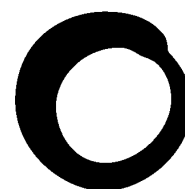




Marine Information Network
www.marinet.org.uk



**Friends of
the Earth**

**Report on OSPAR Ministerial Conference,
Bergen, Norway, 20th to 24th September 2010.**

Report for MARINET Members.

We have provided a report on the proceedings of the OSPAR Ministerial Conference based on the Ministerial Statement, and this has been placed on our website. However, we also wish to provide MARINET members with a more candid assessment of the conference based on what OSPAR has achieved over the last 10 years, what it is likely to achieve during the forthcoming 10 years, and the constraints under which it labours i.e. its limitations. This report is therefore designed to give you greater insight to the realities governing the protection of the North East Atlantic at the present time.

The Nature of OSPAR.

OSPAR is an inter-governmental Convention [Oslo-Paris Convention], with a Commission and secretariat (based in London) whose brief is the protection of the North East Atlantic. In a sense therefore, there is the perception that the UK is able to “direct” the functioning of OSPAR, although such a reality would never be openly admitted by any of the parties involved.

OSPAR consists of those countries which border the NE Atlantic or who have a direct interest or influence over its condition. They are: Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

In 2010 OSPAR has adopted the vision of the EU Marine Strategy Framework Directive which states that “we share the vision of a clean, healthy and biologically diverse North-East Atlantic ocean, used sustainably”. OSPAR has committed itself to assist in the implementation of the EU Marine Strategy Framework Directive (MSFD) whose quality standards become binding in 2020. As a result, this will be a test of the “independence” of OSPAR because there is a strong perception that certain EU members will want to dilute these MSFD quality standards because of the onerous obligations that restoration to these quality standards will place upon them (e.g. restoration of fish stocks, cessation of the discharge of hazardous substances, and elimination of practices leading to eutrophication) – see the full list of the quality standards in Annex I of the MSFD <http://www.marinet.org.uk/marinebill/euframeworkdirective.pdf>. Thus OSPAR will need to ensure that these quality standards are not diluted. This will be a serious test for OSPAR, both in terms of its scientific objectivity and its political effectiveness.

OSPAR’s principal activities are based on committees within a framework which monitors and assesses the condition of the NE Atlantic, and seeks to influence the regulation of the polluting practices which occur, either relating to specific industries (i.e. oil and gas installations,

nuclear power) or in a more general sense (i.e. eutrophication and its causes, hazardous substances and their impact). Arising from this, OSPAR produces a Quality Status Report (QSR) which seeks, scientifically, to record the condition of the NE Atlantic. It produced such a report in 2000, known as QSR 2000. Ten years on, it has produced a new report for the 2010 Ministerial Conference - QSR 2010, see http://qsr2010.ospar.org/en/terms_of_use.html – which seeks to record the progress made over the last ten years since 2000 and the challenges which lie ahead over the next ten years to 2020. This is an important document which sets a scientific benchmark in measuring the condition and quality of the NE Atlantic. It is important that it is accurate, and we give further consideration to this particular issue below.

In pursuing its work, and in taking decisions relating to its work, OSPAR works on the basis of consensus. This means that all member countries must be agreed on a course of action before OSPAR itself and its committees can act. As a result, this is governance based on the lowest common denominator. Consequently OSPAR's ability to work is slowed down by this decision-making process, and ambition is very readily constrained by any member who objects. The only virtue of this process is that when something is agreed it can be pursued with a depth of unanimity.

Certain countries stand out as being particularly ambitious in implementing marine policy, the most notable of which is Germany. Certain countries stand out as being particularly cautious, the most notable of which is the United Kingdom.

The main areas of OSPAR's work.

The main products of OSPAR's work are two fold.

Firstly, it can formulate thinking as to what should be the overarching principles determining marine management in the NE Atlantic. To its credit, OSPAR has established via its 2010 Ministerial Statement, the ecosystem-based approach as the central idea and overarching objective of marine management. To its detriment, OSPAR has allowed a definition of the ecosystem-based approach to be adopted which all too readily permits the interests of industrial and commercial uses of the sea to prevail over the integrity and intrinsic needs of the sea and its ecosystem.

This is exemplified by a particular management approach which fails to adequately recognise that the source of all human wealth from the sea is based, before all else, on the well-being of the sea's ecosystems – for example, there is no point in allowing a particular commercial fishing practice to persist (e.g. fishing for cod in the North Sea) if that practice (overfishing and destructive trawling of the seabed) destroys the fish stock, its habitat, and the food-web which sustains it. In other words, in the three pillared definition of sustainability- social, economic and conservation – the continued operation of the North Sea cod fishery at the present time (when the stock is beyond its safe biological [reproductive] limit and is still being fished) means that economic and social interests have trumped the conservation interests when, in reality, it is conservation interests which clearly need to have primacy.

The OSPAR definition of the ecosystem-based approach is: *“the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.”*

MARINET has recommended a stronger definition of the ecosystem-based approach to OSPAR, see <http://www.marinet.org.uk/eatmm/definition.pdf> . The danger of the OSPAR definition is that it defines the ecosystem-based approach as “adaptive management” – in other words, only modifying human activities when scientific evidence becomes available which shows the adverse effect of those activities on the marine ecosystem. The stronger definition advanced by MARINET argues that ecosystem integrity itself must at all times have primacy in this management approach, and that human activities must be licensed only when its can be shown that their impact is not adverse and, where doubt exists as to the nature of the impact, the precautionary principle should apply. Further, the ecosystem-based approach requires proactive action, which in turn means that management practices such as marine reserves should be established and deployed to actively protect not just key features of the marine ecosystem, but also the sound functioning of the marine ecosystem as a whole (ecosystem integrity).

MARINET would therefore prefer a definition of the ecosystem-based approach which *“recognises that we cannot manage the marine ecosystem itself, but only the human activities which impact on that ecosystem. Therefore, given this precondition, the management regime must recognise the primacy of ecosystem integrity in order to preserve the sustainability of environmental resources for human use, and must act not only to prevent and eliminate adverse human impacts but also pursue management practices, such as marine reserves, the precautionary principle and scientifically-based ecological quality objectives, in order to promote and maintain ecosystem integrity.”*

It is MARINET’s belief that only when the marine ecosystem itself is given primacy, and not human activities, will the NE Atlantic be restored to health and be able to deliver and meet our needs on a sustainable basis.

The concept of primacy for the marine ecosystem is key – in other words, the *sovereignty* of the NE Atlantic marine ecosystem is recognised as belonging to the ecosystem itself, and the definition of what is in its best interests does not rest solely in *our* hands. Only then, when we accept the primacy of ecosystem integrity, will we have ceased playing around with definitions of sustainability which are simply different ways of carrying on “business as usual” (i.e. exploitation leading to ecosystem decline and, eventually, collapse); and, instead, we will have adopted a management regime that is genuinely sustainable, and can be measured as being so by clear evidence of ecosystem restoration and the long-term maintenance of biodiversity and ecosystem services for human use.

At present, OSPAR remains a long way distant from this kind of thinking.

The second main area of OSPAR’s work relates to its assessment and monitoring, by scientific means, of the condition of the NE Atlantic, and thus the recommendation (sometimes formulation) of actions needed to maintain and, all too commonly, restore the ocean to a sound, natural condition.

This work is undertaken by OSPAR’s committees, and the work areas upon which its committees are based are:

- Environmental Assessment and Monitoring
- Biodiversity
- Eutrophication
- Hazardous Substances
- Offshore Industries
- Radioactive Substances
- Climate Change

Each of the OSPAR committees/working groups contributes to the overall work of the Commission, and the effectiveness of their work and the condition of the NE Atlantic is assessed collectively by them every ten years by means an overall OSPAR Quality Status Report (QSR) – the current version being QSR 2010 http://qsr2010.ospar.org/en/terms_of_use.html .

