

The Bow Jubail oiled wildlife incident: success factors of an international tiered response on the basis of standards of good practice

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Abstract

In June 2018, about 218 metric tons of heavy fuel oil gushed into the harbor of Rotterdam (NL) following the rupturing of the hull of the Bow Jubail at a jetty. Due to tidal activity, the oil from the unloaded chemical tanker quickly spread out over a 30+ km waterway where many hundreds of Mute swans were moulting at the time. A citizen's initiative quickly led to the capture of over 200 swans from the water and shores, and their transport to some bird rehab centers in the immediate neighborhood. For the authorities this massive impact that overwhelmed the available resources of the permanent centers was the trigger to activate the national oiled wildlife response plan. The activation of the national plan goes hand in hand with the decision to build a large temporary facility that needs to be fully operational within 48 hours to receive the impacted live animals for treatment. The building of the such a facility, but also the staffing that is needed to care for 600 impacted swans is a challenging task and needs fast decision taking by experts who can oversee the particular needs of swans, and are able to inform logistics about equipment and materials needed.

In parallel, a large number of experts must be mobilized who can lead and process the impacted animals once the temporary facility is ready for operations. For some part these resources were available in the Netherlands, but many more experts needed to be mobilized from abroad. The mobilization procedures of both EUROWA network and the GOWRS network were activated, leading to a large number of experts who indicated their availability. Meanwhile, the authorities took decisions on the authorization of the international mobilization, and when green lighted, the experts were asked to come over.

This paper describes the decision making in the early days, and the way that arriving experts were deployed in the facility. The use of international guidelines for this process and the ease by which international experts could work together thanks to many years of investments into local and international preparedness will be highlighted. The rehabilitation of 522 mute swans took a full month (30 days), after which 97.5% of the animals had been successfully released.

Introduction

The incident

On June 23, the 183-meter-long, 37500 dwt chemical tanker *MS Bow Jubail*, operated by the Norwegian company Odfjell, collided with a pier a jetty while it was on its way to the assigned berth for loading. The incident took place at about 14:30 local time at Derde Petroleumhaven, located in the Botlek area, managed by the Port of Rotterdam. The *MS Bow Jubail* was not loaded with cargo at the time of the incident; it had a pilot on board and was being escorted by

a tug when it struck the jetty against the starboard hull. The hull was breached rupturing the bunker tanks. Some 217 tons of fuel oil spilt out of the *MS Bow Jubail* into the harbour, of which some 180 T eventually was recovered mechanically from the water, in the immediate surroundings of the vessel.

Much of the oil, however, spread with the tides throughout a large proportion of the harbour, and via the Nieuwe Waterweg even reached the North Sea, see figure 1. This spreading of oiling caused a large number of birds in the harbour to be affected by oil.

Wildlife impacts and citizen response

Although more species were known to be impacted¹, the most obvious victims were the numerous mute swans that were moulting in the harbour area in many hundreds of individuals. The nice sunny weather during the weekend of the spill, and during the days that followed, brought many Rotterdam citizens to the cool shorelines of the harbour, and the oiling of hundreds of mute swans happened literally before their eyes. This caused a massive self-activation and mobilisation of hundreds of citizens and various para-professional animal care groups (operating so called animal ambulances), in an attempt to rescue the swans (see figure 2), and transport them to the animal rehabilitation centres nearest to the harbour area (see figure 4).

On the Sunday evening, circa 30 hours after the incident, more than four hundred mute swans were counted at four locations, three rehabilitation centres and in one building of opportunity. At that time, another 600 oiled mute swans had been counted in the field by professional ecologists, in only a part of the total impacted area. This led to the best verified assessment of the impact: at least 1000 swans oiled, of which ca 400 already captured.

Materials and methods

Activation of the wildlife response plan, contracting

The activation of the wildlife response plan went via a notification chain involving the local harbour wildlife rehab centre (Karel Schot), the national oiled wildlife coordinator of SON-Respons, and the national preparedness contractor, Sea Alarm. Sea Alarm contacted the Duty Manager of Rijkswaterstaat (RWS) and on Sunday 24 June the decision was taken to activate the national plan. As per this activation, a location was identified where a temporary wildlife hospital (TWH) would be realized. RWS mobilized its contractor EcoLoss to realise the TWH within 48 hours. On the request of RWS, Sea Alarm agreed to coordinate the national (via SON-Respons) and international (EUROWA, GOWRS) mobilization of expertise.

