The Discussion Paper's claims regarding the supposed benefits and returns from mining Schedule 4 and other conservation lands, and its attempt to balance values of these

areas, are the least substantiated of all the arguments put forward in favour of mining. They are highly speculative and, more seriously, are based upon false assumptions about the range of values involved and their relative importance. This is a very serious deficiency in the paper and merits close and detailed examination.

Instrumental values and non-market benefits

In considering the proposal to allow exploration of the Conservation estate, ethical, cultural and instrumental values all need to be considered. Instrumental values include economic values, both market and non-market.

According to standard environmental economics, the values that New Zealand gains from Conservation areas include both market and non-market values. A study by the Department of Conservation, completed in July 2004, found that economic activities arising in relation to public conservation land in West Coast/Tai Poutini Conservancy made a significant contribution to the West Coast economy – 15 per cent of the 12,341 full-time job equivalents in the region in 2003, 13 per cent of total household income (\$62.1m,) more than 10 per cent of total gross output (\$221.6m). This economic impact came from DOC employment, mining, and non-mining concessions mainly for tourism, farming, sphagnum moss, electricity transmission lines and telecommunications. Tourism grew in volume by 31 per cent in volume and around 10 per cent in value between 2000 and 2003 and would have grown significantly since. A Lincoln University survey has found that more than 65 per cent of visitors to the West Coast have public conservation land as their prime reason for visiting. Non-market values are real and have to be taken into account in any consideration of the economic contribution of conservation (Turner, Pearce, & Bateman, 1994; Pearce & Turner, 1990; Harris, 2006). The non-extractive **market values** are the familiar values from film-making, landscape and site-based tourism and recreation-related economic activity, such as the value of spending on equipment and transport for film-making, tramping, bird watching, front-country recreation, kayaking, botanising and other activities permitted in protected areas (Walsh, 1986; Polasky, Cosetello and Solow, 2005).

As well as the spending on these activities the **non-market benefits need to be counted** including those to health and from the sense of well-being (or psychogenic renewal as the health professionals say) from the experience of being in and recreating in, these protected environments.

The **non-market benefits** of the value of protected areas in providing a range of ecosystem services has been documented in a wide range of scholarly papers (Christie, *et al*, 2006; De Groot, & Boumans, 2002; *Ecological Economics* vol. 41 2002) and also in the *Millennium Ecosystem Assessment* (MEA) report produced by a UN-appointed international panel of experts and chaired by Watson and Zakri (2005).

Such ecosystem services include the sequestration of carbon; the atmospheric exchange systems; hydrological services such as flood control, soil formation and retention and slope stabilization; a store of biodiversity including genetic, species, population and ecosystem diversity; and other biophysical regulatory systems which support the foundations of life on the planet (De Groot, & Boumans, 2002; Watson and Zakri, 2005). Within the last month the Secretariat of the Convention on Biological Diversity released its Global Biodiversity Outlook 3 (CBD 2010). The executive summary again stressed the fundamental reliance of societies on biodiversity and that “*Its continued loss, therefore, has major implications for current and future human well-being.*”

In addition to the values derived from these ecological services and the film-making and recreational and tourism activities, there is a range of other values to be taken into account. Economists refer to these as ‘passive use’ values and include Bequest Value, which is the value that people place on handing intact protected areas (or other bequests) to the future; Existence Value, which is the benefit that people put on knowing that protected areas and the species and biogeophysical systems are there and well; and the Option Value, which is the value of retaining rather than closing off options. All of

these are well documented to exist and account for why people who do not visit protected areas nevertheless feel strongly about their retention (Harris 2002, Turner, Pearce, & Bateman, 1994; Pearce & Turner, 1990, Walsh 1986).

While there has been no equivalent study here, a study of household willingness to pay for recreation and environmental protection programmes in Colorado (Walsh, 1986: 541-542) concluded that of the total value expressed in a household contingent valuation survey (sample 198 households), the average household willingness to pay was USD \$464/pa, of which Existence Value accounted for 20%, Bequest Value for 27.6% and Option Value for 21.2%. Recreation Value was 31.2%, and the rest would be for ecosystem services and other benefits which include the protection of air, water, forest, fisheries and wildlife in the state. Since these are annual values per household, the total value per household has to be multiplied by the total population of the state and the number of years in which such benefits may occur or be affected. Analogously, benefits to New Zealand and beyond occur from the protection of the areas in New Zealand.

One problem with such calculations is that they assume that money and conservation and ecosystem services are substitutable by money. In fact that is not the case. Moreover, by virtue of their special place and ecosystems, and the irreversible and non-substitutable values, the targeted conservation areas in the New Zealand Discussion Paper are in effect 'non-tradables'.

Values of stocks v flows

Much of the discussion that followed the announcement of the Minister of Economic Development's intention to commission the Discussion Paper and the content of the paper itself, refers to the work of mineral industry proponent, Richard Barker. His paper, *The Natural Resource Potential of New Zealand*, (March 2008) is not peer reviewed, was commissioned by interested parties (Strattera and New Zealand Minerals Industry Association) and hence should not be accepted as either objective or authoritative. Thus, on p. 2 of the Stocktake Discussion Paper, Barker's estimates of \$140 billion for the stock of onshore metallic minerals is used, despite the fact that he was commissioned by Strattera and the New Zealand Minerals Industry Association, so his work is in the nature of client-driven advocacy work.