It is highly recommended that you visit QSR 2010. It contains a great deal of useful information and is an insightful portrait of the condition of the NE Atlantic.

However, the key question from our perspective is whether the story and portrait painted by the Quality Status Report is accurate. In other words, does it record the full measure of reality, or is it understating the problems and issues? This is an important question, as is the answer, because if understatement does exist then policy makers at senior government level are being misinformed and, consequently, the wrong or inadequate decisions will be taken at the political level for the restoration and protection of the marine ecosystem in the NE Atlantic.

In respect of **Climate Change**, the OSPAR summary in QSR 2010 states: “*Impacts of climate change are now becoming evident, especially in the northern Regions (I and II) [Arctic Waters and North Sea]. While the nature and rate of these impacts are uncertain, rising sea temperature and increasing acidification represent major threats to marine ecosystems in the OSPAR area. Mitigation and adaptation are a necessity and will alter human activities and their pressures on the sea.*” The OSPAR report on Climate Change is good. Reading is recommended.

The QSR recommends: “*that OSPAR cooperates internationally to monitor the effects of climate change and ocean acidification, and to help develop marine policies that encourage mitigation of climate change and acidification. Where possible, policies should also facilitate adaption.*”

MARINET observes: the role of OSPAR in monitoring climate change impacts is appropriate and essential. However the power of OSPAR to influence global action is slight and, essentially, any serious hope of policy formulation by OSPAR to halt ocean acidification and the other ocean-wide effects of climate change is remote. To convey any other reality would be false.

In respect of **Eutrophication**¹, the OSPAR summary in QSR 2010 states: “*Eutrophication is still a problem in Region II [North Sea], Region III [Celtic Seas] and Region IV [Bay of Biscay and Iberian Coast] and the objective of no eutrophication will only be partly achieved by 2010. Reductions in phosphorus discharges exceed the OSPAR target of 50% compared to 1985, but nitrogen discharges are still the main problem, especially those from agriculture. Concern about atmospheric nitrogen inputs is increasing. It can take decades for reduction measures to have positive effects in the sea because nutrients are released from soils and sediments.*”

In actuality, the level of eutrophication in parts of the North Sea region remains severe. Action to resolve these issues in the North Sea and elsewhere rests with the member countries of OSPAR, rather than OSPAR itself (which has no executive authority). OSPAR has measured and reported upon the failure to defeat the threat to the marine environment from eutrophication and is involved in a role of exhortation, rather than intervention, and therefore the prospect for the elimination of eutrophication in the regional seas of the NE Atlantic by 2020 looks very remote.

¹ Eutrophication is a state where the sea becomes deprived of dissolved oxygen, thus causing asphyxiation of all creatures and, thereby, the creation of a dead, anoxic body of water. It is caused by excess nutrients (phosphorous and nitrogen) entering the water. These nutrients cause algae to multiply rapidly and go into a population explosion (algal bloom). As these algae die, they sink to the seabed where they are digested by oxygen-using bacteria. The bacteria experience a population explosion, consuming all the dissolved oxygen, thus causing the eutrophic state in the sea.

The QSR recommends: “*setting targets to reduce nutrient inputs to individual problem areas and urgently implementing existing measures to implement them.*”

MARINET observes: all OSPAR can do is urge member countries to act, and report on whatever actions are taken and their impact on the problem. In truth, OSPAR is toothless to solve this problem unless the will to solve the problem exists within OSPAR members themselves. So far, that will has been faint-hearted. Thus OSPAR’s targets are aspirational rather than definite.

A clear example of this situation and failure to make progress is the Wadden Sea, which is a World Heritage Site for its wildlife and exceptional biodiversity and located off the Dutch, German and Danish coast. It is plagued by eutrophication. It is the rivers flowing into the Wadden Sea which are by far the largest carriers of the polluting substances, originating from agricultural and industrial practices upstream. The German rivers Elbe, Weser and Ems, together with the Dutch IJsselmeer, discharge each year on average 60 km³ of polluted water into the Wadden Sea. In addition a substantial part of the Rhine water enters the Wadden Sea via the North Sea through a coastal flow along the Dutch coast. These rivers transport heavy metals, PCBs, pesticides like lindane and large amounts of nutrients.

It is to be noted, ironically perhaps, that Germany and Holland are amongst the most proactive members of OSPAR. However their actions do not wholly measure up to their words, and this is a common fault-line that runs through all the work of OSPAR. It is not the actual fault of OSPAR – indeed OSPAR is a unique instrument, if it did not exist it would urgently have to be created – but rather the fault of its member countries. It must always be remembered that the power and the true ability to effect change lies with the member countries of OSPAR, and not OSPAR itself.

In respect of **Hazardous Substances**, the OSPAR summary in QSR 2010 states: “*A third of OSPAR priority chemicals are expected to be phased out in the OSPAR area by 2020 if current efforts continue. Environmental concentrations of monitored chemicals have generally fallen, but are still above acceptable concentrations in many coastal areas of Regions II, III and IV [North Sea, Celtic Seas, Bay of Biscay and the Iberian Coast]. Contamination with persistent organic pollutants is widespread and their long-range air transport to the OSPAR area, especially Region I [Arctic Waters], is of concern. Historic pollution in aquatic sediments acts as a continued source for releases of persistent contaminants.*”

This is a serious area of pollution, and concern. Levels of toxic materials in marine life and sediments are widespread, as much due to historic discharges as current practices. Not only are these levels causing serious injury to marine life in all its forms, but these chemicals are present in fish and shellfish being harvested for human consumption.

The QSR recommends: “*continued abatement [of hazardous substances] at source, further promotion of global controls on POPs [Persistent Organic Pollutants] and mercury emissions, and improving knowledge of hazardous substances and their biological effects.*”

MARINET observes: OSPAR, certainly through public statements at the Ministerial Conference in Bergen, is giving the impression that the situation with regard to Hazardous Substances is “under control”. However, closer examination of the facts in the Chapter on Hazardous Substances in QSR 2010 reveals some very worrying facts. We cite two examples.

Firstly, OSPAR states in its summary above “*A third of OSPAR priority chemicals are expected to be phased out in the OSPAR area by 2020 if current efforts continue.*” This sounds encouraging, even if one may protest a little at the lack of ambition - both in terms of the

proportion of chemicals to be phased out and the urgency. However, the reality is that of the 29 OSPAR Priority Chemicals for elimination (priority due to their extreme toxicity, see Table 5.1), 16 of these priority chemicals will not be eliminated by 2020, 3 occupy a status where their elimination by 2020 is “unknown”, and the status of the other 10 chemicals - which it is claimed will be eliminated - is so uncertain that OSPAR lists the “confidence in their elimination as low”.

Thus, the reality is **not** one of convincing improvement or real progress of change. Rather, it is one of continued discharges/emissions of most of the serious chemical toxins are currently afflicting the NE Atlantic’s seas; and, little confidence that those substances which are scheduled for elimination by 2020 will actually cease to be discharged within this timeframe. In short, rather a different story.

Secondly, if improvement were in evidence, one would expect the effect of hazardous chemical discharges – such as disease in fish – to be in decline. In reality, a study of the fish Dab (*Limanda limanda*) in the North Sea for the period 2002-2007 compared to the period 1992-2001 (see Figure 5.4) shows that the health status of the fish has worsened in 7 out of the 12 sampling stations, and shows no change in the other 5 sampling stations. OSPAR asserts that this decline in the health of Dab (a fish that lives and feeds on the seabed) “*cannot be linked with observations of chemical contamination and [the] causes still need to be investigated.*” This assertion appears unlikely when the diseases being monitored include ulcers on the body and liver tumours.

