

**THE ASSOCIATION  
FOR THE STUDY OF PEAK OIL**  
“ASPO”

**NEWSLETTER No 22 – OCTOBER 2002**

**ASPO is a network of scientists, affiliated with European institutions and universities, having an interest in determining the date and impact of the peak and decline of the world's production of oil and gas, due to resource constraints.**

**It presently has members in: Austria, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Sweden and the United Kingdom**

***Mission:***

- 1. To evaluate the world's endowment of oil and gas;***
- 2. To model depletion, taking due account of economics, technology and politics;***
- 3. To raise awareness of the serious consequences for Mankind.***

***Newsletters on Websites***

This newsletter and past issues can be seen on the LBSYSTEMSTECHNIK website <http://www.energiekrise.de>  
(Press the ASPONews icon at the top of the page) and the ASPO website [www.isv.uu.se/iwood2002](http://www.isv.uu.se/iwood2002)

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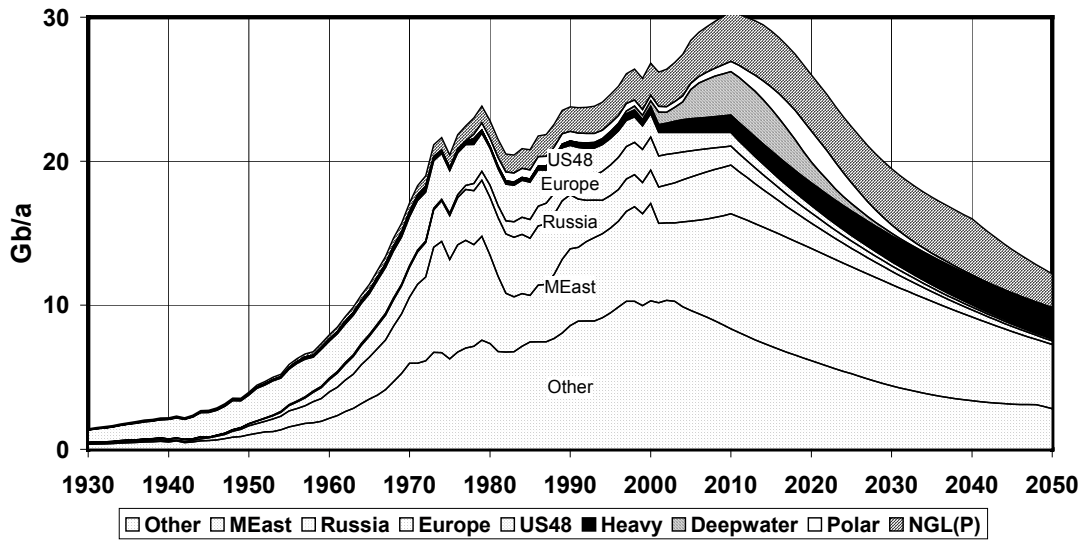
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***The new address is [aspoone@eircom.net](mailto:aspoone@eircom.net)***

*Frontispiece – the general depletion picture*

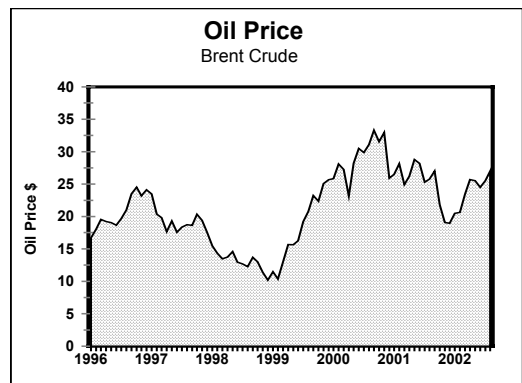
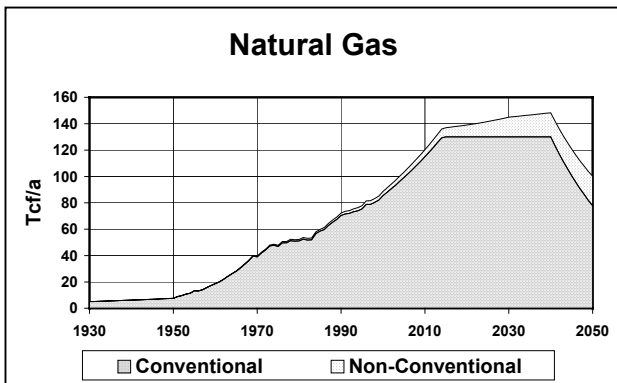
**Oil & Natural Gas Liquids  
2002 Base Case Scenario**