Barker's paper refers to the value of **stocks** of minerals that he considers may exist in New Zealand, as well as to some of the annual export and other values. We note that much of the debate compares this gross value of speculative stocks with annual returns from, or spending, on conservation. This is flawed analysis for the following reasons.

If the value of **stocks of minerals** is to be used, as does Barker citing Christie and Brathewaite of GNS, (p7-8 & ff of Barker 2008), then this must be compared with the value of the multitudinous benefits from conservation in perpetuity, i.e., **the value of the services in perpetuity from the stock of natural conservation capital involved**.

Barker's estimates of the values of stocks are in gross terms, and make no allowance for the net value of those stocks. For a true economic value, even in strictly market terms, the costs of mining and the scarcity value of the minerals taken (the economic rent) must be deducted from the gross value. That is not done in his report so it greatly exaggerates the net value of the minerals.

Gross benefits overstated, need to be converted to net benefits from mining.

The discussion document refers to market values of minerals extraction, but fails to adjust for a number of costs and leakages, or for opportunity costs, so that **values from mining are grossly overstated. The values of minerals and from mining are all stated in gross terms, and do not account for any of the costs of extraction, nor for the loss of values damaged by mining.** Thus:

- (i) Gross, not net revenues are cited, but this is a massive overstatement and

improbably assumes both that all minerals can technically and economically in fact be mined entirely, and that none of the resources used in mining would otherwise be employed. Neither of these sets of assumptions is remotely probable. Capital, labour, entrepreneurship, and conservation land and water all have alternative employment or provide other benefits, (though a little bit of labour may temporarily be unemployed in the short term). In calculating net benefits, only the value added or actually recoverable and minable areas should be counted, not the gross revenues of the mining all estimated reserves.

(ii) The calculation of any net national benefits from mining also needs to be adjusted for any leakage of payments to foreign factors of production such as to foreign personnel, foreign capital, and foreign entrepreneurship.

(iii) To the extent that society is not properly compensated for the loss of finite resources, mineral or protected area, then calculation of net benefit needs further to be adjusted. Given that Australia is now preparing to tax mining profits at 40%, our royalty levels seem too low, and we would have to account for the leakage of any resource rentals to non-New Zealand mining interests

Adjusting for damage costs and lost benefits from loss of protected areas; Environmental damage and costs

The damage cost value of extracting the minerals is not calculated in either Barker's paper or the Discussion Paper. This damage cost may be to any or all of the non-market values discussed above, and to alternative market values e.g. losses to tourism, and damage to the 'clean green' New Zealand brand, and the country's reputation. These damage costs may be considerable and will be in perpetuity. The damage cost of exploration needs also to be subtracted from the benefits of mining.

In undertaking investigations into the value of the extraction of minerals from a protected area, private (that is rival⁶ and excludable⁷) benefits, i.e. market prices, adjusted for costs, must be further adjusted for the value of the environmental damage caused and the loss of the benefits from the protected areas. Unlike market values, the benefits from protected areas are almost all non-rival and non-excludable, which means that they are available to all. The marginal benefits to each benefiting member of the community have to be summed to get an accurate account of the total benefits lost, and then subtracted from the net market value of mining.

These benefits include those from all the protected area based recreation and tourism activities; film making and other creative benefits; the supply of ecosystem services such as biodiversity, flood control, climate regulation, carbon sequestration, and the like; cultural and national identity and branding values; passive values including the value that each of us puts on retaining the protected areas intact, of handing it on intact to the future, and option value, which is the value placed on retaining options for the future.

The cost of greenhouse gases from the exploration and mining and from the burning of coal and lignite, if these are extracted, must also be subtracted from the net value of the minerals' exploitation. Such costs, to be comparable with the 'value of the stock of

⁶ *Rival means that if one person benefits, then others are deprived of that benefit. Non-rival means that people can simultaneously benefit, as in many people can see and benefit from a view without depriving each other of the view.*

⁷ *Excludable means that a person cannot have something unless they pay for it – e.g. a gold ring, whereas non-excludable means it is not possible financially and technically, to charge for a benefit – e.g. the hydrological, biodiversity and other properties of native ecosystems which we can all benefit from but we cannot be charged for in a market. Excludable goods and services can be traded in a market, but non-excludable goods and services cannot be so must be provided by collective action. This is the main reason that protected areas are directly provided by the state.*

minerals' approach taken by Richard Barker, would have to be added up in perpetuity, not just for the annual operating accounts or even for the life of any mine.

Aggregation of non-market vs market values

The non-market benefits of protected areas are for the most part shared by much bigger sets of people than would share the benefits from mining. For instance, all those who benefit from recreation there, all those who hold existence, bequest and option values, all those who benefit, knowingly or not, from ecosystem and biogeophysical services gain sets of benefits and these have to be summed across the entire benefiting population. Since these benefits are non-rival, benefit to one person does not diminish the benefit to others. The marginal benefits must be summed across each of the valuing populations. These valuing populations may range from local populations (e.g. those who see the view) to national and international populations such as those who benefit from each of the various ecosystem services and from passive use values – existence, bequest and option values. The numbers of such summations can easily outweigh the benefits from minerals mining activity, particularly when those are adjusted for the cost of damage done and the leakage of potential benefits to non-New Zealanders and other foreign factors of production.