MARINET observes: OSPAR may only be a monitoring and assessment organisation with a capability for formulating principles for marine management, rather than an executive organisation, but it remains essential that its pronouncements and statements are accurate. We cannot expect to bring the severe decline in biodiversity in the NE Atlantic under control, and back into a state of genuine health, if the reporting of facts by OSPAR members is inaccurate.

In respect of Hazardous Substances – a key area – there is evidence that public pronouncements about bringing the situation back under control are not wholly accurate, and that when QSR 2010 is read with care the facts recorded there are contradicting declarations that matters are being brought under control.

MARINET firmly concludes from its reading of QSR 2010 that matters in the field of Hazardous Substances are manifestly not under control. Moreover, any statement that they are simply does not square with the facts, and could be construed as misleading.

It is imperative that we, and particularly OSPAR which is charged with the protection of the North East Atlantic, deal with reality as it is, and that we do not try to evade the facts for reasons of expediency. From MARINET’s perception, there was a definite hint of this existing at the Ministerial Conference in Bergen. It must be challenged and exposed because, if it is not, the serious pollution and decline in biodiversity which has afflicted the North East Atlantic will continue. This is not acceptable, and anyone who does not challenge this decline with total honesty is failing in their duty.

There is evidence of this failure at the present time. And not only amongst the member countries of OSPAR and their Ministers, but also amongst the NGOs who act as Observers.

In respect of **Radioactive Substances**, the OSPAR summary in QSR 2010 states “*OSPAR countries have concentrated their efforts to reduce inputs of radionuclides by focussing on the nuclear sector; β -activity discharges from this sector have fallen by 38% on average since the period 1995–2001. Environmental concentrations and exposure of humans and biota to some monitored radionuclides from the nuclear sector are low. Offshore oil and gas extraction is a*

substantial source of inputs of naturally occurring radionuclides to the sea, but monitoring began too recently to assess trends.”

OSPAR also states: *“Discharges from nuclear installations have fallen, and radiation doses to humans and marine life from this pollution are low in all OSPAR regions.”* This leads OSPAR to recommend regarding policy for the time period 2010 to 2020 *“continued effort to reduce radioactive discharges from the nuclear sector, and further assessment of radioactive discharges and impacts from the oil and gas industry in order to identify and implement appropriate management measures.”*

MARINET observes: As with Hazardous Substances, we must ask an important question regarding OSPAR’s reporting of Radioactive Substances and its assertion that *“radiation doses to humans and marine life from this pollution are low in all OSPAR regions”*. This question is: Is OSPAR’s reporting of the facts, and the assertions made, accurate ?

In order to answer this question, let us examine OSPAR’s reporting of the facts, and its assertions, regarding the UK section of the Irish Sea. It is into the Irish Sea that Sellafield discharges, and Sellafield is by far the largest source of man-made radioactivity in the NE Atlantic.

OSPAR’s reporting of this matter is covered by Figure 6.5. The radionuclides that OSPAR uses to describe trends of radioactivity present in seaweed, molluscs and fish in the UK section of the Irish Sea are Caesium 137 (^{137}Cs), Technetium 99 (^{99}Tc) and Plutonium 239 + 240 ($^{239+240}\text{Pu}$).

On examination of Figure 6.5 and its coverage of the UK section of the Irish Sea, OSPAR claims that in respect of seaweed there is no data to record the trend of the presence of Caesium 137 in seaweed, and that there is no data to record the trend of the presence of Caesium 137 and Plutonium 239+240 in fish.

This is plainly wrong. The UK monitors annually the presence of Caesium 137 in seaweed, and the presence of Caesium 137 and Plutonium 239+240 in fish, and has done so ever since Sellafield (formerly known as Windscale) first began its discharges into the Irish Sea in the early 1960s. As a result, it must be said that OSPAR has failed to adequately report on the presence of key radionuclides in marine life in the Irish Sea, and has made assertions based on this when it knows that this information does exist and should have been recorded in Figure 6.5 of QSR 2010.

As a result, the OSPAR statement that *“radiation doses to humans and marine life from this pollution are low in all OSPAR regions”* is arguable, and cannot necessarily be sustained because OSPAR has failed to report all the facts in QSR 2010 when they are readily available in the UK’s annually published monitoring data. Thus there is the suggestion of a serious deficiency and, given the importance of reporting the situation in the UK section of the Irish Sea accurately (it is the most radioactively contaminated part of the NE Atlantic), this suggestion of deficiency challenges the credibility of OSPAR’s reporting in this whole area of Radioactive Substances.

Let us look further into this matter, and let us examine whether there is grounds for believing that radiation doses to humans and marine life are low. We take as our example cockles (mollusc : *Cerastoderma edule*) which are harvested from Morecambe Bay and then sold widely throughout the UK and Europe. The data sources are:

- 1993: MAFF, Radioactivity in Surface and Coastal Waters of the British Isles, 1994. ISSN 0142-2499, Morecambe Bay (Middleton Sands).
- 2002: Environment Agency, Radioactivity in Food and the Environment, 2002. ISSN 1365-6414, Morecambe Bay (Middleton Sands).
- 2008: Environment Agency, Radioactivity in Food and the Environment, 2008. ISSN 1365-6414, Morecambe Bay (Flookburgh).

**Concentration of radioactivity in Morecambe Bay cockles,
Becquerels per kilogramme (Bq kg⁻¹), wet.**

Radionuclide	Year : 1993	2002	2008
Carbon 14 (¹⁴ C)	47.0	NA	82.0
Cobalt 60 (⁶⁰ Co)	0.60	2.0	0.36
Zinc 65 (⁶⁵ Zn)	NA	0.15	0.20
Strontium 90 (⁹⁰ Sr)	0.84	NA	0.29
Zirconium 95 (⁹⁵ Zr)	NA	0.18	0.38
Niobium 95 (⁹⁵ Nb)	NA	0.19	0.75
Technetium 99 (⁹⁹ Tc)	6.7	NA	2.3
Ruthenium 106 (¹⁰⁶ Ru)	1.7	2.1	0.75
Silver 110m (^{110m} Ag)	0.12	0.11	0.14
Antimony 125 (¹²⁵ Sb)	0.43	0.40	0.21
Caesium 134 (¹³⁴ Cs)	ND	0.07	0.08
Caesium 137 (¹³⁷ Cs)	9.0	4.0	3.7
Europium 154 (¹⁵⁴ Eu)	0.08	0.17	0.2
Europium 155 (¹⁵⁵ Eu)	0.04	0.15	0.17
Plutonium 238 (²³⁸ Pu)	0.56	0.52	0.34
Plutonium 239+240 (²³⁹⁺²⁴⁰ Pu)	2.9	3.0	2.0
Plutonium 241 (²⁴¹ Pu)	38.0	NA	12.0
Americium 241 (²⁴¹ Am)	7.7	6.7	5.9
Curium 243+244 (²⁴³⁺²⁴⁴ Cu)	0.023	0.011	0.0053

Note: NA = Not analysed. ND = Not detected. 1 Becquerel = 1 radioactive disintegration/emission per second.