ESTIMATED CONVENTIONAL OIL PRODUCED TO 2075 IN			
Past	Future		Total
Known Fields	New Fields		
873	884	143	1900
ALL LIQUIDS			
958	1742		2700
In billion barrels (Gb) Status end 2001			

	PRODUCTION RATE FORECAST Mb/d				Status: end 2001
	2005	2010	2020	2050	Total to 2075
<i>Conventional Oil</i>	60	60	46	21	1900
US-48	3.5	2.6	1.4	0.2	195
Europe	4.9	3.6	1.9	0.3	75
Russia	8.4	9.2	4.8	0.7	200
M.East Gulf	17	22	21	12	750
Other	26	23	17	8	680
Heavy, bitumen etc	2.8	4	5	6	300
Deepwater (>500m)	5.6	8	4	0	65
Polar	1.2	2	6	0	30
Natural Gas Liquids	8.2	9	11	6	400
<b>Total</b>	<b>78</b>	<b>83</b>	<b>72</b>	<b>33</b>	<b>2700</b>

Base Case Scenario: flat demand for conventional oil due to recession; M.East swing role ending in 2010  
*Conventional Oil includes Condensate*



### 104 Reserve Classification

The American Association of Petroleum Geologists has published (Explorer, August 2002) the following reserve classification, which it says is being widely accepted by the industry. It errs on the side of caution for the purpose of depletion studies. *Proved Reserves* and even *Proved & Probable* under this definition would still give rise to “Reserve Growth”, in so far as the estimates relate to less than the full development of the field. We now prefer to avoid the term *Reserves* altogether, and speak of *best estimates of future production from known fields to 2075*. That would probably equate with *Proved+Probable+Possible*, and the *Best Estimate* of *Contingent*, such being either on production or subject to a planned development, as shown in the table. It also is misleading to show a single scale of risk for what has been found and what is yet to be found. But if reserves were consistently reported under this classification we would at least know what they meant. So, it is a step forward.

TOTAL INITIAL OIL-IN-PLACE	DISCOVERED INITIAL OIL-IN-PLACE	<b>PAST PRODUCTION</b>			High Risk-----Low Risk	
		<b>RESERVES</b>				
		Proved	Proved + Probable	Proved + Probable + Possible		On Production  Under Development  Planned Development
		<b>CONTINGENT RESOURCES</b>				
		Low Estimate	Best Estimate	High Estimate		Pending Development On-Hold Not-viable
		<b>UN-RECOVERABLE</b>				
		<b>PROSPECTIVE RESOURCES</b>				
		Low Estimate	Best Estimate	High Estimate		Prospect Lead
		< Range of Uncertainty >				Play

### 105- Biodiversity

Those concerned about the depletion of oil are often described as *Pessimists*, which is not a compliment, implying a degree of moral turpitude. The following article reports on the work of an eminent biologist, painting an even more depressing picture of a world of solitude after Man has destroyed all other life under flat-earth economic principles. Perhaps those concerned about the depletion of the world’s resources of energy will end up being reclassified as *Optimists* because without the power of oil, *Homo Sapiens* may after all be less able to secure his own extinction or loneliness.

John Gray is professor of European Thought at the London School of Economics

#### Will humanity be left home alone?

John Gray, New Statesman

According to Edward O Wilson, the greatest living Darwinian thinker, the earth is entering a new evolutionary era. We are on the brink of a great extinction the like of which has not been seen since the end of the Mesozoic Era, 65 million years ago, when the dinosaurs disappeared. Species are vanishing at a rate of a hundred to a thousand times faster than they did before the arrival of humans. On present trends, our children will be practically alone in the world. As Wilson has put it, humanity is leaving the Cenozoic, the age of mammals, and entering the Eremozoic - the era of solitude.