Barker says that “*the greatest the value of the minerals sector to New Zealand is through its vital, supportive function for other industry sectors, and its export income*” (2008, p4) but this is just to say that the market value of sales in New Zealand plus the export income, net of costs (not specified by Barker) should be summed to arrive at the total gross value of minerals production. He cites the gross values at \$700mil/pa for the exports of coal, gold, iron-sands and industrial minerals, and \$500mil for aggregates.

Neither of these figures is adjusted for social and environmental damage costs or for the damage that they do to the climate. When such figures are adjusted for the damage costs, which may last in perpetuity, and for the lost flows of benefits from the protected areas affected, these figures will shrink markedly.

Export value per hectare

Barker and Minister Brownlee have both used the argument of export value per ha of mining compared with dairy, production forestry or other activities, and purport to show that mining has a tiny land area (40 km²) compared to the others. Such calculations are misleading since it is not only the mine footprint but the footprint of the exploration, road construction, ancillary works, processing and deposition of waste rock, overburden and tailings (in the case of hard rock minerals) and the impact on water systems that need to be considered. Such area calculations are thus spurious.

Exploration and mining methods and their impacts

The references to ‘**surgical mining**’ in the rhetoric around the proposal to allow mining in protected areas essentially presumes underground mining, not open pit, or that any underground mining such as tunneling or block caving will not result in surface subsidence. Several of the mineral deposits in areas proposed in the Discussion Paper include areas where the nature of the deposits is such that tunneling would not be viable. In this case, open cast or block caving methods would have to be used.

Block caving is an underground method but is almost always accompanied after a period by ‘glory holes’ where hollowed out hills or mountains cave in causing gross disturbance to conservation values. **Open cast mining** would directly impact the surface conservation values. Whatever the method used, overburden and / or waste rock form substantial physical bulk that needs to be put somewhere and, in the areas designated, would form huge impacts on the surrounding natural and social values and physically would cover far more area than the footprint of the mine itself.

Mining and processing hard rock generates **tailings** that are physically, chemically and biologically unstable and have continuing engineering failure risks in seismic areas and in

areas of intense rainfall, such as Rakiura, the Thames and West coasts, the areas near Whangamata and Great Barrier Island.

Tailings, such as those in the Coromandel and Great Barrier Island and many parts of New Zealand, carry a **toxic legacy** made worse by the formation of sulphites and acid water conditions with toxins including heavy metals present. Here, gold and silver is typically formed in association **with heavy metals and other toxins including copper, lead, cadmium, zinc and sometimes also arsenic** e.g. near Thames. Such material can form extensive on-going hazards, as demonstrated by the Tui lead mine which continues to plague Te Aroha with its instability and heavy metal contaminated water, decades after it closed. That mine was tiny by today's standards, but the weather and stability problems are likely to cause similar problems elsewhere.

Coal and lignite mining cause immediate impacts to conservation values, biota, air quality and water quality. **Overburden removal and deposit** typically take up a much bigger area than the mine itself. There are also what can be on-going problems with coal fines contamination of water and air, and acid mine drainage.

The exploration phase of investigation for areas of interest to mining are often assumed to be low impact, but in reality this is not likely to be the case. Aerial magnetic anomaly surveying is low impact on the ground (but generates greenhouse gases), but exploration methods of cutting grid lines through vegetation, of taking bulk samples (which can be the size of a large road cutting), drilling and clearing for the purpose of establishing drill rig positions, road construction and the like can be high impact on the conservation values in question, and can modify natural or well regenerating areas into industrial landscapes with scars that can last for decades. These constitute **losses that must be offset** against any eventual revenues from mining.

Mining of **coastal and marine sands** can have substantial impacts on coastal and marine ecology. The effects of equipment modifying hydrological patterns, lowering coastal and marine terraces, removal, crushing or smothering of biota, as well as the impacts on land of bulldozers and diggers, are significant. As well these impacts are technically difficult and expensive to mitigate.

Oil and gas activity can also have direct and **sometimes catastrophic** impacts, as displayed by oil spills (one litre of oil can contaminate 10,000 litres of water) and fires. These can be from oil wells such as the spills, burning and sinking of the *Deepwater Horizon* in the Gulf of Mexico 80 km from the Louisiana Coast, or from tankers, as with the massive spill from the *Exxon Valdez* off the Alaska Coast. Such major events are hugely damaging and dramatic, but much more common are the lesser but cumulatively damaging spills of oil and periodic foundering of bulk carriers, such as the coal ship that grounded in April 2010 on the Great Barrier Reef within the World Heritage Area.

Intrinsic biodiversity values at risk

It is not only instrumental values which are impacted by mining in sensitive areas. The accelerating loss of biodiversity, on which so much of human life depends, is one of the world's most pressing environmental crises. The conclusion of comprehensive IUCN research is that "*many species are declining to critical population levels, important habitats are being destroyed, fragmented, and degraded, and ecosystems are being destabilised through climate change, pollution, invasive species and direct human impacts*". IUCN⁸ estimates that the current species extinction rate is between 1,000 and 10,000 times higher than it would naturally be.