Also, in order to illustrate the fact that sampling of fish for radioactivity does occur on a historical basis of the UK Irish Sea, we provide below the 2002 and 2008 sampling results for Plaice (*Pleuronectes platessa*) caught offshore from Sellafield, and for cod (*Gadus morhua*) caught in waters adjacent to Fleetwood (Lancashire), also for 2002 and 2008. (See below for data sources)

**Concentration of radioactivity in UK Irish Sea Fish,
Becquerels per kilogramme (Bq kg⁻¹), wet.**

Radionuclide	2002		2008	
	Plaice	Cod	Plaice	Cod
Carbon 14 (¹⁴ C)	100.0	61.0	190.0	81.0
Cobalt 60 (⁶⁰ Co)	0.22	0.09	0.12	0.11
Strontium 90 (⁹⁰ Sr)	0.080	0.023	0.33	0.096
Zirconium 95 (⁹⁵ Zr)	0.09	0.23	0.58	0.64
Niobium 95 (⁹⁵ Nb)	0.07	0.22	0.95	1.5
Technetium 99 (⁹⁹ Tc)	22.0	0.44	26.0	0.45
Ruthenium 106 (¹⁰⁶ Ru)	0.4	0.81	1.1	1.1
Caesium 134 (¹³⁴ Cs)	0.06	0.09	0.11	0.11
Caesium 137 (¹³⁷ Cs)	6.8	4.4	3.8	3.9
Cerium 144 (¹⁴⁴ Ce)	0.2	0.43	0.60	0.44
Plutonium 238 (²³⁸ Pu)	0.0029	0.00076	0.0029	0.00047
Plutonium 239+240 (²³⁹⁺²⁴⁰ Pu)	0.015	0.0042	0.02	0.0025
Americium 241 (²⁴¹ Am)	0.035	0.0011	0.037	0.0056
Curium 243+244 (²⁴³⁺²⁴⁴ Cu)	0.000082	ND	0.000078	ND

Sources:

2002: Environment Agency, Radioactivity in Food and the Environment, 2002, ISSN 1365-6414

2008: Environment Agency, Radioactivity in Food and the Environment, 2008, ISSN 1365-6414

Thus when examining the OSPAR assertion that “*radiation doses to humans and marine life from this pollution are low in all OSPAR regions*” there are grounds for taking issue. To eat a kilogramme of cockles harvested from Morecambe Bay, or a kilogramme of plaice or cod caught in the UK Irish Sea, exposes the consumer to a very broad range of radioactive substances. The health assessment/risk of eating a kilogramme of cockles and fish may officially be low, but it must be remembered that this range of radionuclides is present in all marine foods in the Irish Sea, and that consumption has to be viewed on a long term basis (i.e. eating a variety of marine food from the Irish Sea over an extended number of years).

Assessing health risk from exposure to radionuclides is a complex matter, and is not a subject to be entered into here; although, from a subjective standpoint, one cannot relish eating a wide range of essentially man-made radionuclides in one’s food. However what is evident from OSPAR’s consideration of radioactive substances in QSR 2010 is that there have been clear omissions of data when assessing the health risk (i.e. OSPAR Figure 6.5 omitted all data on radioactivity in fish in the UK section of the Irish Sea when it is clearly known that this data exists); and, is providing a very narrow portrait in QSR 2010 of the type of exposure (range of radionuclides) which exist in the marine environment and marine life.

MARINET therefore must conclude that there does not exist a strong basis for believing the QSR 2010 portrait of Radioactive Substances is comprehensive, and that there is clear evidence that the QSR 2010 is subject to deficiencies of the type which have been illustrated above.

In respect of **the Offshore Oil and Gas Industry**, the OSPAR summary in QSR 2010 states “*Oil discharges with produced water have fallen on average by 20% in the OSPAR area and most countries have met the OSPAR 15% reduction target, but volumes of produced water are expected to increase. Pollution from drilling fluids and cuttings piles has been considerably reduced. Impacts of offshore oil and gas activities have reduced around some installations, but the evidence base for environmental impacts is limited.*”

MARINET observes: it is clear that the offshore oil and gas industry are major emitters of pollutants into the NE Atlantic. For example, Figure 7.6 in QSR 2010 records that 900,000 tonnes of chemicals were used offshore in 2007 of which 250,000 tonnes were discharged to sea. It is claimed in QSR 2010 that 87% of the chemicals that were discharged to sea in 2007 pose little or no risk (known as PLONOR chemicals) to the marine environment, but no actual analysis of either the PLONOR chemicals or of the remaining 135 more seriously polluting chemicals is given in QSR 2010. One would have expected this information and analysis to have been provided in QSR 2010.

Also, the offshore oil and gas industry discharged around 400 million cubic metres of “produced water” into the sea. Produced water is water emanating from the oil and gas wells, either coming up naturally with the oil and gas from the well reservoir, or as a result of injection. This produced water will contain natural radionuclides and a wide range of chemicals. No toxic chemical analysis of the composition of this 400 million cubic metres discharged to sea is provided in QSR 2010. One would have expected this information and analysis to have been provided.

Without the detailed information and analysis of the chemicals (PLONOR and toxic) and without the same information and analysis of “produced water” it is almost impossible to determine the pollutant load and impact of the oil and gas industry on the NE Atlantic. This is the type of scientific monitoring data and assessment which OSPAR and QSR 2010 should be providing. The absence of this data and analysis is regrettable as it means that a proper assessment of the impact of the oil and gas industry on the marine environment cannot, and importantly, has not been made.

The QSR 2010 recommends in the period to 2020: “*a risk-based approach to managing discharges of produced water, improved environmental assessment, and consideration of how existing measures can be applied to the Arctic.*”

MARINET observes: a risk-based approach is fine, provided this risk-based approach has been defined and thus can be verified as suitable to its purpose. However it is not evident from QSR 2010 what this definition is, and it is clear from QSR 2010 that the full range and analysis of data on toxic chemical and discharges by the industry has been omitted from public scrutiny.

Further, the offshore oil and gas industry are now moving their operations and wells in deep waters (see <http://www.marinet.org.uk/latestnews.html#uwie>) and the oil platforms are operating under “flags of convenience” in the North Sea which greatly reduce the safety inspections and regimes required (see <http://www.marinet.org.uk/latestnews.html#bopw>). This means that one can have little confidence of what lies ahead for the protection of the pristine Arctic waters and their ecosystem when QSR 2010 asserts “. . . and consideration of how existing measures can be applied to the Arctic.”

Thus, it must be said that OSPAR approach to the monitoring and the development of adequate principles for the regulation of the offshore oil and gas industry appears seriously inadequate, and that the QSR 2010 has failed to properly record the data or provide the analysis that would engender the confidence that such regulation is about to be properly undertaken. One must conclude that OSPAR’s work in this area needs serious improvement.

In respect of **Fishing, Mariculture and the Hunting of Marine Mammals** the OSPAR summary in QSR 2010 states: “*Fishing pressure continues to have a considerable impact on marine ecosystems and many problems remain despite efforts to improve management. Exploitation of many stocks continues to be beyond the levels they can sustain, while the status of a large number of stocks cannot be fully assessed due to poor data. Habitat destruction and the depletion of key predator and prey species and consequent food web effects are of concern. Mariculture is a growing activity which needs careful management to minimise potential impacts. Hunting of marine mammals is managed so that there is a low risk of depleting populations.*”

As can be seen from the above statement, OSPAR recognises that the exploitation of many fish stocks are beyond levels which they can sustain i.e. over-fished. OSPAR asserts too that the health of many fish stocks cannot be assessed because of a lack of data.

Before proceeding to examine the accuracy of these statements, it should be noted that the management of fish stocks, and the formulation of policy relating to the management of fish stocks, is not OSPAR’s responsibility. This responsibility lies with the member countries of OSPAR, either individually (Iceland, Norway) or via the EU Common Fisheries Policy. Fisheries beyond the exclusive economic zone (EEZ) of OSPAR member countries (i.e. the “high seas” which lie beyond national jurisdiction) are managed by the North East Atlantic Fisheries Commission (NEAFC). OSPAR does, of course, recognise that fish occupy a key place in marine ecological structure and that fishing practices can and do have a profound impact on the marine ecosystem as a whole in the NE Atlantic. Therefore OSPAR’s monitoring of the condition of fish stocks goes beyond a simple scientific purpose, and does seek to inform the management authorities (EU and its CFP, NEAFC), and advises on the conservation and protection of fisheries.

