

# Deep seabed mining

## *Frontier to oblivion!*

Mining the seabed is a new industrial frontier with destructive consequences for marine life, writes **DENNIS SMALL**. With the oceans already showing many signs of serious damage from current industrial activity, adding to the damage by intensively mining the seabed will take us further down the road of ecological disaster.

For all at last return to the sea – to Oceanus, the ocean river, like the ever-flowing stream of time, the beginning and the end. (*The Sea*, Rachel Carson, MacGibbon & Kee, 1964, p200)

In recent decades there have been basically two competing visions of a positive future for humanity: a global capitalist, technocratic one, and an ecologically-based, sustainable one. Another crucial dividing line has been reached, centred on the planet's ocean, the foundation of life. Nothing more epitomizes this dividing line than the perceived promise or threat of deep seabed mining, a supposed new "frontier." If the industrialization of the earth is to continue with the entrenchment of deep seabed mining, then humankind is certainly sealing its fate for the worst. We desperately need the application of a genuine economics revolution as outlined in the previous edition of *Pacific Ecologist*.<sup>1</sup>

### A sea of ignorance

A key environmental principle is the precautionary principle, i.e. being preventively proactive if current or proposed activities risk "high and irreversible" damage.<sup>2</sup> An early example of implementation of this principle is the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo Convention, 1972).<sup>3</sup> But no such set of effective protocols apply to an international regime for deep seabed mining. Such a regime could be administered by the International Seabed Authority (ISA) under the umbrella of the United Nations Convention on the Law of the Sea (UNCLOS) but this domain is still a minefield of uncertainty and controversy for a range of reasons.

The first experimental effort at deep seabed mining evoked an enthusiastic response about future prospects. It was carried out in 1978 in the Pacific some 1600 kilometres south-east of Hawaii. Engineered by the Ocean Management Inc (OMI) consortium, the

\$50 million venture netted 1000 tonnes of manganese nodules. A report claimed: "Perhaps an even bigger catch, however, was the clean bill of health the operation won from government scientists monitoring the environmental effects of scooping the potato-sized nodules from the ocean floor and shooting them up to the surface."<sup>4</sup> So far government agencies have dominated in exploring the feasibility of deep seabed mining. OMI was made up of agen-



cies from West Germany, Japan, Canada and the US. In later years, these countries have been joined by France, China, India, Russia, South Korea, and even an East European consortium. There are signs now of growing interest and involvement by Transnational Corporations (TNCs). Some privately funded ventures are already under way.

At the time of the OMI experiment, Dr Robert Burns of the US National Oceanic and Atmospheric Administration (NOAA) gave several revealing insights into the technocratic approach of the industry's drivers. Dr. Burns saw "no demonstrable connection upward from benthic [bottom living], deep-ocean floor fauna into that part of the marine fauna that we are concerned with, the fish we eat."<sup>5</sup> Burns also felt mining would be unlikely to really hurt "bottom critters" because so few populate the deep-sea floor. In light of today's more informed, yet still very limited knowledge, his views seem quite absurd.

He did express some suitably scientific reservations. While Dr. Burns gave the green light for mining, he did stress that long-term effects were unknown, for example, the fine particulate matter created in mining manganese might adversely affect filter feeders. Yet even his reservations sound rather quaint as well as disturbing. More research has demonstrated an ominous

and increasing list of dangers involved in this sort of mining.

Although there may be great uncertainty about the exact nature and extent of the impact of deep sea mining, there is no doubt there will be adverse effects on the marine environment. We can already see many adverse effects relating to oil and gas extraction and other mining on the continental shelf. The Gulf of Mexico ocean oil drilling disaster gave ample evidence of this in 2010, with its terrible

toll on countless thousands of birds and fish. A huge concern is the rapid decline in the health of coral reefs around the world, mainly due to global warming.<sup>6</sup> Back in 1971, ocean visionary Jacques-Yves Cousteau wrote of the Red Sea, comparing it with what he and his team had found in 1953. He noted the damage to coral: "If such destruction can take place in only a few years, then the future seems bleak indeed."<sup>7</sup>

As a very enclosed body of water, the Red Sea is a victim of severe pollution from oil drilling, seabed mining, tourist industry waste, etc. This and other areas point to accumulating impacts even then on the deep oceans. As Cousteau warned:

The vegetable life of the ocean provides a large part [about half] of the oxygen we breathe. If the sea is poisoned marine flora will disappear and with it will disappear a large part of the oxygen that is necessary to the survival of life on land.<sup>8</sup>

Increasing CO<sub>2</sub> is probably having a deleterious effect on the planktonic basis of marine life, as well as land life.<sup>9</sup> Adding deep-seabed mining to this growing global damage and pollution in the oceans would be ecologically disastrous and commit us to unsustainability on an ever greater scale.