Because of New Zealand's long isolation over geological time from other lands we have many unique plants and animals that have evolved here and are found nowhere else in the world. Many of these are listed in the IUCN Red List of Threatened Species, which is recognised as the authoritative database on the state of the world's biodiversity.

⁸ http://www.iucn.org/about/work/programmes/species/red_list/about_the_red_list/

The New Zealand Government is committed under various international agreements, such as the UN Convention on Biological Diversity as well as under our domestic laws, to protect and conserve these native species (and their habitats), especially those that are endangered. Successive governments have recognised and honoured these obligations. However, the suggestion in the discussion paper for removal from schedule 4 of the CMA of parts of Great Barrier Island, the northern Coromandel Peninsula, and Paparoa National Park – as well as the 12 extensive areas to be subjected to further investigation work (as listed in section 5.1 of the document) -- undermines our faith that Government will remain fully committed to these obligations to conserve our unique biodiversity.

It is not necessary in this submission to give a detailed account of the biodiversity at risk in all the prospective areas but, to highlight our wider concerns, we consider what is at stake in one of the Coromandel sites currently protected, the Otahu Ecological Area.

The Otahu Ecological Area is, to quote the discussion paper, an area of “...valuable habitat for North Island brown kiwi, Hochstetter’s and Archey’s frogs, as well as native fisheries.”

Hochstetter’s and Archey’s frogs are as globally unique within the world’s amphibians as our tuatara is amongst the world’s reptiles. Both frogs are found nowhere else in the world, and are almost the same as extinct fossil frogs that existed in late Jurassic times 140-160 million years ago⁹. These primitive frogs were once widespread in both North and South Islands, but are now extinct in the South Island and severely restricted in the northern half of the North Island.¹⁰ Archey’s frog, which is now largely confined to the Coromandel Peninsula, is classified by the Department of Conservation as ‘nationally critical’, the highest risk category, meaning it faces a very high risk of extinction.¹¹ Hochstetter’s frog is also threatened and vulnerable to predation by Norway rat, siltation and stream degradation. Mining and stream degradation go hand in hand. Both species are listed in IUCN’s Red List of threatened species. Clearly, the very presence of these globally unique and threatened frogs is sufficient to justify the retention of the Otahu Ecological Area in Schedule 4 under any circumstances.

In addition, the Otahu Ecological Area and other Coromandel sites are important habitat for brown kiwi and our dwindling populations of native fish. Both the North Island brown kiwi and several of our native fish species, the Galaxids (whitebait), also appear in the IUCN Red List as well as in New Zealand listings of threatened species.

An authoritative new publication lists 180 vascular plants that have been classified as threatened in New Zealand.¹² Several of these occur in the Coromandel Forest Park and could potentially be at risk from mining operations in the park. Until more detailed information is available on the distribution of these threatened plants any exploration or mining activity could be exposing as yet undiscovered populations and habitats of them to local declines or extinctions.

If Government is prepared, for example, to countenance mining in Coromandel Peninsula protected areas with such high and threatened biodiversity values, then we have little confidence it is willing to protect other endangered plants and animals in other Schedule 4 lands.

⁹ *The State of New Zealand’s Environment. 1997. Ministry for the Environment, Wellington.*

¹⁰ *Ibid*

¹¹ *New Zealand Threat Classification System lists. 2002. Threatened Species Occasional Publication 23, Department of Conservation, Wellington.*

¹² *Threatened plants of New Zealand. 2010. P. de Lange, P. Heenan, D. Norton, J. Rolfe, J. Sawyer. Canterbury University Press.*

Conclusion of assessment of areas and values

NZIUCN accordingly rejects as grossly overstated the economic assumptions and contentions that form a highly significant part of the rationale for mining in areas included in Schedule 4 and does not accept the Government's stated position that *"it is possible to balance the different values of areas, and that modern mining need not be at the expense of conservation or other values."* Any valid calculations need to take into account both the environmental and the economic costs of mining.

Question 5 Proposal for a contestable fund

The Government discussion paper includes a proposal for a contestable fund to benefit conservation efforts and biodiversity. This fund would come from 50% of royalties from some mining on conservation land, with an annual maximum of \$10 million and minimum of \$2 million. Cabinet papers estimate the actual fund in the first four years will not exceed the minimum level of \$2 million per year.

Conservation Funding

The discussion paper correctly notes that new funding for conservation, provided over the past decade in response to the *Biodiversity Strategy (2000)*, has *"helped to maintain and enhance the protection of New Zealand's conservation assets"*, but that *"broader negative trends require more attention"*.

Given the size of the conservation challenge identified in the *Biodiversity Strategy*, the review of the progress made against the Strategy in 2005 (Green and Clarkson 2005) and the recent cuts in funding for the Department of Conservation, we submit that the proposed fund is woefully inadequate.

The first step to genuinely address the conservation challenge is to restore Crown funding for conservation and restore and extend the Community Conservation Fund. A new fund from mining royalties is no substitute for adequate core conservation funding.