Stabilisation of impacted birds, mobilization of responders

While the TWH was being realized, more than 400 captured impacted swans were brought to rehab centres in the vicinity of the harbour area, most of which to Karel Schot. Each of these centres were instructed to stabilize the animals pending their transport to the TWH in due course. The personnel of other Dutch rehab centres were asked to mobilise to take roles within

¹ e.g. rehab centre Karel Schot received 28 animals of 10 other species besides 283 mute swans

the TWH once it would become operational. In addition, organisations from the EUROWA and GOWRS network were contacted to provide expert resources.

Building the TWH

Building of a TWH had been exercised in the Netherlands in 2013 as part of the multi-annual preparedness programme. RWS had kept the same contractor (Ecoloss) for this specialist job. Ecoloss and two EUROWA experts worked together to realize a TWH specially designed for the rehabilitation of 600 oiled swans. The EUROWA equipment stockpile was mobilized from Hamburg to provide various instruments and consumables. The TWH was built on the parking of the visitor centre of a storm surge barrier. The facilities of the visitor centre (meeting rooms, office, canteen) were used to house an on-scene command post. A number of portocabins were placed on the parking for additional office housing and volunteer registration.

After 48 hours, the TWH was ready to receive oiled swans both from the field and from the stabilization centres. At that point, still the washing facilities were under construction. Due to infrastructure limitations, pools were realized ca 500 m down the road of the TWH, and were filled with fresh and brackish water from neighbouring canals.

EUROWA guidelines and their implementation

The work floor operations of the TWH were based on the EUROWA guidelines, and the facility management system was based on the EUROWA work floor roles and responsibilities. Trained and exercised EUROWA managers were taking the lead roles in the facility, including the roles of Facility Manager and Section Heads. Other work floor roles were taken by trained EUROWA responders from the national SON-Respons network, and mobilized EUROWA experts from abroad. Responders from mobilized GOWRS organisations were easily slotted in, for the fact that the EUROWA guidelines conform global response standards.

The qualified EUROWA and GOWRS responders provided leadership on the work floor in the different operational departments. Convergent volunteers were recruited via active communication, and instructed by qualified staff in the morning before the TWH operations were commenced. Health and safety training was part of their instructions.

Results

The TWH was operational during exactly one month. A team of personnel planners was working every day to ensure that work floor capacity was always maximized in relation to the volume of operations. Staff was recruited from national resources (SON-Respons), and complemented with European (EUROWA) and international (GOWRS) resources. Volunteers were deployed on the basis of their multi-day availabilities. Figure 2 provides an overview of the personnel resources on the work floor in the course of the 30 days. Internationally mobilised EUROWA and GOWRS experts provided multiple day deployments (weeks rather than days) and therefore provided the expert backbone of the operations. Experts from the national SON-Respons network committed to shorter shifts, but did multiple shifts during the four weeks operations.

A total of 1387 work days were involved in the TWH operations, of which volunteers did more than half.

From the documentation on flows of animals through the TWH, the overview of figure 4 was produced. It demonstrates how stabilized (from stabilization centres) and unstabilised (from the field) swans were admitted to the TWH from day 3 onwards. The last swans were released on day 31. A total of 10,403 “Swan Days” were recorded during the life time of the TWH. Figure 5 shows the overall intake into the TWH and the results in terms of successful releases, euthanasia and work floor mortalities. It also shows how useful the availability of permanent rehabilitation centers is in relation to the concept of a TWH. They provide a buffer capacity in the days that the TWH is built, but they also provide additional capacity for intensive care treatment.

Tables 1-3 show the overall result of the swan rehabilitation in the Bow Jubail incident response. In total 522 swans were admitted in the TWC. From these, rehab centre Karel Schot took over 14 swans for intensive treatment, of which 12 eventually were successfully released (85.7%). Of the remaining 508 swans the TWC successfully released 497 (97.8%). Of the total of 522 swans 6 animals died in care; another 8 were euthanised. The overall release was 509 swans (97.5%).