The last mass extinction has not yet been fully explained. Many scientists believe it to have been the result of meteorites whose impact suddenly altered the global climate, but no-one can be sure. In contrast, the cause of the present mass extinction is not in doubt: human expansion. Homo sapiens are gutting the earth of biodiversity.

The lush natural world in which humans evolved is being rapidly transformed into a largely prosthetic environment. Crucially, in any time span that is humanly relevant, this loss of biodiversity is irreversible. True, life on earth recovered its richness after the last great extinction; but only after about 10 million years had passed. Unless something occurs to disrupt the trends under way, all future generations of human beings will live in a world that is more impoverished biologically than it has been for eons.

Given the magnitude of this change, one would expect it to be at the center of public debate. In fact, it is very little discussed. Organizations such as the World Wildlife Fund press on with their invaluable work, and there are occasional reports of the destruction of wilderness; but for the most part, politics and media debates go on as if nothing is happening. There are many reasons for this peculiar state of affairs, including the ingrained human habit of denying danger until its impact is imminent; but the chief reason is that it has become fashionable to deny the reality of overpopulation.

In truth, the root cause of mass extinction is too many people. As Wilson puts it in his book *Consilience*: "Population growth can justly be called the monster on the land." Yet according to mainstream political parties and most environmental organizations, the despoliation of the environment is mainly the result of flaws in human institutions. If we are entering a desolate world, the reason is not that humans have become too numerous. It is because injustice prevents proper use of the earth's resources. There is no such thing as overpopulation.

Interestingly, this view is not accepted in many of the world's poor countries. China, India, Egypt and Iran all have population programs, as have many other developing nations. Opposition to population control is concentrated in rich parts of the world, notably the US, where the Bush administration pursues a fundamentalist vendetta against international agencies that provide family planning. It is understandable that rich countries should reject the idea of overpopulation. In their use of resources, they are themselves the most overpopulated. Their affluence depends on their appropriating a hugely disproportionate share of the world's non-renewable resources. If they ever face up to that reality, they will have to admit that their affluence is unsustainable.

Another reason for denying the reality of overpopulation is that the growth in human numbers is extremely uneven. In some parts of the world, population is actually declining. This is strikingly true in post-communist Russia. A precipitate fall in public health and living standards has led to a virtually unprecedented population collapse, which is set to accelerate further as an African-style AIDS die-off triggered by the country's enormous numbers of intravenous drug users begins to take hold. In other countries, such as Japan, Italy and Spain, declining fertility is leading to zero or negative population growth. Such examples have given currency to the silly notion that overpopulation is no longer an issue - that, if anything, it is a slowdown in population growth that we should be worrying about.

But while human numbers are falling in some parts of the world, in others they are exploding. The population of the Gulf States will double in around 20 years - against a background of nearly complete dependency on a single, depleting natural resource. Again, despite China's admirable one-child policy, its population will go on growing for much of this century. Globally, the human population will continue to rise for at least a century - even if worldwide fertility falls to replacement level tomorrow. In 1940, there were around two billion humans on the planet. Today, there are about six billion. Even on conservative projections, there will be nearly eight billion by 2050. Eight billion people cannot be maintained without desolating the earth. Today, everyone aspires to live after the fashion of the world's affluent minority. That requires worldwide industrialization - as a result of which the human ecological footprint on the earth will be deeper than it has ever been. If the living standards of rich countries can be replicated worldwide, it is only by making further large inroads into the planetary patrimony of biological wealth.

Rainforests are the last great reservoirs of biodiversity, but they will have to be cleared and turned over to human settlement or food production. What is left of wilderness in the world will be made over to green desert. This is a bleak enough prospect, but what's worse is that it is a path from which there is no turning back. If a human population of this size is to be kept in existence, it must exploit the planet's dwindling resources ever more intensively. In effect, humans will turn the planet into an extension of themselves. When they look about the world, they will find nothing but their own detritus.

