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”Small spills – great challenges”

An evaluation of the “Server” oil spill

WWF March 2007

Photo:
WWF's volunteers in action during the oil spill clean-up at Fedje © WWF/Nina Jensen.

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Preface

This report was prepared by WWF, on 7th March 2007 and is presented for the Ministers at The Norwegian Ministry of Fisheries and Coastal Affairs, the Norwegian Ministry of Trade and Industry and the Norwegian Ministry of the Environment.

WWF has for many years been working to strengthen safety at sea and oil spill response. Many of the proposals presented to the Government and the Parliament, and many proposals of action, has been made in partnership with marine trade organizations.

WWF believes there are large deficiencies in the Norwegian oil spill preparedness, both regarding equipment in the depots, tugboats and trained crew. A considerable boost is needed, and it has been needed for a long time. If we want safety at sea and oil spill preparedness that adequately covers our long coast, the increasing environmental risk and the considerable consequences accidents may have, money must be provided. It is not enough to focus on preventive measures alone.

WWF, as formerly stated, participated in the oil spill clean-up operation after the "Server" oil spill outside Fedje, and here propose some measures aiming at improving the oil spill response in Norway.

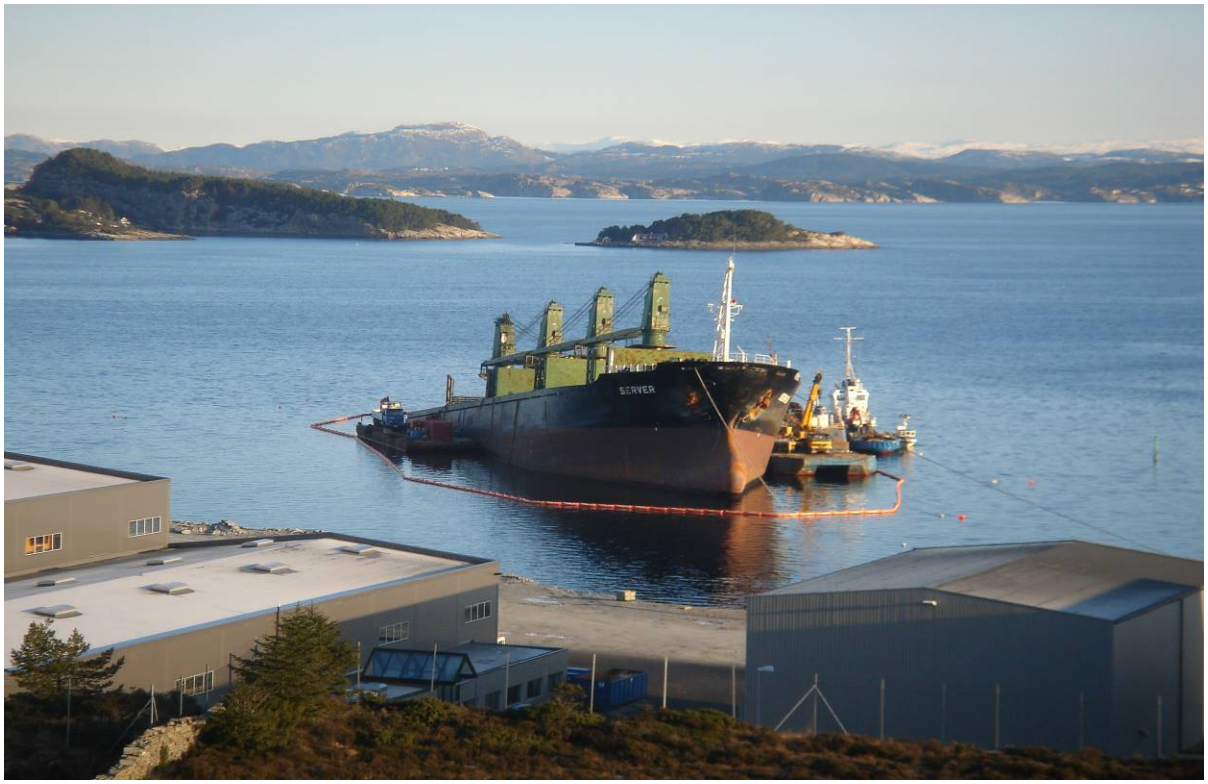
The risk does not decrease after an accident has already occurred. Small accidents happen quite often along the Norwegian coast, and there are close encounters every single day. A good oil spill response can prevent considerable damage, and is therefore a cheap insurance.