A new conservation fund from any mining royalties should include 50% of **all** royalties and levies from **all** minerals and hydrocarbons (including coal, oil and gas) underneath Conservation land and should not have an arbitrary capped maximum level.

Rejection of principle of net conservation benefit in this case

While the discussion paper makes it clear that the fund is not designed to offset the negative impacts of mining, we are concerned that the Government has perpetuated that perception by proposing it alongside removals from Schedule 4 and other proposals to facilitate more mining in conservation areas.

We think it is important to state that, in general, a fund like that proposed cannot offset the negative impacts of mining by creating 'no net loss' in biodiversity and conservation or even a 'net gain'. It may sound like a good idea, but it does not work in practice, or theory. Such schemes tend to facilitate resource development at the expense of biodiversity and conservation. New Zealand scientists have concluded that promises of 'no net loss' or 'net gain' often crumble under scrutiny from ecology and economics.¹³

Although environmental compensation initiatives such as the contestable fund seem laudable, ecological, economic and administrative problems with such schemes appear

¹³ See especially: S. Walker et al. (2008) "Why biodiversity barter fails." *Conservation Letters*. Volume 2, Issue 4. Pages 149-157. At <http://www3.interscience.wiley.com/cgi-bin/fulltext/122399065/PDFSTART>

so intractable that the schemes end up doing more harm than good to biodiversity. Viable environmental compensation and meaningful biodiversity protection are often mutually exclusive: we can achieve one or the other, but not both. Although compensation might aid some local conservation efforts, it is inevitable that the mining endeavour proposed by the Government, particularly in Schedule 4 areas, will result in a net loss of biodiversity and conservation values.

Fund design

The fund has a number of design features that we broadly concur with, although NZIUCN would like to be involved in the more detailed design of the fund, particularly the setting of criteria, to ensure that any fund set up does achieve its stated aim.

We support the fund being **additional** to current Crown funding for conservation and used to supplement existing conservation activities for New Zealand. However, we submit that the fund should be predominantly allocated to conservation priorities, rather than historic and recreation activities though historic heritage and recreation opportunities should still be eligible.

We support the proposal that the fund **not be used to mitigate the effects of mining or provide compensation for mining impacts**. We agree with the Parliamentary Commissioner for the Environment's submission that a fund "*should not be used to pay for mitigating the environmental impact of mining; these costs should be borne by the mining companies*". The provisions of the Conservation Act and Resource Management Act must continue to regulate all mitigation or compensation for the environmental impacts of mining.

Fund administration

Finally, we submit that the administrative and decision-making design of the proposed fund will not enable it to achieve its stated objective.

The discussion document proposes that the fund should be run by an independent panel appointed by the Minister of Energy and Resources and the Minister of Conservation. We disagree strongly. The Minister of Conservation should appoint this panel. The panel's task would be to allocate the funds, and its expertise should be firmly focused on the fund's objective: conservation outcomes. The Minister of Conservation is solely placed amongst Ministers to make the appointments: the involvement of the Minister of Energy and Resources would be inappropriate.

The fund should be administered by the Department of Conservation. DOC already has the administrative infrastructure to manage contestable funds that are independent of DOC's own funding. It is essential that DOC's expertise in conservation and connections to the community be available to the panel to enable optimal use of the fund. We point to the Waste Minimisation Fund as a parallel example, overseen by a Board appointed by the Minister for the Environment and administered by the Ministry for the Environment.

It is appropriate that the fund is contestable, to ensure a high quality of applications and allocations of grants to the highest priority conservation projects. However, given the imbalance in institutional resources of Government, Local Government and Corporate organisations and businesses compared to the community and not-for-profit sector, we submit that some balancing be undertaken to ensure the fund is not captured by one conservation sector at the expense of another. The community sector is crucial in that successful conservation projects and durable outcomes rely on community support. It would be appropriate to limit the proportion of funding available to Government, Local Government and Corporate sectors.

NZIUCN accordingly recommends that:

- **because conservation funding is currently woefully inadequate much more Crown funding of core work is required;**

- a conservation fund from royalties should not, however, be seen as making mining on conservation land more acceptable;
- a royalties fund can supplement efforts, but should not be restricted or capped;
- it is appropriate that some royalties from mining on conservation land are allocated to conservation priorities;
- a contestable fund will assist in supplementing conservation work - some design features of the proposal are supported, while others are not.

Question 6: Proposed changes to decision-making on access arrangements

NZIUCN is most apprehensive about the net impact of the proposed insertion of a Minister with a development agenda into the decision-making process for mining applications on Conservation land. At the moment, for sound safeguard reasons, application decisions are made by the Conservation Minister alone. To have such decisions made in future a joint responsibility with the Minister in Cabinet with responsibility for fostering Economic Development as well as Energy and Resource issues is to distort the process and diminish significantly the likelihood that conservation considerations will be taken seriously.

NZIUCN accordingly strongly opposes the proposed changes to existing provisions in relation to decision-making on mining access to Schedule 4 and other conservation areas.