National field monitoring data have demonstrated that 50 different individuals from the 509 swans that were released have been spotted in a total of 65 observations (until Oct 2019). A few observations concerned animals found dead. These observations were related to botulism and wounded animals in the first winter (6 months after their release).

Conclusions

The Bow Jubail swan response can be considered a success in various ways. It demonstrated the success of a strategy in which a country (Netherlands) not only develops a preparedness plan, but also makes that plan subject to a multiple year implementation plan that consists of infrastructure (equipment and a contractor that can build a TWH within 48 h) and a training/exercise programme. Adopting the EUROWA standards for national training and exercises is another success factor. It ensures that the standards on the basis of which national responders are trained as Tier-1 responders are internationally agreed, and enables to bring in resources from abroad that are also trained and exercised to the same standards. It allows these international resources to blend seamlessly into a truly tiered response. It demonstrates the value of the concept of EUROWA, in which mutual response can be provided between different countries (Tier-2 response). The Bow Jubail response also demonstrated the seamless integration of GOWRS resources from outside of Europe into the response (Tier-3 response). Again this is facilitated by the fact that EUROWA standards are based on standards and principles that are shared between the world’s leading wildlife response organizations. Although swans are quite robust animals, that live in densely populated areas and therefore used to people, still they have a large body size, require considerable floor space for their stabilization and require some strength in handling. The rehabilitation of over 500 swans is therefore a considerable achievement.

This paper has been based on Nijkamp (2018).

References

Nijkamp (2018). Oiled wildlife response Rotterdam 23 June- 24 July 2018; External technical report on the rescue and rehabilitation of 522 impacted swans. Sea Alarm Foundation, Brussels, Belgium.

Abbreviations

EUROWA	European Oiled Wildlife Assistance (European cooperation between organisations who aim to work according to international standards of good practice for oiled wildlife response)
RWS	Rijkswaterstaat (Dutch authority for roads and waterway management)
SON-Response	Dutch organisation for cooperation on marine wildlife emergencies, that facilitates the joint operational preparedness of specialized rehabilitation centres in the Netherlands.
TWH	Temporary Wildlife Hospital

Figures and tables

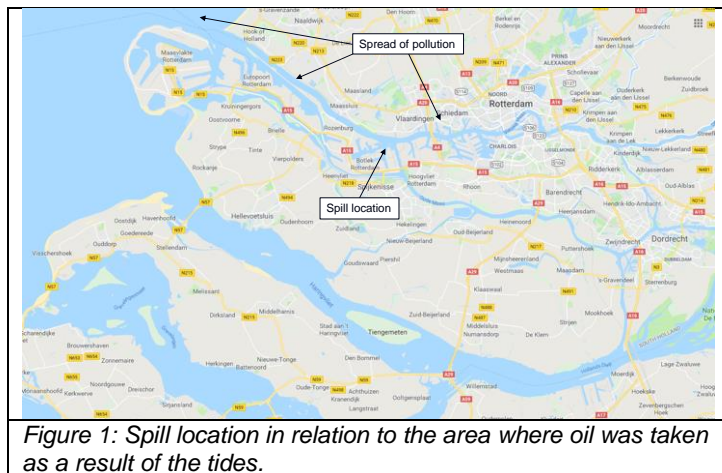


Figure 1: Spill location in relation to the area where oil was taken as a result of the tides.