Introduction

Until the “Server” accident, the government had not given any additional budget appropriation, compared with its predecessors. This is quite the opposite of what the government proclaimed in the “Soria-Moria” statement, and what the government parties said about the needs regarding sea safety and oil spill response when in opposition.

The “Soria-Moria” statement:
“The oil spill response must be reinforced, and we must do more to prevent accidents and catastrophic consequences”
“The government will guarantee a good capacity of tugboats with a rapid response along the entire coast”

No imaginable preventive measures would have prevented the grounding of “Server”. This grounding seems to result from the combination of bad boatmanship, bad weather and bad luck. To improve safety at sea, we must invest in preventive measures, but some accidents will happen in spite of these. Therefore we need a good oil spill response. If the oil spill response is to reach an acceptable level, money must be put on the table!



***The forepart of ”Server” prior to unloading.* © WWF/Nina Jensen.**

Short summary of the oil spill clean-up after the “Server spill

The cargo ship “Server” grounded outside Fedje on January 12th 2007. The twenty year old Cyprus-registered ship was carrying 585 tons of fuel oil and 72 tons of diesels. The crew of 25 were evacuated, and luckily there were no injuries. Late the same evening the ship broke in two halves. The forepart of the ship was brought to an emergency port, and was emptied for oil. The stern part of the ship remained grounded, and after two months it is still uncertain if there is any oil left in the ship. The stern ship might still contain 30-50 tons of fuel oil, but this will not be known for certain before the next couple of weeks, when an attempt will be made to pump it. It is estimated that about 370 tons of fuel oil (type IFO 380) was spilt into the sea. The oil slick spread over a distance of 170 km.

On Sunday the 14th of January the Norwegian Coastal Administration asked WWF to mobilize our volunteers, and we participated with about twenty volunteers every day during the whole operation, and a total of 130 persons. WWF's volunteers contributed to removing some 230 tons oiled wastes at Fedje – and WWF has received very good feedback from the municipality of Fedje, The Norwegian Coastal Administration and IUA (Intermunicipal Acute Pollution response) stating that our effort is necessary and that our volunteers do great work.

WWF's volunteers during the clean-up operation at Fedje. © Alexander Sletten

In total, throughout the operation, about 550 tons of oiled wastes were collected from the shore and 180 tons emulsion from the sea. Another 200 tons of fuel oil was pumped from the ship. Up until today, 4 500 whole working days has been used in the cleaning of the shore.

"*Clean Coast!* – WWF's voluntary oil spill response" is WWF's project for training volunteers in oil spill response and practical beach sanitation after oil spills. A database has been established with the names and details of the volunteers that have completed the training, and that will be contacted in the event of an accident. The project has been developed in order to strengthen the oil spill response in Norway through renewed capacity and new resources. The training course has been developed in collaboration with NordNorsk Beredskapssenter and in dialogue with The Norwegian Coastal Administration, and the first course was held during the autumn of 2005. Until now, WWF has completed the training of 150 voluntary oil spill cleaners. Many of these participated during the clean-up operation at Fedje. There are more than 300 people on a waiting list for future training courses.

It is estimated that the operation will last until the summer, even though it is thought that the crude sanitation will be completed around Easter. The Norwegian Coastal Administration stated to have enough personnel from the municipalities and the IUA to carry out the remaining part of the clean-up operation from mid February, and it was therefore agreed to dismiss WWF's volunteers on the 15th of February. However, the municipality of Fedje did not agree that volunteers were no longer needed, and asked The Norwegian Coastal Administration to keep WWF's volunteers a couple more weeks. WWF continued the work at Fedje for a few more weeks, until the 4th of March. After an agreement with The Norwegian Coastal Administration, WWF will participate in the decision of when the clean-up can be considered completed.