Question 7: Other issues: undermining best practice in public consultation on conservation lands

New Zealand has an enviable and rich history of public involvement in the use of public conservation land. These Crown-owned landscapes and seascapes contain the best of our natural heritage and much of our cultural heritage (much of it of especial importance to tangata whenua). It has long been accepted in public land law that any change in status of large tracts of Crown land is subject to exhaustive public consultation. This is particularly the case with designation of new national parks, conservation parks, wilderness areas, and marine reserves – and rightly so.

But just as the setting up of strict protection areas may have a social or economic impact on affected members of the public, so too does the removal of legislative protection from important areas of public conservation land. Consequently, government needs to honour our tradition of public scrutiny, consultation, and careful analysis of consequences.

The current discussion document “Maximising our Mineral Potential” smacks of a *fait accompli*. The initial six week period (later extended) for public submissions was outrageously short for such a major change in government policy (for what is a significant natural resource use change which was not foreshadowed in the National Party’s 2008 election policy). For instance, public consultation regarding the designation of Kahurangi National Park in 1996 was spread over a period of about three years, and included many public meetings, resource studies, and meetings with tangata whenua and interest groups (including the mining industry). Likewise, the 10-yearly reviews of each of our 14 national park management plans involve wide consultation over an average period of two years. For the key over-arching regional Conservation Management Strategy documents (with a scope of 10 years), public consultation has generally involved about two years of meetings, submissions on initial drafts, refined strategy releases, etc. Indeed, the development of the concept and contents of Schedule 4 itself involved several years of consultation by government with interested parties.

NZIUCN accordingly regards the abandonment by the current government of the well-established practice of extensive public consultation on any proposals to alter

the designation, management or use of public conservation lands as unfortunate and undemocratic and recommends that Ministers and officials resume the usual practice of organizing open public meetings to explain the resource values at stake and to respond to questions.

APPENDIX 1: ABOUT IUCN

IUCN, the International Union for Conservation of Nature and Natural Resources, helps the world find pragmatic solutions to our most pressing environment and development challenges. It supports scientific research, manages field projects all over the world and brings governments, non-government organizations, United Nations agencies, companies and local communities together to develop and implement policy, laws and best practice.

IUCN is the world's oldest and largest global environmental network - a democratic membership union with more than 1,000 government and NGO member organizations, and almost 11,000 volunteer scientists and conservation area managers in more than 160 countries.

IUCN's work is supported by more than 1,000 professional staff in 60 offices and hundreds of partners in public, NGO and private sectors around the world. The Union's headquarters are located near Geneva, Switzerland.

For 60 years, IUCN has led the development of conservation science and knowledge, and brought together governments, NGOs, scientists, companies and community organizations to help the world make better conservation and development decisions.

Key Facts about IUCN

Founded in 1948 as the world's first global environmental organization

Today the largest professional global conservation network

A leading authority on the environment and sustainable development

More than 1,000 member organizations in 140 countries including 200+ government and 800+ non-government organizations

Almost 11,000 voluntary scientists and experts, grouped in six Commissions

A neutral forum for governments, NGOs, scientists, business and local communities to find pragmatic solutions to conservation and development challenges

Thousands of field projects and activities around the world

Governance by a Council elected by member organizations every four years at the IUCN World Conservation Congress

Funded by governments, bilateral and multilateral agencies, foundations, member organizations and corporations

Official Observer Status at the United Nations General Assembly

APPENDIX 2: IUCN PROTECTED AREA MANAGEMENT CATEGORIES

IUCN Protected Area Management Categories constitute the global standard for the planning, establishment and management of protected areas. The (IUCN) definition of a protected area is:

“A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.

This means that:

Only those areas where the main objective is conserving nature can be considered protected areas; this can include many areas with other goals as well, at the same level, but in the case of conflict, nature conservation will be the priority;

Protected areas must prevent, or eliminate where necessary, any exploitation or management practice that will be harmful to the objectives of designation;

Protected areas should usually aim to maintain or, ideally, increase the degree of naturalness of the ecosystem being protected.

Descriptions of PA management categories – some New Zealand examples.

The IUCN categories are not used by DOC or any other NZ land management agency although the Auckland Regional Council has recently been investigating the feasibility of applying the categories in areas they manage.

<p>1a. Strict Nature Reserve</p> <p>Category 1a are strictly protected areas set aside to protect biodiversity and also possibly geological / geomorphologic features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.</p>	<p>Little Barrier Island; Sub Antarctic Islands.</p>
<p>1b. Wilderness Area</p> <p>Category 1b protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.</p>	<p>Wilderness areas are identified and included in Conservation Management Strategies and Management Plans. Examples include:</p> <p>Olivines, Hooker-Landsborough Adams Wilderness</p>
<p>II. National Park</p> <p>Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally</p>	<p>All National Parks fit these criteria and contain some of NZ's most treasured conservation, recreation and tourism resources.</p>