There are many who claim to be unfazed by this hideous prospect. Marxists and free-market economists never tire of ridiculing the idea that other living things have intrinsic value. In their view, other species are just means to the satisfaction of human wants, and the earth itself is a site for the realization of human ambitions. These self-professed rationalists are prone to the conceit that theirs is a purely secular view of the world; but in thinking this way about the relationship of humans to the earth, they are in the grip of a religious dogma. The belief that the earth belongs to humans is a residue of theism.

For Christians, humans are unique among animals because they alone are created in the image of God. For the same reason, they are uniquely valuable. It follows that humanity can behave as lord of creation, treating the earth's natural wealth and other animals as tools, mere instruments for the achievement of human purposes.

To my mind, such religious beliefs have caused an immense amount of harm, but at least they are coherent. It is perfectly reasonable to think humans are the only source of value in the scheme of things - so long as you retain the theological framework in which they are held to be categorically different from all other animals. But once you have given up theism, this sort of anthropocentrism makes no sense. Outside the Judaeo-Christian tradition, it is practically unknown. The view of things in which we are separate from the rest of nature and can live with minimal concern for the biosphere is not a conclusion of rational inquiry. It is an inheritance from a single, humanly aberrant religious tradition.

The fashionable belief that there is no such thing as overpopulation is part of an anthropocentric worldview that has nothing to do with science. At the same time, there is more than a hint of anthropocentrism in Wilson's suggestion that we are entering an age of solitude. The idea that, unlike any other animal, humans can take the planet into a new evolutionary era assumes that the earth will patiently submit to their inordinate demands. Yet there is already evidence that human activity is altering the balance of the global climate - and in ways that are unlikely to be comfortable for the human population. The long-term effects of global warming cannot be known with any certainty. But in a worst-case scenario that is being taken increasingly seriously, the greenhouse effect could wipe out densely populated coastal countries such as Bangladesh within the present century, while seriously dislocating food production elsewhere in the world.

The result could be a disaster for billions of people. The idea that we are entering an era of solitude makes sense only if it is assumed that such a world would be stable - and hospitable to humans. Yet we know that the closer an ecosystem comes to being a monoculture, the more fragile it becomes. The world's rainforests are part of the earth's self-regulatory system. As James Lovelock has observed, they sweat to keep us cool. With their disappearance, we will be increasingly at risk. A humanly overcrowded world that has been denuded of much of its biodiversity will be extremely fragile - far more vulnerable to large, destabilizing accidents than the complex biosphere we have inherited. Such a world is too delicate to last for long. There are good reasons for thinking that an era of solitude will not come about at all. Lovelock has written that the human species is now so numerous that it constitutes a serious planetary malady. The earth is suffering from disseminated primatemaia - a plague of people. He sees four possible outcomes of the people plague: "destruction of the invading disease organisms; chronic infection; destruction of the host; or symbiosis, a lasting relationship of mutual benefit to the host and the invader".

The last two can be definitely ruled out. Humankind cannot destroy its planetary host. The earth is much older and stronger than humans will ever be. At the same time, humans will never initiate a relationship of mutually beneficial symbiosis with it. The advance of *Homo sapiens* has always gone with the destruction of other species and ecological devastation. Of the remaining outcomes, the second - in which over-numerous humans colonize the earth at the cost of weakening the biosphere - corresponds most closely to Wilson's bleak vision. But it is the first that is most likely. The present spike in human numbers will not last.

If it is not forestalled by changes in the planet's climate, we can be pretty sure that Wilson's era of solitude will be derailed by the side effects of human strife. **Resource scarcity is already emerging as a factor aggravating tension in several regions of the world.** In the coming century, it is set to be one of the primary causes of war. A world of eight billion people competing for vital necessities is highly unlikely to be at peace. On the contrary, it is programmed for endemic conflict. New technologies may blunt the edge of scarcity by allowing resources to be extracted and used more efficiently. But their key use will be to secure control over dwindling supplies of oil, natural gas, water and other essential inputs of industrial society.