"Server" has shown the deficiencies in beach sanitation in Norway

The Norwegian Coastal Administration has received much criticism for the long response time in the beginning of the clean-up after the oil spill from "Server". The weather conditions were extremely bad during the first days after the oil spill, and it was consequently very difficult and sometimes downright dangerous to start some of the planned activities. It is however clear that much could have been done, if different equipment had been available more rapidly, and if enough response personnel were used in the right way. The Norwegian Coastal Administration should have prioritised sending people from the operational management to Fedje, for example the Head of Emergency Response, experts and spokespeople, in order to explain to the local population, the public and to the media what could be done – and what could not be done because of the weather. WWF's mobilization of our volunteers was just as fast, if not faster; we received the order of mobilization from The Norwegian Coastal Administration on Sunday the 14th and we started working on Tuesday the 16th (on Monday the 15th the weather was not good enough).

In Norway the main focus is on the onboard equipment and professional crew, while the capacity to carry out effective beach sanitation is quite bad. When the oil reaches the shore the access to personnel is the limiting factor for the efficiency of the clean-up operation. In Norway, the access to trained personnel is far from good!

The “Server” accident showed that many municipalities was affected by the oil spill and had a need for beach cleaning operations. Only at Fedje the beach cleaning operation began fast and properly, not least because of WWF’s voluntary oil spill response. At Austrheim nothing happened for several days after the operation at sea was completed. The reason for this is still somewhat uncertain, but it is clear that the lack of crew and failure in organizing those available led to the absence of beach sanitation. This of course implied that there was a lot of catch-up to do.

It is assumed that the clean-up operation after “Server” will continue until this summer. The total cost is expected to exceed the cost of the cleaning of the oil slick from “Rocknes” that reached about 135 million NOK. The clean-up after “Rocknes” proved the need for increased resources in the form of competent crew and equipment that could contribute to strengthen this part of the preparedness. Even though the polluter generally should pay for the damage, we know that the Norwegian state pays part of the bill. A good oil spill response might prevent important damages, and is consequently a cheap assurance.

We know from experience that an oil spill at sea might have serious consequences. “Exxon Valdez”, “Erika” and “Prestige” are all sad examples of how bad things can get, and how expensive it may turn out to be. Most coastal communities depend upon a clean and productive sea, and will not only suffer from the direct consequences of oil pollution. Experience shows that the biggest economical consequences result from market failure in the aftermath of the accidents for a larger period of time. Two years after the “Prestige”-accident the unemployment in the fisheries was still above 20% and the total costs were estimated at unbelievable 40 billion NOK.

The volunteers made an extraordinary effort during the clean-up operation. © WWF / Nina Jensen.

WWF's proposals to strengthen Norwegian oil spill response and improve the safety at sea

A great push is needed for the quality of the oil protection equipment

A description of the status for oil spill response equipment and other emergency-equipment within the State's oil spill response with a proposal for an investment plan for the period 2006-2010 was, in February, finally released after 16 months of being withheld. The fact that the Norwegian Ministry of Fisheries and Coastal Affairs chose not to publish this report for the general public, is of course entirely unacceptable, and this shows by itself very clearly that things are going badly. And, yes, - they are! The Norwegian Coastal Administration states that there is a need for at least 260 million NOK within year 2010, to reach the recommended response level. 150 million NOK that WWF believes are needed instantly, correspond to what according to the report is recommended as an increase for last year and this year, as well as the re-establishment of the depot at Fedje. The report is based to a large extent on the Norwegian Pollution Control Authority considerations of the needs for oil spill response equipment from 2001, and has not accounted for the increasing risks, for example the huge increase in oil transport from Russia, both in the Northern part of Norway and through Skagerrak. Increased petroleum activity leads to increased coastal traffic, and also increases the risk by its own nature. Therefore, WWF believes that 260 million NOK is a low estimate of the resource needs.

