Rehabilitation, science and communication: always together

Start

In 1971 - 46 years ago - the seal crossed my path. I was asked to take over the work of a family that reared seals without mother and released them when they were strong enough to survive on their own. In the early 1970s - The hunt in The Netherlands had stopped only 10 years before - there were only 350 seals left in the Dutch Wadden Sea. In the delta in the South West Netherlands they had completely disappeared. That only the baby seals were shot in the seal hunt had been detrimental.

I decided to take on the challenge as I had time available because my son was already five years old. It all started with a small bath in my own garden and developed into a professional rehabilitation center, a proper hospital for seals.

From the very beginning, there was a lot of interest in the seals. I involved everyone because I thought seals were not mine; they were free, needed help - which we provided - and were free again after they were strong enough to survive on their own. The press was very interested and that gave me the opportunity to explain everyone about the situation the seals were in: seriously threatened due to hunting, pollution and disturbance. In my center all was organized around the seals in such a way that they received the best care.

Through rehabilitation and communication the seal was on the agenda.

Development

In the early years a lot of baby seals were admitted to the center, but it soon changed; more and more seriously sick animals were found and taken to my center. At that moment I understood that only care with fish and vitamins was not enough and could not save the seals. That is why I involved science and from that moment on my center started to develop into the first seal hospital in the world. A Scientific Advisory Commission was set up with leading international scientists from various universities. Often they worked in human hospitals and provided me with the latest developments in their discipline, with which we could help the seals in the best possible way.

The results obtained through science enabled us to provide better treatment and more and better information to the general public and the government. We collected and recorded vast amounts of data and conducted research in all possible areas. There was a team of volunteers along the entire Dutch coast which was available day and night and registered all relevant observations and finds. So everywhere we had our eyes and ears in the field.

Not only live seals in distress were saved, but all dead seals were recorded, samples taken and if the state of decomposition allowed it, the seals were investigated by pathologists. Through the fieldwork we also got many positive contacts with fishermen; in the collaboration with them it was possible to show that the seal was not a significant competitor. On the contrary, it became clear that a good situation for the seal is also good

for the fish and fishermen. The seal became popular as a symbol for the efforts to establish a clean and healthy Wadden Sea.

Through rehabilitation problems could be identified, through science the seals could receive better treatment and the both enabled better communication of the problems to the general public and government.

Funding

Funding is of course important. I received money from the general public (annual donations, gifts, and legacies) through which my foundation became independent from the government and other institutions. The responsibility towards the people who donated money was the reason why I founded a charitable Foundation from the start of the Seal Rehabilitation Center. The money was given to me for the seals and all had to be used for the benefit of the seals. At the same time the independent budget meant that the scientific research was completely independent from other parties and only to expand our knowledge about the seals for the seals.

Epidemic

In 1988 we were unexpectedly confronted with a large mortality amongst the common seals around the North Sea, including the Wadden Sea and the Baltic Sea. Due to our focus on scientific research, we managed to determine the cause: it was a new virus: the PDV (Phocid Distemper Virus). This was announced at a press conference in our village and immediately became world news.

Once the virus was known, we could research our databases. It was found that harp seals were carrier of this virus, but they themselves were not falling ill. Overfishing of their prey species in the Arctic waters - where they live - caused them to move southward looking for food. There they came in contact with the common seal which was naive to this virus. The first case amongst common seals was found on the island of Anholt. From there, the virus spread like a forest fire over the seal population in North West Europe.

Still, the question remained: why was the mortality so high (more than 60%)? That is why we started an investigation to determine what the effect of pollution is on the immune system of the seal. We set up a test with two groups of seals, one of which was fed with the relatively clean Atlantic Ocean herring, and the other with the "most polluted" herring from the Baltic Sea (this herring was still fit for human consumption). Regular tests were performed on the blood of the animals (never on the animals themselves). The result was that pollution proved to have a significant impact on the immune system; it is seriously depressed and only works for 40%. That fact contributed to the high mortality rate during the virus outbreak. Two scientists paid by us have completed their PhD on this research. Fortunately, the process is reversible: after a year of healthy fish, the immune system returned to normal. After the last test, all seals were released again.

This research was again world news. And it is still leading throughout the world. As a result we received questions about mortality amongst marine mammals from different countries. Our scientists went there and found many new viruses.

The marriage between rehabilitation, science and communication was essential to be able to identify the cause.

Further research

Over the years, nine dissertations have been published by scientists who conducted their research at our organization, ranging from genetic variation to the history of seal hunting and the biology of seals along the Dutch coast. In total, six dissertations are devoted to various viruses in marine mammals.

Another threat to the habitat of the seals are spills of oil and chemicals. Thanks to our quick response approach to emergency situations all over the world we also recognized the deficiencies in handling such situations. Usually we found there was nothing prepared, there were no protocols, there was no budget. That is why in 1998 I founded the global foundation SEA ALARM in cooperation with oil companies and the International Tanker Owners Pollution Federation. There are now depots for tools at strategic locations over the world, protocols, lists of organizations with experts who can help wildlife affected by oil, and there is a basic budget.