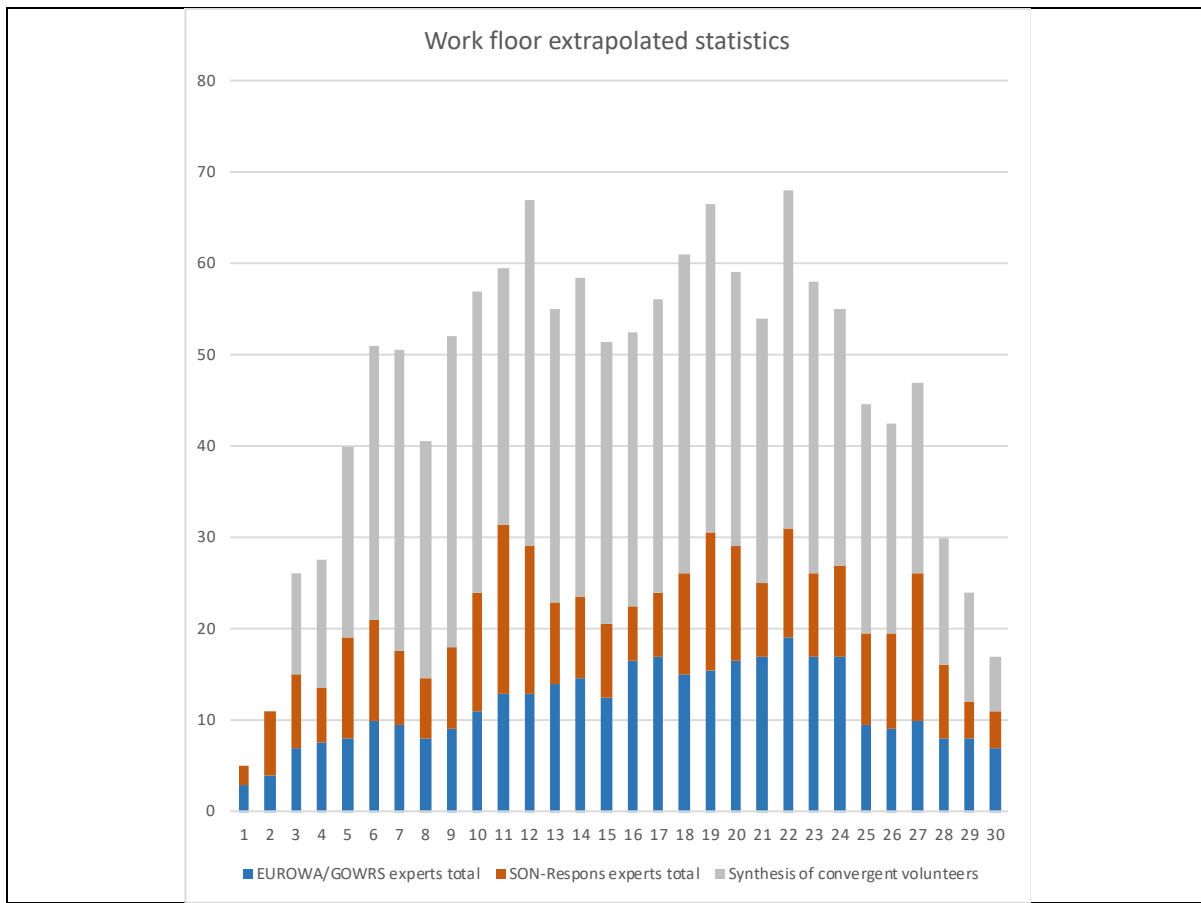


Figure 2: Extrapolated statistics on personnel on the work floor.