The depots contain old and poorly kept equipment. About 35 000 m (of a total of 40 000 m) of the oil booms at the oil spill response depots were produced over 20 years ago. Some has been given some upgrading, but is still based on heavy manual handling. The equipment must be upgraded as soon as possible. With today's replacement rate (granted resources) it will take over 60 years before the equipment in the deposits is upgraded. Money has been granted for the upgrading of equipment on nine of the depots (12 million NOK granted by the former government). The equipment has supposedly been ordered for a couple of deposits, but has not been put in place yet.

The Parliament processed Stortingsmelding nr 14 (2004-2005) *"Paa den sikre siden - sjosikkerhet og oljevernberedskap"* ("On The Safe Side - Sea Safety and Oil Spill Response") in May 2005. The Committee of Transport and Communications held stated about the oil depots:
"The committee believes that it is necessary to upgrade the depots, and asks the Government to make its own proposal concerning the re-establishment of Fedje as a main depot. The committee asks the Government to establish a depot for emergency equipment for fuel oil in the south-east of Norway, as well as in Stavanger, Aalesund, Bodo and Hammerfest."

WWF welcomes that the Government, which for a long period had supported the re-establishment of the main depot at Fedje, finally has decided that it is to be re-established. Unfortunately, we know that a depot at Fedje could have saved a lot of cleaning and the lives of many seabirds. But it is never too late! We expect the depot at Fedje to become a model of how good the situation is going to get in all the depots: with modern and sufficient equipment, both for operations at sea and at the beach.
The depots lack equipment for beach sanitation. At Fedje, it took one week before quite simple but indispensable equipment like small spades were available. Health and safety equipment, such as face masks, overalls and gloves, must be provided. Protective equipment must be within reach for more than a total of 1 000 persons. Bark chippings and other absorbents must be ready for use.

All municipalities must have a plan and some equipment! This does of course not only apply for the coastal municipalities. All municipalities in Norway have a connection with lakes, streams and the sea. The oil spill in Glomma from the Borregaard Factory at Fredrikstad in March 2006 shows the need for response also in rivers and streams. Every municipality must have a "starting kit" with necessary equipment to get started, until the full operation is commenced. This might be a container with simple beach sanitation equipment, protective clothing, bark and other absorbents and boom systems.

The Norwegian Coastal Administration must also have access to equipment and vessels in order to maintain the whole operational chain in the most rapid way. The Norwegian Coastal Administration's oil spill response vessels are of importance, but they are few and old. A renewal plan for vessels in oil spill response is needed.

Recommended steps and measures:

- The oil spill response depots must be upgraded, 150 million NOK must be granted immediately
- The report from The Norwegian Coastal Administration that was kept secret until recently from the 21st of October 2005 *"Status beredskapsmateriell oljevern i forhold til anbefalt beredskapsnivaa"* must be taken seriously! There is a need for at least 260 million NOK within the year 2010. The re-establishment of the main depot at Fedje was not part of the calculation, but is estimated at 20 million NOK. WWF believes that 260 million is an extremely low estimate. 150 million corresponds to the estimated need for 2005-2007, as well as the costs for a main depot at Fedje. The sum does not include expenses for other equipment, such as upgrading of the tugboat response
- The substitution of old oil booms must begin immediately
- Equipment for beach sanitation must be made available in the depots

- The Norwegian Coastal Administrations oil spill response vessels are few and old. A renewal plan is needed
- All municipalities must have equipment to be able to begin a clean-up operation fast, a "starting kit"
- Protective clothing for the crew must be upgraded and supplied with face masks, life jackets, gloves and protection overalls
- Training and upgrading the competence of crew connected to the depots must be prioritized
- The arrangement that enables the IUAs to apply for governmental support to cover training, drills and equipment must be re-established
- The depot at Fedje must be re-established shortly, and serve as an example
- To ensure access to qualified volunteers, initiatives such as *Clean Coast!* must be supported. For the cost of two million NOK, WWF can guarantee the training of 200-300 volunteers a year, keep a database of volunteers, assure mobilization in the case of an accident, and also place equipment-containers for use during the training and beach clean-up operations. WWF is the only organization in Norway that carries out such courses for volunteers and that may supply trained volunteers in an oil spill operations, and proved effective at Fedje after the oil spill from "Server".