The internet originated in the military sector. Information technology is at the heart of the revolution in military affairs that is changing the face of war by powering the new generations of computer-guided missiles, unmanned planes and the like. Only a couple of years ago, a host of air-headed publicists was proclaiming the arrival of a weightless world. The reality is just the opposite. The Gulf war was won with computers, and they will be critically important in any attack on Iraq. In that sense, it is true that information technology will be the basis of prosperity in the 21st century. But its main contribution will not be to create a hypermodern, knowledge-driven economy. It will be to enable advanced industrial

states to retain control of the most ancient sources of wealth -the world's shrinking supplies of non-renewable resources.

In the past, war has rarely resulted in a long-lasting decline in human numbers. But in a highly globalised world, it could have a new and more devastating impact. With a hugely increased population reliant on far-flung supply networks, large-scale war in the 21st century could do what it has frequently done in the past: trigger food shortages, even famine. Globalization no more engenders world peace than it guarantees an unending boom. It simply magnifies instability.

Summing up his view of the future, Wilson writes: "At best, an environmental bottleneck is coming in the 21st century. It will cause the unfolding of a new kind of driven by environmental change. Or perhaps an unfolding on a global scale of the old kind of history, which saw the collapse of regional civilizations, going back to the earliest in history, in northern Mesopotamia, and subsequently Egypt, then the Mayan and many others scattered across all the inhabited continents except Australia." Wilson's "new kind of history" would involve a worldwide revolution in attitudes and policies. This would include universal access by women to the means of controlling their fertility, abandonment of the belief that there is a natural right to have as many children as you like, and a basic shift in attitudes to the environment in which it is accepted that our fate and that of the rest of life on earth are inseparably linked. These are the minimum conditions for the new kind of history of which Wilson writes. Unfortunately, one has only to list these conditions to see that they are unrealizable. There cannot be a sustainable balance between natural resources and human needs so long as the number of people continues to increase, but a growing population can be seen as a weapon. Many Palestinians and Kurds view having large families as a survival strategy. In a world containing many intractable ethnic conflicts, there is unlikely to be a benign demographic transition to a lower birth rate.

The examples we have of societies in which population has declined in the absence of a big social crisis cannot be replicated worldwide. A policy of zero population growth requires universal availability of contraception and abortion, and limits on the freedom to breed; but the authority that could impose these conditions does not exist. Humans have a long history of mass killing, but have rarely chosen to regulate their numbers intelligently and humanely. If population declines, it will be as a result of war, genocide or the kind of generalized social collapse that has taken place in post-communist Russia. The increase in human population that is under way is unprecedented and unsustainable. It cannot be projected into the future. More than likely, it will be cut short by the classical Malthusian forces of "old history". From a human point of view, this is an extremely discomfoting prospect; but at least it dispels the nightmare of an age of solitude. The loss of biodiversity is real, and very often irreversible. But we need not fear a world made desolate by human proliferation. We can rely on *Homo sapiens* to spare us that fate.

### ***106. Country Assessment Series - Venezuela***

Venezuela is a very beautiful country with a diverse terrain. In the south, lie the tropical rain forests of the the high Roraima hinterland and the Orinoco River basin, passing westwards into the grasslands of the Llanos. Several spectacular Andean ranges, capped by Pico Bolivar, at an altitude of 5007m., follow to the north, before giving way to the badlands of Falcon and the deserts of Paraguana, complete with sand dunes and cactus. To the West, lies Maracaibo, an inland shallow sea, while to the East is the Orinoco delta and the Gulf of Paria, which separates Venezuela from Trinidad.

Little is known about its early history before it was sighted by Christopher Columbus in 1498 on his third voyage to the New World. Spanish settlement began in 1520, when Caracas, the capital, was founded in an Andean valley, being administered jointly until 1819 by the Spanish Vice-Royalty of Peru and the Audencia of Santo Domingo. Caracas was the birthplace of Simon Bolivar, known as the Liberator of South America, who, after several years of struggle, achieved independence for Venezuela in 1829, only to die in the following year, a disillusioned man, with his notion of a united Latin America having been destroyed by factional disputes.

The subsequent history has been characterised by revolution, counter-revolution, and dictatorship, interspersed by brief periods of not very successful democratic government. The population amounts to some 25 million, mainly living in the Andean and coastal regions, who are predominantly of mixed European and Negro extraction.