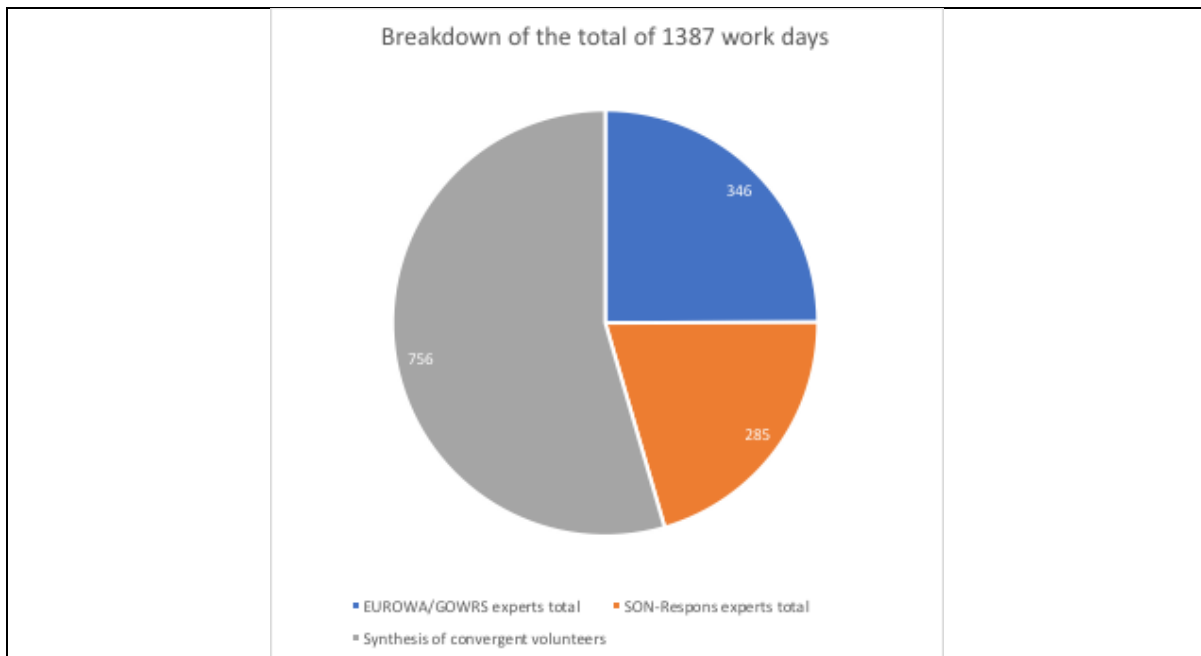


Figure 3: Breakdown of the total of 1387 work days into the groups that were represented.