Traffic separation schemes must be established along the entire coast

Transport by sea presents the largest environmental risk when it comes to the potential for oil spills along the Norwegian coastline. The most effective measure to secure the coast from oil spills is to make sure that the ships must sail far from land. In this way, the response/emergency organization gets more time to mobilize and support ships in need, and hence prevent the grounding of ships. Having traffic separation schemes and separation zones, one also prevents colliding ships. A coastal nation has no means of establishing regulations for international navigation outside its own territorial waters. In Norway, this means that if we want regulations more than 12 nautical miles from the coast, we have to apply to the International Maritime Organization (IMO) for an approval for such initiatives. WWF has, for a long period of time, tried to make Norway apply to IMO for a permission to establish mandatory traffic separation schemes and navigation zones for international navigation far outside the territorial waters along the Norwegian coast.

With WWF's help, traffic separation schemes from Rost to Vardo have been placed acceptably far from the shore. Even though the Government held that the schemes would be put about 30 nautical miles from the coast, WWF revealed that in the application to IMO the schemes were put much closer to land - as close as 14 nautical miles outside of Ingoy in Finnmark. In cooperation with The Norwegian Fishermen's Union we made the Norwegian Ministry of Fisheries change plans, and put

the schemes further from the shore. Traffic separation schemes along the coast in the north are consequently approved by IMO at this moment, and the initiative may be carried out as soon as in 2007.

Stortingsmelding No 14 (2004-2005) signaled that an application for traffic separation schemes for western Norway should be sent after the traffic separation schemes for northern Norway was approved by the IMO. The government is now starting a new holistics management plan for the Norwegian Sea, and WWF expects that traffic separation schemes from Lofoten and southwards is one of the initiatives in this plan.

Recommended measures:

- A traffic separation scheme must be established from Lofoten and southwards along the entire coast
- The traffic separation scheme should be placed far from the shore at 30-50 nautical miles, to secure the environment and natural resources, avoid conflicts with fishing activities and maintain response time requirements
- The AIS-system (Automatical Identification of Ships) is extended with more and better receiving- and land stations that can control that the schemes are placed far enough from the coast

Tugboat response and response time – Have you forgotten our most important insurance?

In order to secure the coast, the environment and the industry that depend on clean seas, the capacity to respond and act whenever an accident occurs must be good. This implies adequate surveillance of navigation, and national tugboat preparedness in accordance with the risk. Tugboats have to arrive quickly on location whenever a ship is in need or needs assistance. WWF believes that a 6-12 hours response time to reach ships in need must be a maximum along the entire Norwegian coast.

In 2003, the government finally established governmental tugboat preparedness in northern Norway. During the winter, three tugboats cover the sea between Rost and Vardo, a geographical distance of many thousand kilometers. After only four months of experience, the Norwegian Ministry of Fisheries and Coastal Affairs concluded that there should only be two tugboats during summertime (April-October) even though the environmental risk is higher in the summertime.

In January 2006 The Norwegian Coastal Administration published the report *"Nasjonal slepebaatberedskap",* with a proposal of the establishment of a governmental tugboat response several places along the Norwegian coast, costing 350 million NOK a year, and additional investment costs of 75 million. This report has until now not been followed with either money or initiatives. WWF has asked for the follow-up of this report since it came out, the last time during the budget process for 2007 in November 2006.

Rapid access to tugboats is our main insurance against the grounding of ships. A good capacity of tugboats in the area did not prevent "Server" from grounding - all previous experience shows that such assistance is a cheap insurance. WWF believes that it must be a governmental responsibility to prevent the loss of lives and environmental damage. It must therefore also be the government's task to guarantee that Norway has a good tugboat response.

Recommended measures:

- The government must guarantee that there is sufficient tugboat response at all times
- All tugboats must have enough towing force to handle large tankers
- 6-12 hours response time for assistance to ships in need along the entire coast
- The report *"Nasjonal slepebaatberedskap"* dating from the 18th of January 2006 must be taken seriously and the proposed initiatives must be carried out. A good start is the establishment of governmental tugboat response in southern Norway during 2007

Emergency pumping equipment for fuel oil and cargo oil must be readily available

Two thirds of all carried goods in Norwegian waters are petroleum products. Today, there is equipment for emergency pumping of cargo oil in Stavanger, Aalesund, Bodo and Hammerfest.