Looking forward to 2020, the QSR 2010 recommends: “*cooperation to promote sustainable fishing, as well as improved monitoring and assessment of fisheries, by-catch and vulnerable habitats, particularly in the Wider Atlantic where knowledge is poor.*”

Let us now examine OSPAR's presentation of the health of fish stocks in the NE Atlantic. The background to this is the EU Green Paper on CFP Reform, published 2009, see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0163:FIN:EN:PDF> . This states: *“The marine ecosystems in Europe’s waters have the potential to support a high productivity of fish stocks. However, most fish stocks have been fished down. 88 % of Community stocks are being fished beyond MSY [Maximum Sustainable Yield]²: this means that these fish populations could increase and generate more economic output if they were left for only a few years under less fishing pressure. 30 % of these stocks are outside safe biological limits, which means that they may not be able to replenish. European fisheries today depend on young and small fish that mostly get caught before they can reproduce. For instance, 93 % of the cod in the North Sea are fished before they can breed. This overall picture conceals considerable variations by marine region and species. Nonetheless, European fisheries are eroding their own ecological and economic basis.”* (Ref. Green Paper, page 7).

Thus we see that 88% of EU commercial fish stocks are being overfished, and 30% of these to a point where there they are threatened with commercial extinction. Moreover, 93% of the North Sea cod stock is caught before it reaches breeding age, and the remaining 7% are caught before they are older than six years. This is significant because a cod only becomes sexually mature at six years, can live until it is 25 years old, and doubles in its ability to produce eggs every time its body doubles in length. Thus the more mature and older a cod is, the greater its ability to reproduce. We are therefore faced in the North Sea with a situation where only 7% of the cod population are sexually mature, and then only for one year (before they are caught). This is akin to asking the human race to survive solely on the breeding capacity of teenagers who have just arrived at puberty.

This pattern of reducing the breeding stock of cod (known as the spawning stock biomass or SSB) due to current fishing practices is also occurring with regard to other fish species in EU waters. If the spawning stock is fished beyond a level where reproductive capacity is considered to be impaired (as is the case with North Sea cod and 30% of other commercial fish stocks in EU waters) then that stock is considered to be facing commercial extinction.

Therefore the key question is: what is the size of a sustainable fish stock ? We know that the fishing industry has relentlessly pursued fish stocks over the decades, using ever larger ships, larger nets and more sophisticated electronic technology to the point where no fish can escape. This has resulted in seriously diminished stocks and, from a historical perspective, catastrophically reduced stocks where stocks sizes now are but a minute fraction of what they once were.

In answer to the question of what is a sustainable fish stock, the International Council for the Exploration of the Sea (ICES) calculates, on a scientific basis, what it considers to be the spawning stock biomass (SSB) for individual fish stocks, and argues that if the size of this spawning stock is compromised then its existence is threatened.

The SSB calculated by ICES therefore provides a guideline in answer to this question. However ICES only monitors a limited number of stocks. For example, QSR 2010 records (Figure 8.5) that of the fish stocks in the NE Atlantic (excluding the Baltic Sea) the following data applies:

Stocks being fished beyond their SSB (unsustainably and jeopardising their existence)	25
Stocks being fished within their SSB (sustainably and, in all probability, safely)	10
Stocks for which ICES has no data about their SSB (size of spawning stock unknown)	52

² Maximum Sustainable Yield (MSY) is the maximum catch which, on average, can be taken year after year from a fish stock without damaging the productivity of the fish stock. If MSY is repeatedly exceeded in the short term, the fish stock will decline in its productivity over the longer term, resulting in the possible commercial extinction of the stock.

Therefore, it can be clearly seen that there are more fish stocks for which no data exists than there are for stocks where data does exist. This is a serious limitation when trying to answer the question: what is the size of a sustainable fish stock ?

Another important factor needs to be taken in account. This is viewing stocks from a historical perspective. If we take bluefin tuna, for example, this fish used to be abundant in the North Sea. Indeed, it is believed that in the 1960s around 70,000 bluefin tuna were being caught annually from the North Sea (see: <http://news.bbc.co.uk/1/hi/sci/tech/3694390.stm>). However this particular fish was fished so relentlessly that by the end of the 1960s the stock collapsed, and bluefin tuna is now commercially extinct in the North Sea and individuals only very rarely sighted.

A further development of this specific point relates to size of the overall fish stock in the North Sea. In 1900 it is estimated that the total fish stock (all species) in the North Sea stood at 26 million tonnes, but by 2000 the total fish stock had fallen to 10 million tonnes. This fall is due to fishing. Therefore, what is a truly sustainable fish stock and sustainable spawning stock biomass ? Is the figure for a stock and its SSB set at the 1900 level or the 2000 level ? Clearly, there is an important difference. A further example of this is the North Sea cod stock. It is calculated (see: <http://news.bbc.co.uk/1/hi/sci/tech/7144337.stm>) that the North Sea cod stock size was ten times greater in 1900 than it is today; therefore, if the spawning stock is 50,000 tonnes today (ICES 2010) the spawning stock in 1900 would have been 500,000 tonnes. It is further calculated that the stock in 1850 was twice the 1900 figure, so that would have meant stock size in 1850 was 1 million tonnes. These figures are rough guidelines. For example, the North Sea cod spawning stock was estimated at 100,000 tonnes around 1996, therefore we if apply the same scaling as above the stock was 1 million tonnes in 1900, and 2 million tonnes in 1850.

Therefore, what is a sustainable fishery ? What is the appropriate level for calculating the spawning stock biomass (SSB) ? Is it simply to maintain fish stocks at they current highly depleted levels which reflect a century or more of over-fishing, or should the spawning stock level be set in order to achieve a rebuilding of the fish stock on a path towards its historic levels of abundance ? In short, do we define sustainability in terms of current levels, or in terms of historic levels ?

MARINET observes: We should clearly be setting fish stocks levels, and the calculation of spawning stock biomass (and thus levels of fishing), at a level which provides an opportunity to restore fish stocks to historic levels. It is not acceptable to plan fishing policy on the basis that we simply accept the degraded marine ecosystem in the NE Atlantic as it is today. If conservation and protection means anything, it must mean an attempt to restore the ecosystem to its former biodiversity and that, in turn, means fish stocks at historic levels. It may not always be possible to achieve this – the ecosystem itself may have changed in terms of its food web and physical parameters (e.g. temperature) and certain species (e.g. bluefin tuna) may now have such a small population that their restoration is not practically possible. However, a management plan based on anything other than a restoration of biodiversity to historic patterns is essentially worthless. Not only does it permanently deny future generations the fecundity of our seas which they could enjoy and which may be essential for human society’s long term survival, but it also contradicts our commitment to the ecosystem approach (in particular, respect for the integrity of the ecosystem) and our commitment and that of OSPAR to “ a belief in a shared vision of a clean, healthy and biologically diverse North East Atlantic ocean, used sustainably.”

Let us now consider OSPAR’s consideration of NE Atlantic fish stocks in QSR 2010.

QSR 2010 provides an assessment of the condition of key fish stocks in the NE Atlantic (see, Box 8.3) and a portrait of their status in 2010 relative to years between the present and 1998. It is stated that this assessment is based on ICES data. MARINET has also consulted ICES data

(see, <http://www.ices.dk/committe/acom/comwork/report/asp/advice.asp?Region=16&Species=-1&Period=305&submit1=Submit+Query&mode=2> and <http://www.ices.dk/committe/acom/comwork/report/asp/advice.asp?Region=-1&Species=-1&Period=305&mode=2>) and we provide below, based on ICES data, a comparative tabulation of our research into QSR 2010 data (Box 8.3) on the status of North East Atlantic fish stocks.