compatible spiritual, scientific, educational, recreational and visitor opportunities.	
<p>Areas of this category proposed for removal from Schedule 4</p> <p>Te Ahumata Plateau on Great Barrier Island: Great Barrier Island is part of the Hauraki Gulf Marine Park and is the largest island off the North Island coast. More than 60 percent of the island – including areas as detailed in Schedule 4 - is public land administered by the Department of Conservation.</p> <p>Sections of conservation land on the Coromandel Peninsula: The area contains important forest remnants and regeneration, with threatened plants, rare native frogs including Red Listed Archey’s and Hochstetter’s frogs, brown kiwi and native fish. A local community group has put much effort into saving the remnant kiwi population. Stream waters are of high quality and are good habitat for native fish. It’s a popular recreation area for locals, holidaymakers and tourists.</p> <p>Otahu Ecological Area, Coromandel: The Otahu Ecological Area (396ha) and its neighbouring Parakawai Reserve (70ha) drain into the 110ha Otahu estuary south of Whangamata. The Otahu River retains an intact natural sequence from the mountains to the sea. It is ranked as <i>outstanding</i> in a 1993 Department of Conservation survey; an “<i>area of significant conservation value</i>”, “<i>nationally significant recreation resource</i>” and of “<i>ecological significance (outstanding)</i>” in proposed council plans. Habitat for Red Listed Archey’s and Hochstetter’s frogs, brown kiwi and native fish.</p> <p>The Inangahua sector of Paparoa National Park: The river terraces of eastern Paparoa National Park are blanketed in a thick layer of podocarp (rimu and kahikatea) and beech (red and silver) forest, watered by a healthy rainfall of 4-5 metres a year. Glacial action has carved out dramatic cliffs and sharp ridges and river action has built broad terraces with majestic trees. The area provides a range of important habitats.</p>	
<p>III. Natural Monument</p> <p>Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.</p>	<p>Some Scenic Reserves would be applicable.</p>
<p>Areas of this category proposed for removal from Schedule 4</p> <p>Parakawai Geological Area, Coromandel: The quarries within the Parakawai Ecological Area have excellent examples of columnar jointing.</p>	
<p>IV. Habitat/ Species Management</p> <p>Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.</p>	<p>Not Applicable</p>
<p>V. Protected Landscape/Seascape</p> <p>A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological,</p>	<p>Farewell Spit/Puponga Farm Park Molesworth Station Farm Park</p>

<p>biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.</p>	
<p>VI. Protected Area with Sustainable Use of Natural Resources</p> <p>Category VI protected areas conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.</p>	

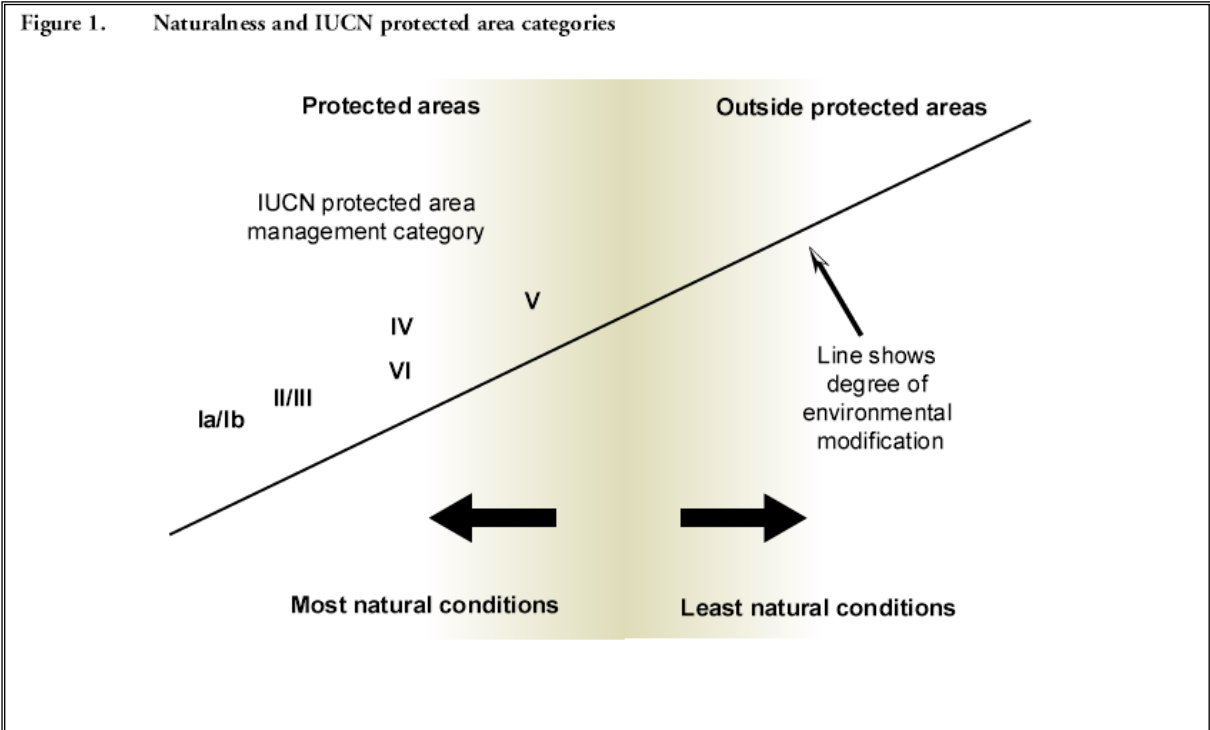
The categories do not imply a simple hierarchy, either in terms of quality and importance or in other ways. But nor are all categories equal in the sense that they will all be equally useful in any situation. One of the associated principles to the protected area definition states: *“All categories make a contribution to conservation but objectives should be chosen with respect to the particular situation”*.