The south-eastern part of Norway however does not have such equipment. Emergency pumping equipment for tankers must be accessible along the whole coast and within reasonable time. Equipment for pumping of fuel oil is decided to be deployed at nine of the 15 state depots. The procurement of such equipment has just begun, and not yet on location at any of the planned depots.

Recommended measures:

- Emergency pumping equipment for emergency emptying of tankers must be within reach along the whole coast and within reasonable time, 12-24 hours

- Emergency pumping equipment for fuel oil must be available along the whole coast with a response time of 6-12 hours.

Emergency ports and beaching locations must be better planned

The localization of emergency ports and beaching locations for ships in need, must be better coordinated with local knowledge, an overview of vulnerable nature, existing protected areas, industries, and with the coming marine protection plan. Environmental considerations must be of greater importance than whether or not it is practical to beach a big tanker.

Recommended measures:

- Plans for the localization of emergency ports and beaching locations must be carried out in cooperation with local authorities, the counties' environmental protection department and industry
- The plans must pay special attention to the established protected areas and the coming marine protection plan.

Increased investment in research and development

Equipment and oil spill booms that can handle great waves, icing and cold temperatures, and being handled in the dark and in bad sight are in short supply today. Further on there is a need to increase the knowledge of different oil types, how these react in saltwater, at different temperatures, and which measures that might best handle these. It is encouraging that the Government has adjusted for the lack of such knowledge, increasing support to projects to test out the behavior of different oil types on water.

The area that has had the least attention, and where the need for new technology and new solutions probably is strongest, is the coastal zone when the oil has reached the coast.

Recommended measures:

- Increase the support for research and development of technology and solutions for oil spill response in the coastal zone.

A response plan for accidental spills of ballast water is needed

Many thousand kinds of ballast tanks are transported all over the world. When a ship loads cargo, ballast water is released. When invasive species such as bacteria, algae, fish and shellfish are released into new locations, they may cause ecological, economical and social catastrophes. Invasive species are almost impossible to remove from the ecosystem once they are established, and the damages might be irreversible.

Norway decided to ratify IMO's ballast water convention just before Christmas in 2006. The Minister of the Environment has said that a response plan should be prepared for measures against acute spills of ballast water, and that she also considered the Norwegian Coastal Administration to be the right authority to guarantee this. However, The Norwegian Coastal Administration has not yet been assigned the mission to prepare and work out guidelines and plans for this. The threat of invasive species through ships' ballast water has not been taken seriously, and this must change.

Recommended measures:

- A program for handling the threat of spreading invasive organisms from vessels' ballast water in the event of accidents must be established as soon as possible, including plans for treating ballast water.

Establish an emergency response unit for oiled wildlife

WWF believes that we have a specific obligation to clean up animals' oiled living areas fast, and to have a plan for handling oiled wildlife. Rehabilitation of oiled wildlife might be difficult and time-consuming, and there is a considerable lack of proficiency to carry out this properly, but we need to have a plan.

Seabirds are especially exposed and vulnerable to oil spills. Several of the seabird populations along the coast are already quite reduced as a consequence of overfishing and lack of food. We also know that climate change, environmental toxins, habitat destruction and bycatch in fishing equipment contribute to this reduction. Under these circumstances, even a small oil spill may have huge consequences for local populations.

There is no governmental unit or division today that has the direct responsibility and proficiency to collect and rehabilitate oiled wildlife and especially birds. The number of oiled birds and birds lost as a consequence of the oil-pollution after “Server” is among the highest we have had after an oil spill in Norway. One believes that close to 10,000 birds died as a consequence of the oil spill, which is a

considerable number. In comparison the “Rocknes”-accident had a mortality rate of between 2 000 – 4 000 birds.