Fish stock	ICES figure for safe size of spawning stock biomass (SSB), tonnes.	ICES 2010 figure for current size of SSB, tonnes.	ICES verdict on whether 2010 fishing levels are sustainable	QSR verdict on whether 2010 fishing levels are sustainable	Maximum known SSB in recent time, (ICES data, approx. date)
Cod (North Sea, Skaggerak, East Channel).	150,000 t.	50,000 t.	No	No	100,000 t. (c. 1996)
Cod (Kattegat)	10,500 t.	5,000 t.	No	No	35,000 t. (c. 1972)
Haddock(North Sea, Skaggerak, East Channel)	140,000 t.	200,000 t	Yes	Yes	900,000 t (c. 1970)
Saithe (North Sea, Skaggerak, West Scotland)	200,000 t.	250,000 t	Yes	Yes	550,000 t. (c. 1975)
Hake (Northern stock)	Not known	Increasing	Not known	Yes	Not known
Plaice (North Sea)	230,000 t.	440,000 t.	Yes	Yes	450,000 t. (c. 1988)
Plaice (Kattegat and Skaggerak)	24,000 t.	Not known	Not known	Not known	Not known
Plaice (East Channel)	8,000 t.	2,000 t.	No	Not known	5,000 t. (c. 1990)
Sole (North Sea)	35,000 t.	35,000 t.	Borderline	Yes	120,000 t. (c. 1962)
Sole (East Channel)	8,000 t.	12,000 t.	Yes	Yes	12,500 t. (c. 2008)
Herring, <i>Autumn spawning</i> (North Sea, Skaggerak, East Channel)	1.3 million t.	1.3 million t.	Borderline	No	2.2 million t. (c. 1964)
Herring, <i>Spring spawning</i> (North Sea, Skaggerak, East Channel)	110,000 t.	75,000 t.	No	No	330,000 t. (c. 1992)
Mackerel (Combined: Southern, Western, N, Sea)	Not known	Not known	Not known	Yes	Not known
Norway Pout (North Sea, Skaggerak)	150,000 t.	260,000 t.	Yes	Yes	390,000 t. (c. 1970)
Blue Whiting (Portugal to Norway)	2.25 million t.	1.5 million t.	No	Yes	6.8 million t. (c. 2004)

Note: Spawning Stock Biomass (SSB) is the ICES estimation of the lowest figure (tonnage) for a spawning stock that can exist before the ability of that stock to replenish itself is compromised.

MARINET observes: As can be seen from the table above there is some doubt, based on our research into the ICES data, as to the accuracy of QSR 2010's verdict on whether certain fisheries are currently being fished sustainably (i.e. not being fished beyond the spawning stock biomass limit). However, whilst these discrepancies exist, we would not take undue issue over these matters until the nature of the statistics can be explored further.

On a more profound point, however, we are greatly concerned by the evidence (sixth column in the table, ICES data) that spawning stock biomass for nearly all stocks can be substantially greater than they currently are. This illustrates, firstly, the intense fishing pressure currently being experienced by these fish stocks; and secondly, that new fisheries management policies aimed at restoring fish stocks to earlier historic levels really do have to lift their sights above simply maintaining fish stocks at or around the current ICES spawning stock biomass safe limit.

If we pursue policies simply on this basis, there is absolutely no prospect of restoring the fecundity of our fish stocks to levels which we know they are capable of attaining (thus giving an increased economic yield from our seas, along with its associated "food security"), and which is required if we are truly to attain healthier, more biodiverse seas in the NE Atlantic.

The serious weakness of QSR 2010 is not so much the statistical anomalies that we have identified in the data (although they are of concern, if verified), but rather the complete absence of any evidence in QSR 2010 that OSPAR has formulated any policies for the restoration of fish stocks to historic levels; and, as a consequence, is making no recommendations in this regard to the authorities responsible for fisheries management.

OSPAR really should be leading in this task. According to our understanding of OSPAR's purpose, this is a fundamental task for the organisation. The absence of such policies, given the scientific expertise available to OSPAR, is both worrying and unacceptable. It is imperative that OSPAR pursues this task, and makes recommendations on how fish stocks and their related food webs can be restored to good environmental status (GES) by 2020 in line with the requirements of the Marine Strategy Framework Directive (MSFD) [GES for commercial fish stocks and marine food webs is defined in the MSFD as: *Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock and All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.* Ref Annex I].

This is a fundamental failure in OSPAR's present policies, exemplified by QSR 2010, and must be addressed urgently.

On a different note, OSPAR's assessment of mariculture (fish farming) is more robust. It states: "*There are many concerns linked to mariculture, both in relation to rearing practices and to the widespread exchange and movement of eggs, embryos and seed, especially when different eco-regions are involved. Examples of these concerns include genetic interaction between farmed fish and wild stocks, transfer of parasites and diseases, spread of non-indigenous species, and dependence on industrial catches of wild fish to feed fish in mariculture. There are also concerns over a number of site-specific impacts from mariculture facilities, including:*

- *Eutrophication as a result of nutrient enrichment from feeds and effluents.*
- *Competition between escaped farmed fish and wild stocks for spawning grounds in freshwater habitats.*
- *Release of chemicals used to prevent fouling of equipment or to treat parasites and diseases.*

- *Displacement of bird and seal populations as a result of the use of scaring devices to discourage predation of farmed fish.*
- *Impacts from the harvesting of shellfish and from seed collection for mussel farming.”*

MARINET observes: OSPAR needs to ensure that all of the above impacts are controlled.

Of particular concern, and not mentioned in QSR 2010, is the fact that many species of farmed fish are carnivores (i.e. they eat other fish as a natural part of their diet). This means that fishing of wild stocks has to occur in order to feed certain farmed fish, and it is generally agreed that to create 1 kilogramme of farmed fish between 3 and 4 kilogrammes of wild fish protein is required. This can therefore lead to increased pressure on wild fisheries. More importantly, it needs to be clearly understood that this particular form of fish farming (i.e. farmed salmon, cod) is not a replacement for the loss of wild fish stocks. On the contrary, it is very likely exacerbating the problem and certainly not solving it.

Another concern, again not mentioned in QSR 2010, is the genetic modification of farmed fish (generally to make them grow faster, see <http://www.marinet.org.uk/latestnews.html#fggs> and <http://www.marinet.org.uk/latestnews.html#itgh>). Genetic modification has the capability of causing profound havoc to natural ecosystems, and if applied to fish farming could cause severe problems to the NE Atlantic ecosystem. It is therefore of some concern that no attention has been given to this matter in QSR 2010, and MARINET **recommends** to OSPAR that it urgently addresses this important issue.

In respect of **Protection and Conservation of Biodiversity and Ecosystems** the OSPAR summary in QSR 2010 states “*OSPAR is working to protect vulnerable species and habitats and ecological processes in the North-East Atlantic. Fishing is a key pressure leading to declines in some species and loss of vulnerable seabed habitat. Climate change will increase the pressure on biodiversity. Progress has been made in establishing marine protected areas (MPAs) in coastal waters and in protecting cold-water corals from destructive fishing practices. The target of reducing the rate of loss of biodiversity has not yet been reached.*”

Principal tools available to OSPAR in this regard are the identification of species and habitats at risk or endangered, and the development of management plans to assist their recovery; also, the deployment of Marine Protected Areas (MPAs) or, more preferably, marine reserves³ which can act to protect not just species and habitats at risk, but also the general functioning of the ecosystem as a whole in order to protect not only those features which are at risk but also the normal features and processes of the ecosystem in order to secure an all round healthy condition for the seas; and, also Ecological Quality Objectives (EcoQOs) which set standards for the health and good status of habitats, species and the general ecosystem.

There is also the general aim within the OSPAR region (NE Atlantic) to meet the commitment of the 2002 World Summit on Sustainable Development and the UN Convention on Biological Diversity to achieve a significant reduction in the rate of biodiversity loss. Achievement of these commitments cannot be accomplished by OSPAR itself (it does not have executive powers), but rather only by the agreed collective action of OSPAR’s member countries. OSPAR is able however to evaluate the success, or otherwise, regarding the achievement of the commitments by member countries acting individually, or collectively in the name of OSPAR.