Venezuela has rich natural resources, with substantial iron-ore deposits in the interior, in addition to its ample oil endowment.

The Pitch Lake of Trinidad, which has been known since 1595, attracted early interest to the island's oil potential. The first successful wells were drilled there in 1866, only seven years after Colonel Drake's drilled his

famous discovery in Pennsylvania, which is generally held to be the start of the modern oil industry. The early explorers looked across the limpid waters of the Gulf of Paria to wonder what Venezuela might offer, as it too had a pitch lake. The first well was in fact drilled in 1878 to the south of Lake Maracaibo, but it was not until 1907 that local interest started securing concessions, which eventually passed into the hands of the foreign companies. They began exploration in earnest in the years preceding the First World War. Shell Oil was one of the pioneers, being introduced to the country by no less than the legendary Armenian oilman, Calouste Gulbenkian, who probably understood how to deal with the current dictator, General Gomez. Their pioneering efforts were rewarded when a well on the La Rosa Field on the shores of Lake Maracaibo blew out with a flow rate of over 100 000 b/d, having penetrated a highly fractured Cretaceous limestone reservoir. Standard Oil of Indiana (Amoco) also had substantial early rights to Lake Maracaibo, but its Mid-West management in Chicago got cold feet for foreign ventures after expropriations in Mexico in the 1930s, selling out to Exxon in exchange for a block of its stock. Gulf Oil of Pittsburgh was the third principal operator. Venezuela was for many years the jewel in Shell's crown, which by 1932 had made it Britain's largest supplier. The industry went from strength to strength between and immediately after the two world wars, with production rising from 300,000 barrels a day in 1930 to two million by the mid-1970s.

The expropriation of BP's Iranian interests in 1951 did not pass un-noticed in Caracas, where the government was already in conflict with the companies over the split of oil revenues. It led Perez Alonso, the oil minister, to open discussions with the major Middle East producers, to try to form a world equivalent of the Texas Railroad Commission, which had successfully regulated US over-production to support price. He eventually succeeded with the formation of OPEC in 1960. The government started passing laws qualifying the existing concessions, which paved the way for a full nationalisation in 1976, and the creation of a national company, Petroleos de Venezuela. By now, exploration was at a mature stage, so the main challenge became to develop the extensive heavy oil deposits that had long been known, and to work in the corridors of power at OPEC to obtain the best price.

Venezuela's great oil wealth springs from a happy circumstance, some 90 million years ago, when the continents of North and South America began to move apart at a time of intense global warming. Algal growths proliferated, poisoning the seas and giving rise to vast quantities of organic material that sank to the stagnant depth of the opening rifts. With later burial, it formed the *La Luna Formation*, a black shale with large ellipsoidal calcareous, known to early geologists as "wagon wheels". It is one of the world's richest hydrocarbon source rocks, also responsible for oil in Mexico and the Gulf Coast of the USA.

In structural terms, a branch of the Andes divided the country into two provinces: the Maracaibo Basin in the West, and the Eastern Venezuela Basin in the East, both of which are prolific oil producers from the same source. The oil has accumulated both in Cretaceous limestones in juxtaposition with the source rocks, and in overlying Tertiary sandstones. The East Venezuela Basin is asymmetrical with a long, gently-dipping, southern flank. Oil has migrated up this flank to shallow depths where it has been weathered and affected by bacterial action, giving rise to the extensive heavy oil and bitumen deposits at depths of 500 to 1500 m along the Orinoco River.