The “Server” accident has shown that it is very unclear who is responsible for handling oiled wildlife. The Norwegian Food Safety Authority said “go out and shoot!”, while other authorities said “don't shoot”. WWF expects that guidelines concerning who decides what regarding oiled wildlife will be prepared in response.

At the beginning many believed that the damage to seabirds after the “Server” oil spill was not of great importance. But the proportions were, as a matter of fact, more considerable. Over 80 % of the counted Common Eiders at Fedje were covered with oil. Other species that were registered with oil damages around the island were European Shag, Long-tailed Duck, Little Auk, Herring Gull, Atlantic Puffin, Common Guillemot and Black Guillemot. Many of these are also on the Norwegian Red List over threatened and vulnerable species. Fortunately, there were unusually few birds in this area when the accident occurred because of the season. There were larger quantities of birds in Oygarden, and here the damages were unexpectedly high. This was also the situation on the west side of Austrheim. Most of the observed Common Eiders were oiled.

WWF were allowed to rent premises from Havstad-Tinn at Fedje, and rapidly established housing for oiled birds, in cooperation with the bird rehabilitation organization, SWAN. The Norwegian Coastal Administration was contacted after a few days and signed an agreement with SWAN, so that the rehabilitation of the birds could start. However, everything was organized so late that only 35 birds were rehabilitated. The number could have been quite different if The Norwegian Food Safety Authority had not encouraged people to kill the birds, and an active search and collection of birds had started early. It is very difficult for most people to judge whether a bird is critically oiled, or if it would be possible to rehabilitate. Experience of rehabilitation from other countries shows that it is possible to rehabilitate over 70% of all oiled birds, and that rehabilitation is usually easiest to carry out on the most heavily oiled birds. Shooting birds may frighten and stress other birds, and may even result in the oiling of more birds during their attempt to escape. WWF believes that the authorities should have their proficiencies improved through training and courses about this as soon as possible.

Experiences from “Server” also show that there is a need for guidelines about how to handle dead wildlife. It took a long time before a place to deposit dead birds was established. Whether or not these birds were finally registered, is still uncertain.

Runde Environmental Center A/S is currently building and establishing facilities for the rehabilitation of oiled birds at Runde in More and Romsdal. Both Runde Environmental Center A/S and SWAN may contribute to increase competence within this field, which is urgently needed.

Recommended measures:

- A response unit must be established with the responsibility for oiled wildlife. This should be in cooperation with The Norwegian Coastal Administration
- The response unit should plan and organize for a rapid action plan in the event of an oil spill, and guarantee that necessary equipment is available at the depots
- A reception and rehabilitation centre for injured animals shall be established
- Guidelines must be made for the euthanization of badly injured animals
- Guidelines must be made for reception, registration and handling of dead animals
- IUA and the authorities that might get involved with questions concerning oiled animals, especially birds, must be given training and knowledge about rehabilitation, and about which techniques that should be used in the different situations.

Ending

Norway has some of the world's biggest fish populations, and exports fish worth more than 30 billion NOK every year. The fisheries and sea trade depend upon clean seas and proper management of the resources. These industries employ more than 50 000 people directly, and are especially important for local communities and industry. The tourism industry is growing, and extraordinary, unspoiled nature is with no doubt the main product.

The Norwegian coast is the spawning- and nursing grounds for our biggest and commercially most important fish stocks. Pollution from petroleum products is especially dangerous for eggs and larvae, and might have serious consequences for whole generations of fish. As well as housing over 150 species of fish, Norwegian sea areas is home to many marine mammals, otters and enormous seabird colonies. Norway has a special responsibility to take care of many of these species, both through different conventions and through agreements aimed at maintaining biodiversity. We cannot allow ourselves to expose our extraordinary nature and this treasury of resources to insufficient safety at sea and inadequate oil spill response.

Norway has one of the most extraordinary coastlines in the world, and the fisheries and sea trade completely depend upon an unspoiled sea and good resource management. © WWF-Norway/Frode Johansen.