Choice of categories can often be a complex challenge and should be guided by the needs and urgency of biodiversity conservation, the opportunities for delivery of ecosystems services, the needs, wants and beliefs of human communities, land ownership patterns, strength of governance and population levels. It is, however, an imperative that conservation objectives are given adequate attention and weight in decision-making processes.

Management approaches and categories are not necessarily fixed and can and do change if conditions change or if one approach is perceived to be failing; however changing the category of a protected area should be subject to procedures that are at least as rigorous as those involved in the establishment of the protected area and its category in the first place.

Many people assume that the categories imply a gradation in naturalness in order from I to VI but the reality is more complicated as shown in Figure 1 below, which attempts to compare average naturalness of all the categories.

Figure 1. Naturalness and IUCN protected area categories



BIBLIOGRAPHY

- Australia to 2050: future challenges, Commonwealth of Australia 2010
- Australian Treasury (2010) Intergenerational Report 2010 - ISBN 978-0-642-74576-7 at <http://www.treasury.gov.au/igr/igr2010/default.asp>
- Barker, Richard (2008). "The Natural Resource Potential of New Zealand", (March 2008).
- Brown Weiss, E (1989). "The Theory of Intergenerational Equity", Ch. 2 In *Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity*, The UN University Japan & Transnational, 414p, ISBN: 0941320545 OR ISBN-13: 9780941320542.
- Christie, M., Hanley, N., Warren, J., Murphy, K., Wright, R. & T. Hyde (2006). "Valuing the diversity of biodiversity", *Ecological Economics*, Vol. 58, pp. 304 – 317.
- De Groot, Rudolf., Wilson, M., & Boumans, R (2002). "A Typology for the classification, description and valuation of ecosystem functions, goods and services", *Ecological Economics*, Vol. 41, No. 3, pp. 393 – 408. ISSN 0921-8009.
- Department of Conservation (2006), "The value of conservation: What does conservation contribute to the economy?"
- Dryzek J S and David Schlosberg (eds.) (1998). *Debating the Earth: The environmental politics reader*,. Oxford UP, Oxford, xii+609p, ISBN 0 19 878 227 6.
- Dudley, N. (Editor) (2008). *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN. x + 86pp.
- Ecological Economics, Special issue: Environmental Accounting: Introducing the System of Integrated Environmental and Economic Accounting 2003—SEEA-2003 S.I. **vol. 61** (2007), pp. 589–724.
- Ecological Economics, Special issue: The Dynamics and Value of Ecosystem Services: Integrating Economic and Ecological Perspectives **vol. 41** (2002), 367–560.
- Farber, Daniel A. and Paul A. Hammersbaugh. (1993). "The shadow of the Future: Discount rates, later generations and the environment", *Vanderbilt Law Review*, 46: 267.
- Farley, J (2008). "Valuing Natural Capital: The Limits of Complex Valuation in Complex Systems Economics and Conservation in the Tropics: A Strategic Dialogue", January 31 – February 1, 2008.
- Fox, Warwick (1990). "The Most Widely Recognized Approaches to Ecophilosophy", Ch. 6 in *Towards a Transpersonal Ecology*. Shambala, Boston and London, 300p. ISBN 0877735336.
- Green W. and Clarkison, B. (2005). "Turning the tide? A review of the first five years of the New Zealand Biodiversity Strategy". The synthesis report.
- Harris, Jonathan M. (2006). *Environmental and Natural Resource Economics: A Contemporary Approach*. Houghton Mifflin, Boston & New York.
- Ministry for the Environment "Environment New Zealand 2007" ISBN 978-0-478-30191-5.
- Nash, Roderick F. (1989). "Ethical Extensionism and Radical Environmentalism" in *The Rights of Nature*. University of Wisconsin Press.
- Polasky, S., Cosetello C., and Solow, A. (2005) "The Economics of Biodiversity", chapt. 29 in Maler, K-G and Vincent, J. R. eds (2005) *Handbook of Environmental Economics*. Elsevier, Amsterdam, Vol 3 1517-1560, ISSN 1574-0099 DOI: 10.1016/S1574-0099(05)03029-9
- Secretariat of the Convention on Biological Diversity (2010) Global Biodiversity Outlook 3

– Executive Summary. Montreal.

Turner, R. Kerry, Pearce, David & Ian Bateman (1994). “Valuing concern for nature”, Chapter 8 in *Environmental Economics: An Elementary Introduction*, Harvester Wheatsheaf, Hertfordshire, pp. 108 – 128. ISBN 0-7450-1083-0.

Walsh, Richard G (1986). “Recreation Economic Decisions: Comparing benefits and Costs”. Venture, Colorado State University.

Watson, R. & Zakri, A.H. (co-chairs) (2005). “Living Beyond our Means: Natural Assets and Human Wellbeing”. *Millennium Ecosystem Assessment*. www.maweb.org. at: <http://www.millenniumassessment.org/documents/document.429.aspx.pdf>