Lake Maracaibo has been subsiding with the extraction of oil, which led the oil companies to build an earth dyke to protect the growing population of the area around Lagunillas, which is sinking below sea-level. Consulting engineers reported that it was safe enough unless there was a major earthquake, when the pebbles in the dyke would flow like marbles. When asked about that risk, they reported that the greatest danger came from transcurrent faults. The oil companies whereupon sponsored research to show that the major faults crossing Maracaibo, which had the hallmarks of lateral movement, had been long dormant, with only minor vertical displacements. They were dismayed when a young geologist published a paper on the Santa Marta Fault in neighbouring Colombia with a recent lateral offset of 116 km. (Campbell C.J. 1965, *The Santa Marta wrench fault of Colombia and its regional setting*; 4<sup>th</sup> Carib. Geol. Conf), and went to considerable lengths to try to discredit it. Transcurrent faulting in Venezuela has since been established beyond doubt, making this a catastrophe waiting to happen, but following nationalisation, the foreign oil companies no longer have responsibility for the fate of the many people living below sea-level in Lagunillas.

So far as new discovery is concerned, Venezuela has to rely primarily on tail-end work in the existing producing basins, finding small traps and secondary reservoirs. But there is some chance of deep gas-condensate to the south of Lake Maracaibo in the foothills of the Merida Andes; and in the depths of the East Venezuelan Basin. There is also some possibility of new discovery of mainly gas on the Venezuelan side of the Gulf of Paria and on the shelf to the south, depending on whether the Cretaceous source rocks extend south of the latitude of the Orinoco, which is rather unlikely. Another new opportunity is for gas in rifts off the northern coast, one of which has been found to be productive.

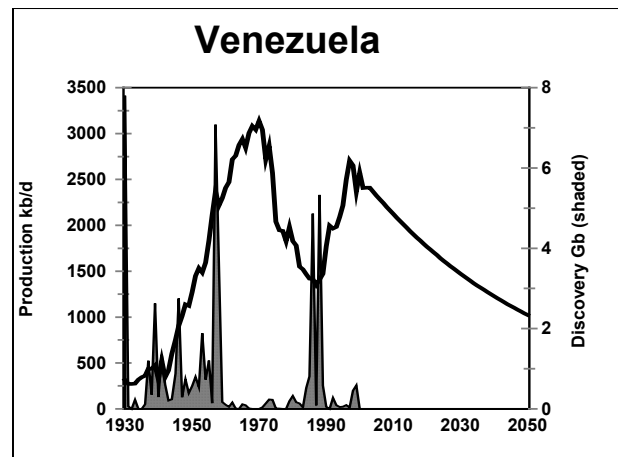
The main potential is for the development of *Non-Conventional* heavy oil along the southern flank of the East Venezuela basin. The country defines heavy oil at a cutoff of 22° API, far above the 17.5° API used in these studies, which distorts both past production and reported reserves. It is here assumed that about 15% of past production was heavy oil, and that past production has to be reduced proportionately. It is more difficult to know how to treat reserves. Reported reserves grew from 18 Gb in 1980 to 25 Gb in 1985, when they more than doubled overnight to 56 Gb. It seems that the Eastern Division of the new State oil company decided to include large amounts of long known heavy oil in the reserve base, which had the, not necessarily intended, effect of increasing Venezuela's OPEC quota, causing massive retaliation by other OPEC countries to protect their quota. Venezuela currently reports remaining reserves of 78 Gb, which seems excessive, given that the ultimate recovery of the giant fields, listed below, totals only 60 Gb. Past adjusted production amounts to about 45 Gb. Accordingly, the country's remaining reserves of oil lighter than 17.5° API are here generously estimated at 43 Gb.

Field	Disc.	Gb	Field	Disc.	Gb	Field	Disc.	Gb
Lagunillas*	1926	14	Centro	1957	2	Tejaro	1988	0.75
Bachequero*	1930	8	Lamar	1958	1.75	Ceuta SSE*	1985	0.75
Tia Juana*	1928	5	Ceuta*	1957	1.5	Santa Rosa	1941	0.75
Carito	1988	4.5	Ceuta-Tomo*	1986	1.5	Mene Grande	1914	0.75
Lama*	1957	4	Lago	1958	1.25	Jobo	1953	0.75
Furrial	1986	3.5	Quiriquie	1928	1	Oficina	1937	0.5
Boscan	1946	2.5	La Paz	1924	1	Mata	1951	0.5
Pueblo Viejo*	1939	2	Cabimas*	1917	0.75	Mara	1945	0.5

\* Part of the super-giant Bolivar Coastal Field complex, found in 1917.