Conclusion

WWF's recommendations for initiatives to strengthen Norwegian oil spill response and improve the safety at sea

1) An upgrade of oil spill response equipment and depots is necessary

- The oil spill response depots must be upgraded, 150 million NOK is needed immediately
- The report from The Norwegian Coastal Administration from the 21st of October 2005*"Status beredskapsmateriell oljevern i forhold til anbefalt beredskapsnivaa"* must be taken seriously. It is estimated that at least 260 million NOK is required within 2010. The re-establishment of the depot at Fedje was not included in this calculation, but estimated to 20 million NOK in investment costs. WWF believes that 260 million is an extremely low estimate. 150 million corresponds to the estimated need for 2005-2007, including the costs for a depot at Fedje. The sum does *not* include expenses for other equipment, such as the upgrading of tugboat response.
- The replacement of old oil booms must begin immediately
- The equipment for beach sanitation must be placed in the depots
- The Norwegian Coastal Administration's oil spill response vessels are few and old. A renewal program must be established
- All municipalities must have a "starting kit" to start a clean-up operation fast
- The access to protective equipment for the crew must be guaranteed and supplied with face masks, life jackets, gloves and protective clothing
- Training and improving the competence of crew connected to the depot must be prioritized
- IUA must be able to apply for governmental research and development aid for the payment of training, drills and equipment
- The depot at Fedje must be re-established fast, and set an example for the future
- To ensure the access to competent volunteers, initiatives like WWF's *Clean Coast!* must be supported. For two million NOK, WWF can guarantee the training of 200–300 volunteers per year, maintain a database over volunteers, guarantee mobilization in the event of an accident, and also deploy equipment containers for use in both training and in beach clean-up operations. WWF is the only organization in Norway that carries out such training courses for volunteers and that can supply trained volunteers in an oil spill operation, which was proved after the oil spill from "Server"

2) Traffic separation schemes must be placed along the whole coast

- Traffic separation schemes from Lofoten and southwards must be established along the entire coast
- Traffic separation schemes must be put far from the coast at 30–50 nautical miles, to secure the environment and the natural resources, avoid conflicts with fishing activities and maintain the response time
- The AIS-system (Automatic Identification of Ships) must be extended with more and improved receiving- and land-stations that guarantee that the schemes are put far enough from the shore

3) Tugboat response and response time – Have you forgotten our main insurance?

- The state must guarantee that there is always sufficient tugboat capacity
- Tugboats must have enough towing force to handle big tankers
- 6-12 hours response time for assistance along the entire coast
- The report *"Nasjonal slepebaatberedskap"* from the 18th of January 2006 must be taken seriously, and recommended initiatives must be carried out
- Start by establishing governmental tugboat response in southern Norway in 2007

4) Emergency pumping equipment for cargo oil and fuel oil must be readily accessible

- Emergency pumping equipment for tankers must be accessible along the entire coast, within reasonable time, 12-24 hours
- Emergency pumping equipment for fuel oil must be accessible along the entire coast with a response time of 6-12 hours

5) Emergency ports and beaching locations must be better planned

- Plans for the location of emergency ports and beaching places must be carried out in cooperation with local authorities, the counties' environment protection divisions and industries
- The plans must take special care in regards to the already established protected areas and the planned marine protection plan

6) Increased research and development

- Increase the support for research and development within the development of technology and solutions for oil spill preparedness in the beach zone.

7) Prepare an emergency response plan for accidental spills of ballast water

- A plan for handling invasive species from ballast water in case of accidents must be established as soon as possible, including plans for the treatment of ballast water.

8) Establish an emergency plan for handling oiled wildlife

- A unit with the responsibility for oiled wildlife must be established, in cooperation with The Norwegian Coastal Administration
- The response unit should plan and organize for a rapid action plan in the event of an oil spill, and guarantee that necessary equipment is available at the depots
- A reception and rehabilitation centre for injured animals should be established
- Guidelines must be made for the euthanisation of badly injured animals
- Guidelines must be made for reception, registration and handling of dead animals**.** IUA and the authorities that might get involved with questions concerning oiled animals, especially birds, must be given training and knowledge about rehabilitation, and about which techniques that should be used in the different situations.

WWF is working to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

for a living planet®

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