Scientific evidence clearly indicates: "there is great potential for serious environmental impacts on the sea floor and at the depth zones from the discharge of mine tailings and effluent."<sup>10</sup> There could be very harmful benthic impacts from direct crushing of life forms and coverage with sediment, contrary to Dr. Burn's preliminary 1978 assessment. Some scientist estimate there is possibly up to 100 million species living on the ocean floor, as yet unknown to humanity.<sup>11</sup>

Impacts on pelagic [surface living] fish of water columns containing mining discharge materials were another concern Dr. Burns dismissed. Food chains could be disrupted, including the demise of zooplankton species. Oxygen might be depleted by bacterial growth on suspended particles, and heavy metals could be concentrated along marine food chains. There could even be reduction in primary productivity in oceanic ecosystems due to the shading of light, needed by phytoplankton, caused by mining discharges, coupled with detrimental concentrations of trace minerals.

### Pacific on the brink

In February 2011 the Pacific Network on Globalisation (PANG) alerted its network about a new deep seabed mining plan for the Pacific region. The four-year project, backed and funded by the European Union (EU), is intended to address the policy and law requirements of 15 island Pacific countries. Already, the Papua New Guinea government has committed itself to such a mining venture. Besides manganese nodules, two other types of resources have been identified in the Pacific for mineral prospecting and future exploitation: massive sea-floor sulphides and cobalt-rich crusts. All three types contain a variety of minerals, significantly and ironically enough often having military applications, as competition for resources heats up around the planet. The first regional workshop on the new plan is scheduled for Nadi, Fiji, in May this year 2011, again suitably under the auspices of an authoritarian military regime.

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Aotearoa/New Zealand is a Western-oriented country also looking to seabed mining in its waters, or what it claims as its own waters.<sup>12</sup> Some mainstream media acknowledge environmental risks, e.g. changing the geography of the ocean floor, and the “dramatic impact” on sea life from water columns or “plumes.”<sup>13</sup> It is even acknowledged that the oil and gas industry has a “poor” record. Currently, the Brazilian TNC Petrobras is the subject of protest from local Maori and Greenpeace as it conducts exploratory deep-sea seismic testing for oil and gas in the Raukumara Basin off the East Cape.

The Pacific Ocean is showing many signs of stress. In the northern Pacific, with mounting industrial pressures, “the East Asian sea, one of the richest, most diverse of the world’s ocean ecosystems, is a communal resource in much trouble.”<sup>14</sup> Safeguarding this sea, along with the Red Sea and other parts of the ocean, is going to take ongoing, enormous co-operative efforts. As Dr James Hansen, the world’s leading scientist on climate change observes: “It turns out the lion’s share of the excess incoming energy, about 90%, goes into the ocean.”<sup>15</sup> This is aggravating storms. Cyclone Yasi in February 2011 caused huge flooding in Queensland along with “serious damage to Australia’s Great Barrier Reef.”<sup>16</sup> Despite growing evidence of severe ocean disturbance, there are still technocratic fantasies about mining methane ice, i.e. the methane clathrates or methane hydrates on the ocean floor. Methane, of course, is a highly potent greenhouse gas. To think to mine methane is begging for trouble in the oceans already beset by so many problems from our industrial over-activity.

The trench-lines of debate are being drawn on the future of the world’s ocean, including in the Pacific.

The global economic system is geared for continuing growth and plunder at virtually any cost, with “democratic” debate often an empty ritual under TNC control in so called democratic, over-developed countries. Authoritarian governments, in some other countries do not have to bother with such posturing. Consequently, saving the oceans is going to take unprecedented efforts in the international struggle for survival and for a future worth living.

**Adding deep-seabed mining to this growing global damage and pollution in the oceans would be ecologically disastrous and commit us to unsustainability on an ever greater scale**

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