In 2002, there was again an outbreak of PDV in North West Europe. But this time the Netherlands was prepared. Thanks to our network along the coast, the outbreak was identified at an early stage. A huge operation was carried out during which about 2,500 dead seals were collected by our volunteers in the Netherlands alone. A team of scientists from Japan, Spain, Great Britain and the Netherlands performed the autopsies on all these animals. This largest autopsy session in the world, with more than 7 cubic meters of collected samples, provided a wealth of data and at least one new dissertation. It showed for example that the amount of toxic substances in fat and organs of marine mammals did not decrease since we studied this ten years earlier. Even new dangerous substances appeared. Pollution is therefore still one of the biggest threats to seals and other marine mammals.

The global interest in the work has not diminished. When we had a large number of lung worm patients in the center in the winter of 2012, international TV channels, including NBC, ABC, Al Jazeera and BBC World, showed the situation to over 2.5 billion viewers in less than two months.

Abroad

Over the years, many thousands of young people from around the world have come to work in my center to take the knowledge gained to their home country. At the same time I worked abroad as well. When we worked abroad our aim was always to make the people in

that country independent. The three element: rehabilitation, science and communication were central in all collaboration.

Since 1991, we assisted in the rehabilitation of the extremely rare monk seal in Mauritania. In 1998 suddenly a large number of monk seals died. Another country claimed that the cause was a toxic algae and subsequently the export of Mauritanian fish (one of the main sources of income) was banned by the EU. Through the research of our scientists, together with local biologists, it was proven that the monk seals had died of a dolphin morbilli virus. That virus did not affect fish and shellfish. As a result, the ban on fish exports was reversed; with this, our research saved the export of fish, which is so important for the economy of Mauritania.

Also in Lake Baikal and in the Caspian Sea, our scientists have researched seal mortality. In both cases, the cause of death was a CDV: Canine Distemper Virus, possibly transmitted by land animals (e.g. jackals).

In Iran I started over 10 years ago to make the Caspian seal the symbol of the Caspian Sea. At first, nobody knew that seals lived in the Caspian Sea. In Iran we advised the same method as in the Netherlands; it has also worked for the monk seals in Greece, Turkey and Mauritania. Involve the local population in the problems of the seals, but at the same time, pay attention to the problems of the people themselves. At all times the projects were aimed at transferring knowledge and experiences from the Netherlands, to enable the national scientist and rehabilitation centers to operate independently.

Application of rehabilitation, science and communication is universal.

Dagestan

And now we have the opportunity to help the Caspian seal in Dagestan. It started last year when I met Alimurad Gadzhiev of Dagestan State University at a meeting in Astrakhan (where also the Caspian seal was subject of discussion). His report about the situation of the seal in Dagestan sounded very worrying and mentioned many dead seals along the coast. We discussed the situation and last March he invited me to come to Dagestan to see what is happening with the seals in this country.
From there the first steps were initiated. We used the same approach as in Iran, where it resulted in success and improvement of the problem with the seals. We involved the local fishermen directly, because they are the eyes and ears in the field.

Good and constructive consultations with the local fishermen are already a fact.
It soon became apparent that not a virus was the main cause of death of all dead seals that washed ashore. Drowning in nets proved a significant cause of death. Nets which are used miles offshore from the coast proved a serious threat to the seals.
It was decided to gather the dead seals to get an indication of the numbers involved. During my visit, the first dead seal was already collected. In the following week there were fourteen dead. There is also good news. At the same time the dead seals washed ashore, one seal was saved alive from a net. To enable the release a part of the fishing net had to be cut. The

fishermen in Dagestan now receive a financial compensation for the damage to their nets, the same is done in Iran.

It is amazing to see what has happened in a such short period of time. The Dagestan State University, the fishermen and the government immediately took action to solve the problem while considering the interests for both for the seals and for the fishermen. A Seal Patrol has been organised, which monitors the fishermen's nets on entangled seals and a Beach Patrol to collect dead seals for research. And there has now begun a broad-based lobby to stop the seal hunt in the Russian part of the Caspian Sea. At present Russia is the only country to issue an annual license for killing 7000 Caspian seals.

The most recent development is a covenant between 23 universities and 3 research institutes in the countries around the Caspian Sea. They agreed to jointly investigate the situation of the Caspian seal and to emphasize that, they agreed to nominate 2018 the "Year of the Caspian Seal".

A brilliant example of the cooperation between government, local population, science and seal rehabilitation. It shows that there is in the region a strong will to help the seals. That it is done by you, the people from Dagestan and other coastal communities on the Caspian Sea, and that is essential for the future of the Caspian seal. It guarantees continuation as is becomes part of your community. Grants for projects always have an end; your will to do something has not. Through a strong will to combine rehabilitation, science and communication you can save the Caspian seal. The seal is lucky to have you all.

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