As already mentioned, the East Venezuela Basin has substantial reserves of *Non-Conventional* heavy oil, lying at depths of between 500 and 1500m. The traditional method of extraction involved drilling patterns of five closely spaced wells. Steam was then pumped into the peripheral wells to mobilize the heavy oil and drive it to a central producing wells. Long reach horizontal wells are now being used to good effect, managing to extract the oil without steam stimulation. Six projects, involving an investment of some \$13 billion, currently produce about 500 000 kb/d. Further efforts may lift production to a plateau of about double that amount by 2005, which could possibly last for 10-20 years, but considerable uncertainties remain as to whether the projects will attract the necessary investment in the face of world recession and political tension. (The following depletion plot refers to Conventional oil [ $>17.5^{\circ}$  API] only. Note also that much of its oil was found before 1930)

Venezuela – Conventional		
<i>Rates Mb/d</i>		
Consumption	2001	0.49
Production	2001	2.4
	Forecast 2010	2.1
	Forecast 2020	1.8
Discovery 5-year average (Gb)		0.1
<i>Amounts Gb</i>		
Past Production		45
Reported <i>Proved Reserves</i>		78
Estimated Future Production to 2075		
From Known Fields		43
From New Fields		6.7
Future Total		50
Total Production to 2075		95
Current Depletion Rate		1.7%
Depletion Midpoint Date		2003
Peak Discovery Date		1941
Peak Production Date		1970



Venezuela can evidently remain an important exporter of oil, especially to the United States, for many years to come, which exposes it to a certain political pressure, as has already been manifested. Its gas resources are under-exploited, but may not be as large as has been suggested. In any event, it would be natural to use them as a domestic source of energy.

The present President, Hugo Chavez, is an ex-paratrooper who came to power in a landslide election in 1998, and follows a long tradition of dictatorial rulers. Venezuela, like many countries, is ruled by a wealthy elite of so-called oligarchs, many of whom, no doubt, shift their wealth overseas, leaving the poor with a minor share of

the country's great oil wealth. President Chavez has tried to change this relationship with a decidedly anti-globalist policy, having made well-publicised visits to Cuba and Iraq. He was almost ousted from power earlier this year in a coup, which was welcomed, if not orchestrated, by the United States, but he outwitted the conspirators. No doubt, further attempts to remove him will be made, despite his popular mandate, especially as his influence extends beyond his country, as he is a strong voice with the councils of OPEC, whose Secretary-General was until recently a Venezuelan, Ali Rodriguez-Araque.

It is doubtful if Venezuela has any significant spare capacity at the present time, so its production is set to decline at about the current depletion rate of 1.75%, a relatively low one. It has every good reason to see OPEC hold or reduce production, making the country's future production ever more valuable. The President has no good reason to meet US demands for cheap oil, and, as an ex-paratrooper, may not be easily cowed into submission.

### ***107. "Oil and politics are never far apart" - Afghanistan***

The primary mission of this newsletter is to disseminate information about the depletion of oil and gas, but it inevitably finds itself heading into more sensitive territory when it finds that political as much as physical factors are at work.. In the same way as blood-tests are critical to most medical diagnosis, so the condition of the world economy and its geopolitics, is revealed by oil, its life-blood. One such test on the Afghan War, which now passes into history without notable outcome, is provided on the following site:

<http://www.wsws.org/articles/2002/sep2002/oil1-s20.shtml>

It is followed by another commentary by no less than Newsweek, which carries an article entitled *Iraq: It's the Oil, Stupid*. It is partly based on an interview with a reader of this Newsletter

[http://www.msnbc.com/modules/exports/ct\\_email.asp?/news/811049.asp](http://www.msnbc.com/modules/exports/ct_email.asp?/news/811049.asp)

### ***108 New ASPO Member***

We are pleased to welcome Dr Ugo Bardi of Florence University as a new full member of ASPO.

The Newsletter very much welcomes contributions from ASPO members and other readers, who may wish to draw attention to items of interest or the progress of their own research.

*Compiled by C.J.Campbell, Staball Hill, Ballydehob, Co. Cork, Ireland*