³ Marine Reserves differ from Marine Protected Areas (MPAs). Marine Reserves are areas that are fully and permanently (rather than seasonally or in the short-term) protected from activities that remove animals, plants or alter habitats, except for scientific purposes. They are therefore capable of protecting the whole ecosystem within their boundaries. MPAs, on the other hand, exclude only some activities that harm animals, plants and animals, and are often only designed to protect a specific species or habitat within their boundary. They do not, therefore, provide such a comprehensive level of protection as Marine Reserves.

Looking forward to 2020, the QSR 2010 recommends “ *extending the OSPAR network of marine protected areas, especially in key areas away from coasts, to complete an ecologically coherent network. Targeted measures are needed to improve the protection of threatened and / or declining species and habitats.*”

OSPAR has identified, using agreed criteria, 42 species at risk in the NE Atlantic area, 29 of which were first identified in 2002 and a further 13 added in 2008. A review of the list in 2010 added no new species. No species placed on this list has yet been removed as a result of improvement in its status.

OSPAR has identified, using agreed criteria, 16 habitats at risk in the NE Atlantic area, 14 of which were first identified in 2003, and a further two were added in 2008. Following the 2010 quality assessment no further habitats have been added. No habitats placed on this list have yet been removed as a result of improvement in their status.

The pressures on these species and habitats are essentially man-made, and range from acidification and temperature change (i.e. global warming) to various forms of pollution. However the *one* human pressure identified as adversely affecting virtually all species is fishing, and fishing is a major adverse feature affecting half of the endangered habitats.

MARINET observes: OSPAR does carefully chart and record the condition and status of endangered/at risk species and habitats in the NE Atlantic, and this status and recognition is of real benefit. However restoration of these species and habitats back to health does require action plans, and general strategic thinking about the ecosystem as a whole. If criticism is valid, it is that in this field of work OSPAR has failed to make little progress in the last 10 years and, although it asserts that targeted measures are required between now and 2020, there is no evidence yet in QSR 2010 or elsewhere that such targeted measures have undergone any real development. As environmental campaigners know it is one thing to identify the problem, but quite another to identify the solution. OSPAR similarly has not solved this particular conundrum at the present time. Success by 2020 in this regard is essential.

Another principal tool in the protection of species and habitats, and indeed the ecosystem as a whole throughout the NE Atlantic, is the use of Marine Protected Areas (marine reserves).

OSPAR set itself the target of establishing an ecologically coherent network of Marine Protected Areas by 2010. The target size for this network has never been defined by OSPAR, although OSPAR has undertaken work to define ecological coherence, and this includes the necessity for the network to represent all types of habitat and species, and for that network to exhibit connectivity.

In 2003 the World Parks Congress, the largest global assembly of protected area specialists and conservation managers, recommended that marine “protected area networks should be extensive and include strictly protected areas (i.e. marine reserves) that amount to at least 20-30% of each habitat.” This call has been echoed by other scientific, political and expert fora, including, in 2005, the United Nations Millennium Project, which called for 10% of the oceans to be covered by marine reserves in the short to medium term, with a long-term goal of 30%. In the UK, the Royal Commission on Environmental Pollution recommended in 2004 a figure of 30% marine reserves (no-take areas) in order to rebuild commercial fish stocks.

QSR 2010 reports that by January 2010 Marine Protected Areas covered 1% of the OSPAR area, that these were largely in coastal areas (i.e. within 12 nautical miles of land) and that nearly all MPAs were based on the EU Habitats and Wild Birds Directives. By September 2010 OSPAR had agreed to establish some MPAs in areas beyond national jurisdiction in the NE Atlantic (beyond a country’s Exclusive Economic Zone of 200 nautical miles i.e. on the high seas) and that

this had extended the MPA network to 3.1% of the OSPAR area.

MARINET observes: A figure of 1 to 3% is a start, but clearly a long way short of what international scientists and marine experts believe is necessary. In the September 2010 Ministerial Statement OSPAR agreed, as did other environmental NGOs, to work by 2020 to achieve the Convention on Biological Diversity (CBD) “target” of 10% coverage. MARINET queried this CBD target i.e. its legal basis, and it transpires that it is simply an “aspirational target”.

The OSPAR MPA network is also almost wholly based on the EU Habitats and Wild Birds Directives and their Natura 2000 sites (i.e. Special Areas of Conservations [SACs] for habitats and Special Protection Areas [SPAs] for wild birds.) The difficulty with an OSPAR Marine Protected Area network based on the EU Habitats and Wild Birds Directives is that these Directives are limited in the range of species and habitats which they protect, and only those species/habitats which are either rare or endangered are protected. In no sense are the EU Directives seeking to cover all the range of habitats and species i.e. to be representative, and the concept of ecological coherence is absent from the purpose of these Directives.

Thus although the OSPAR MPA network may claim ecological coherence, it clearly does not. Moreover, it cannot until OSPAR seeks to develop its *own criteria* for MPA identification and designation. There is no evidence, either in QSR 2010 or elsewhere, that OSPAR is seriously developing such criteria. This is a major weakness at the present time.

Also MARINET **recommends** that OSPAR develop criteria which will enable fish species, both commercial and non-commercial, to have full protection with an ecologically coherent MPA network. We have referred earlier to the need for OSPAR to undertake this pro-active role with respect to fisheries protection and regeneration, and the use of genuine *marine reserves* to protect spawning, nursery and feeding areas of fish stocks is essential. We regard this as priority work for OSPAR, and we have seen no serious evidence of it being undertaken or written into plans to be undertaken. This must change if the condition of the NE Atlantic is to improve by 2020, and clearly greater ambition in terms of the extent of the MPA network and its purpose is required.

The other principal area where OSPAR can significantly contribute to the protection and conservation of biodiversity in the NE Atlantic is by the development and use of Ecological Quality Objectives (EcoQOs) which set standards for the health and good status of habitats, species and the general ecosystem.

OSPAR states that it has been developing these for the North Sea during the last ten years on an experimental, pilot basis. This system of EcoQOs therefore does not extend throughout all regions of the NE Atlantic at the present time.

MARINET observes: Ecological Quality Objectives are a key tool in the delivery of the ecosystem-based approach to the management of our seas, and OSPAR is committed in its 2010 Ministerial Statement to placing the ecosystem-based approach at the centre of all its work. Indeed, it has been adopted as an over-arching principle.

Ecological Quality Objectives (EcoQOs) are central to the task that OSPAR does best, namely assessment and monitoring. EcoQOs can not only identify standards to which damaged or polluted seas should be restored, but are key to setting those standards which healthy, clean and biodiverse seas need to attain and maintain at all times. Therefore they are standards which measure health as well as morbidity.

It is essential that OSPAR establishes a full range of Ecological Quality Objectives for all species and habitats, both common and rare, endangered and healthy, throughout the NE Atlantic, and that this range of standards (EcoQOs) extends to standards and monitoring for ecosystems too.

MARINET **recommends** that the development of Ecological Quality Objectives becomes a priority task for OSPAR. The use of EcoQOs will be essential if the EU Marine Strategy Framework Directive (MSFD) is to be properly implemented – and the standards of the MSFD not subverted, as some people fear they will be, in order to enable certain countries to evade their legal duty under the MSFD to ensure “good environmental status” for our seas by 2020.

OSPAR has a key role to play in ensuring that *integrity* is applied to the management of our seas over the next ten years. MARINET believes that if we do not sort out and solve the serious problems which face the NE Atlantic during the next ten years, then the fate of the NE Atlantic will be the same as the fate that has already befallen the North West Atlantic where the world’s largest coastal and offshore commercial fishery has collapsed and the nature of the marine ecosystem there has undertaken seemingly irreversible degradation.