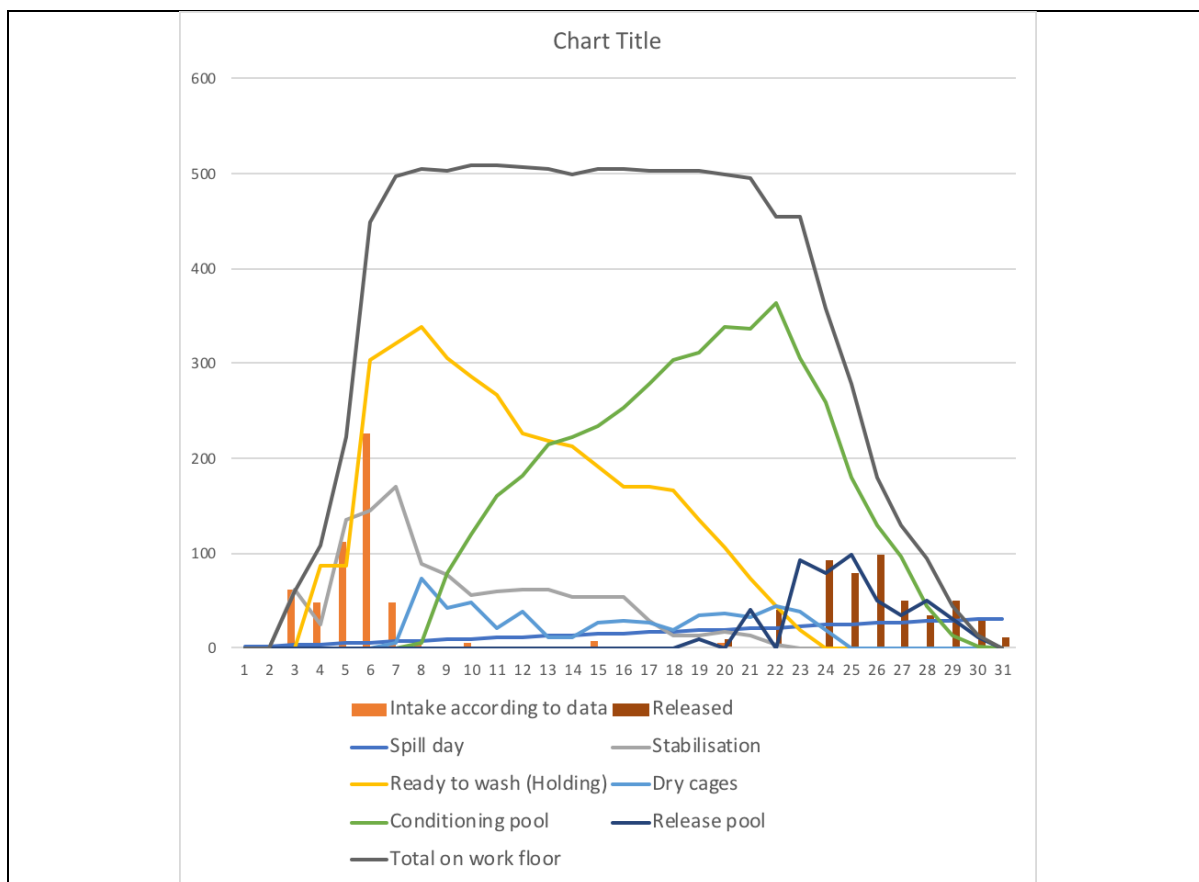


Figure 4: Graph representing the quantitative data from table 1. Horizontal axis shows the days of the spill (incident took place on day 1). Vertical axis shows the numbers of swans. The intake and release statistics are presented as a bar graphs, the other data linear. The graphic shows how the total population (black line) increased quickly to just above 500 swans after the major intakes from the stabilisation centres from day 3 to day 7 (orange bars). The population started decreasing when release operations (brown bars) were undertaken from day 22 onwards. In the intermittent period it is visualised how animals migrated from “stabilisation” (grey line) to “ready to wash” (yellow line), and from there appearing on pools (green line).

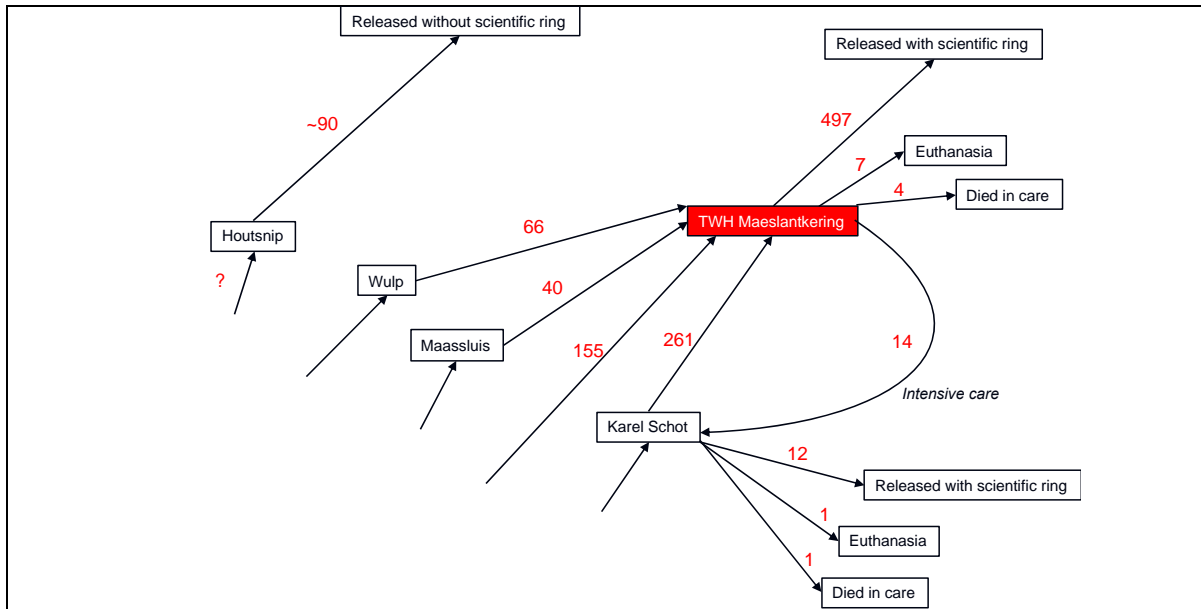


Figure 5: An overview of quantitative data with regards to numbers of swans, where they came from, and what their fate was in relation to the operations of the TWH. A total of 522 were brought into the TWH, of which 509 eventually were released according to the criteria of the EUROWA protocol, with a scientific ring.

TOV result	Numbers	%	Karel Schot result	Numbers	%	Result K Schot +TOV	Numbers	%
total (excl birds to K Schot)	508	100.00	Received from TOV	14	100.00	Received	522	100.00
died	4	0.79	Died in care	1	7.14	Died in care	5	0.96
euthanised	7	1.38	Euthanised	1	7.14	Euthanised	8	1.53
released	497	97.83	Released	12	85.71	Released	509	97.51

Table 1: Overall result from TWC, excluding the 14 swans that went to Vogelklas Karel Schot

Table 2: Result from Vogelklas Karel Schot on 14 swans received from TWC

Table 3: Overall result from the rehabilitation of 522 swans that were received by the TWC (including the 14 swans that went to Vogelklas Karel Schot)