MARINET believes that the seas of the NE Atlantic are now in the “last chance saloon”. Ecological Quality Objectives, a vital tool which can transform marine management, is within the power of OSPAR to deliver on a widespread, indeed universal basis throughout the NE Atlantic. This delivery at an early date, thus enabling management practices to have significantly changed by 2020 in the NE Atlantic, is a **key test** of the worth and functioning of OSPAR. The Ministerial Statement and QSR 2010 does not yet appear to recognise this fully. There is an urgency and necessity in this matter which OSPAR *must recognise and act upon now*.

Summary.

How does one evaluate the role and performance of OSPAR ?

- Given the serious levels of pollution, across a wide sets of parameters, which occurs in the North East Atlantic, and
- Given the severe pressure which biodiversity is now experiencing in these seas – and it is a definition of biodiversity which encompasses not just rare and endangered species and habitats, but also common, more universal habitats and species, and also the once super-abundant commercial fish stocks across the full range of fish species, and
- Given the new pressures of acidification and temperature change introduced by man-made global warming, and
- Given, especially perhaps, the absence for so long of coherent management policies and action to tackle these problems: . . .

. . . it is very easy to turn upon OSPAR and to lay the blame for the matters listed above, and indeed the need for remedies, at its door. However, is this a reasonable response ?

It is true that the OSPAR Convention, and its accompanying Commission, has a charter which states that its purpose is the protection and conservation of the North East Atlantic, and it is true that OSPAR has been in existence with this mandate for 10 years, and has just sought renewal for a further 10 years.

Yet, is OSPAR constituted in such a way that it can achieve the aspiration of protection and conservation of the North East Atlantic; or is the organisation, in terms of its actual powers and its effect, little other than a paper tiger ?

Establishing the truth is not easy. The difficulty is getting to the bottom of the issue is that OSPAR is ruled by its member countries, and OSPAR can do nothing without the agreement of its members, and that agreement requires total consensus amongst all the members. Thus compromise becomes the name of the game, and consensus generally means agreement based on the lowest common denominator.

Not a good recipe for action, and not a good recipe for change.

Having said this, all that exists at OSPAR - its monitoring and its assessment, its scientific knowledge and forums for discussion - have been painstakingly created by the individuals who have doggedly built the work and structure of the organisation over the past 10 years. OSPAR has not been ordained and created as if by some divine act, but rather it is man-made and it is the product of the hard work and determination of a number of people who have contributed, often with passion and commitment.

OSPAR is therefore, for all its shortcomings and indeed accomplishments, a human enterprise. It is a reflection of ourselves.

Our evaluation therefore has to strike a balance between what is realistic in human terms, and what is essential in terms of what the NE Atlantic *needs*. We have to frame our ambition and judgement in human terms, and yet do so in a way that will deliver a result that is meaningful from the perspective of our seas. And, most importantly, we have to recognise that the problems we are tackling are *man-made*. Therefore, the responsibility is not only ours but so also are the solutions.

Thus to conclude this analysis, is OSPAR succeeding or failing? Or, to put it another way, are OSPAR's member countries giving it the support it needs, and the objectives linked to the means which it requires in order to succeed in its purpose to protect and conserve the NE Atlantic, or are they failing in these key requirements and duties?

Certainly we have seen that eutrophication and the emission of hazardous substances remain important unresolved issues. OSPAR monitors these emissions and assesses their impacts, but it is the member countries which implement the solutions. The fact that these problems persist is due entirely to the failure of the member countries concerned.

We have also seen that biodiversity loss continues, that fishing practices are a major factor in the cause of this loss, and that fishing practices have themselves led to most commercial fish stocks being overfished and nearly a third to the point where they are faced by commercial extinction if practices do not change (some, such as bluefin tuna and rays and cod stocks in certain areas, are already commercially extinct). Once again, it is the member countries, collectively and individually, who have failed in a profound way to meet their responsibilities.

We have seen that radioactive levels remain of concern, that emissions from oil and gas production remain questionable in terms of their impact and that deepwater drilling is being licenced at a time when we should be investing in renewable energy rather than risky new fossil fuel wells, and we have seen that acidification levels are rising due to fossil fuel use (caused by elevated carbon dioxide absorption in seawater) and that the ecosystem-based approach, whilst being adopted as a new over-arching principle for marine management in the future, it still being defined in a way that gives priority to human uses of the sea rather than ecosystem integrity when the reverse should be true and is urgently mandated by all the scientific evidence. And, once again, it is the *member countries* of OSPAR, who are writing this agenda.

Therefore, OSPAR can only be what it's members allow.

However, OSPAR can still conduct itself with integrity. And it is this integrity, and particularly *scientific integrity* which speaks the truth in the face of political expediency, which is so important. If OSPAR can profess and hold true to this integrity, then OSPAR's importance will remain significant, perhaps crucial.

It is therefore vital that documents, such as the Quality Status Report 2010, are impeccable with regard to their reporting of scientific facts and problems, and in terms of making recommendations in the light of those facts and problems. This is why we have taken time in this survey to analyse QSR 210 from this perspective. One can always argue over the accuracy of facts and their reporting, but we do believe that OSPAR has a need to be cautious. QSR 2010 is not without its faults, and we have tried to explain and illustrate some of these. We believe that OSPAR needs to be congratulated on its production of this Quality Status Report, and certainly no other such scientific report exists elsewhere. This is a measure of its value. However, OSPAR still needs to cast a very critical eye over its own work. Slippage over standards, both in terms of accuracy and adequacy of analysis, can seriously damage its integrity. Indeed, scientific integrity is all-important to an organisation such as OSPAR.

Therefore we **recommend** to OSPAR and, in particular its member countries, that in the forthcoming 10 years to 2020, OSPAR should be allowed to :

- Develop the implementation of the ecosystem-based approach to marine management so that primacy is given to ecosystem integrity, and that all human uses of the sea, including fishing, are licensed in such a manner that these activities fully respect and maintain ecosystem integrity.
- Actually eliminate, and not merely aim to eliminate, all man-made eutrophication from the North East Atlantic's seas.
- Unreservedly, prohibit the discharge to sea and watercourses by OSPAR member countries of all priority hazardous substances.
- Accurately report on the presence of radioactive substances throughout all seas and all marine life in the NE Atlantic, and accurately report on all new sources of radioactive substances.
- Analyse and assess the nature of all chemical discharges by the offshore oil and gas industry, and to recommend on safe practices for drilling in deep water locations.
- Develop and recommend management plans, aimed at restoring all commercial fish stocks to historic levels of abundance, to the fisheries management authorities in the NE Atlantic.
- Develop management action plans for all endangered species and habitats on the OSPAR list, with the aim of being able to remove these habitats and species from the list within 10 years.
- Develop OSPAR's own criteria for the identification and designation, and subsequent management, of marine protected areas; and, to aim to establish such an ecologically coherent network, which covers all species and habitats in a properly representative and connected network of protected areas, covering at least 30% of all seas in the NE Atlantic by 2020.

We recommend these aims to the *member countries* of OSPAR. We know they are achievable by 2020. They simply require action. What we do not know is whether the member countries, both individually and collectively, are committed to their achievement. Depending on the outcome of learning this particular knowledge, rests the future performance of OSPAR.

We say to the member countries of OSPAR : the future of the North East Atlantic lies in your hands, and this is not hollow rhetoric. We, like you, have seen what has happened to the fisheries and ecosystem structure of the North West Atlantic because governments failed to heed the warnings of scientific advice. Do not allow the same to happen here. You are responsible for the NE Atlantic's future, and it is you, if things go wrong, who will be culpable.

Do *not* fail the people and seas of the North East Atlantic.

