

# PRESS REPORT

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## The foundation *firmm*<sup>®</sup> in profile:

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oceans, can be formed. The encounter with the marine mammals in freedom through respectful whale watching as well as continuous educational work with information at first hand, research and schooling lead to a sensitization of the people, pursuant to the foundation's motto:

**“Only what people know about they will be able to love and protect”.**

*firmm*<sup>®</sup> is establishing research stations at different locations where scientists hand in hand with interested people record data and prepare information. The results are being presented to a broad audience at events.

At the same time *firmm*<sup>®</sup> greatly emphasizes the value of cooperative collaboration with the authorities, schools, public institutions and the media.

### STRUCTURE AND ORGANIZATION

The foundation for information and research on marine mammals (*firmm*<sup>®</sup>) was established in 1998 by Katharina Heyer with domicile in Meisterschwanden and head office in Stallikon, Switzerland. The trigger was Heyer's encounter with dolphins and whales in the Strait of Gibraltar at the end of the year 1997: She recognized that these wonderful beings and their habitat urgently needed to be explored and protected.

### FOUNDATION BOARD MEMBERS:

**Katharina Heyer:** President, Affoltern, Switzerland

**Caroline Burger:** Buchrain, Switzerland

**Prof. Dr. Patricia Holm:** Marine Biologist, University Basel, Switzerland

**Benny Stutz:** Meisterschwanden, Switzerland

**Samuel Notz:** Langnau a.A., Switzerland

### GOALS

The foundation *firmm*<sup>®</sup> is actively engaged in protecting the whales and their habitat. Its main focus is centred on research, information and clarification. As mentioned in the name, a major concern of the foundation is to share the research results with as many people as possible. It can be regarded as platform for the exchange between science and the interested layman. The foundation wants to introduce new ways of how to respectfully and ecologically handle the oceans and their inhabitants without exploiting them.

### PURPOSE

The foundation *firmm*<sup>®</sup> creates possibilities for humans to encounter marine mammals. By experiencing these animals in the wild and mediating knowledge about them, a basis of support and love to the whales and dolphins and the preservation of their natural habitat, the

## CURRENTLY FIRMM® IS REPRESENTED IN THE FOLLOWING COUNTRIES:

- Switzerland (*firmm*® Schweiz): since 1998
- Spain (*firmm*® España): since 1998

The reliable *firmm*® team in Tarifa, Spain

During the months of April to October *firmm*® operates from their location in Tarifa. The team there consists of the following persons:

- **Nina Cziczek**, office manager (since 2006)
- **Jörn Selling**, marine biologist (since 2003)
- **Barbara Lindenberg**, promotion and sales (since 2012)
- **Brigitte Achatz**, secretary (since 2013)
- **Oliver Schäfer**, office manager (since 2011)
- **Christine Schmid**, secretary (since 2015)
- **Sevi Golinvaux**, promotion (since 2018)
- **Begoña Molina Colell**, Spanish information talks (since 2017)
- **Luca Pauline Vohns**, customer service (since 2019)
- **Martina Neitsch**, customer service (since 2019)
- **Dennis Jens Köchling**, guide and information talks (since 2019)
- **Antonio Manuel Reyes Daza**, captain (since 2016)
- **Daniel Marin Cerrudo**, 2. captain (since 2018)
- **Jose Luis Pomares Fuentes**, mechanic (since 2018)
- **Francisco Javier Rodriguez Martin**, mechanic (since 2018)
- **Miguel Angel Lopez Collantes**, mariner (seit 2016)
- **Gonzalo Nuñez Fernandez**, mariner (since 2019)
- **José Manuel Escobar Casado**, mariner (since 2019)

## TASKS AND ACTIVITIES

The emphasis lays on whale and dolphin watching as well as the preparation and transmission of the collected knowledge. During the summer months, *firmm*® primarily concentrate on research. The team goes out into the Strait on boats to



Informative lectures about  
whales and dolphins

record the whale stocks and the behavior of the animals. Interested people have the opportunity to accompany these tours and take a glimpse over the shoulders of the *firmm*® team during its work. In wintertime, the information comes into focus. In collaboration with marine biologists, Katharina Heyer presents the acquired knowledge to a broad audience throughout Europe.

## AN OVERVIEW OF THE PRODUCT

- Daily observational tours with the *firmm*®-boats to the whales and dolphins in their natural habitat. From Tarifa in the Strait of Gibraltar including an half an hour informational talk and 2 hour trip (April – October).
- Special three hour tours to see the orcas in July and August.
- One week intensive whale watching course in which sustained knowledge is theoretically imparted by a marine biologist and made tangible through daily trips.
- Systematic identification, recording and interpretation of the behavior of the cetaceans over a multi-year time span. This offer is especially used by marine biology students as well as volunteers. This knowledge and the data also receive entry into the worldwide observation of marine mammals.
- Lectures by marine biologists as part of an educational program in Spanish school classes to create an understanding for the importance of the marine mammals, their habitat and their conservation (in cooperation with the Spanish environmental ministry).
- Cultural and informative events at different public places in Germany and Switzerland.
- Presence with information stands on diverse tourism trade shows in Switzerland.



Excursions to the rocky coast of Tarifa

## NUMBERS AND FACTS

The foundation *firmm*<sup>®</sup>

- has reached since its founding about 293000 guests which were informed and guided to the free living whales and dolphins in the Strait of Gibraltar on whale watching trips.
- until now has informed approximately 30000 Spanish school children about the threats for the marine mammals.
- has schooled roughly 4240 course participants (adults and children) since 1998 within one- to two week intensive observation courses.
- has offered numerous people the possibility to work as a volunteer for several months since its inception. In addition, *firmm*<sup>®</sup> has supported many pupils and students in the preparation of their Abitur, Master and Diploma theses. These were published (in German) on the new homepage [www.firmm-education.org](http://www.firmm-education.org).
- has held approximately 300 lectures in hotels, in Swiss and Spanish schools, for clubs, societies and other organizations.
- is regularly represented at tourist fairs in Basel, Berne, St. Gallen and Zurich with stands and lectures since 2001.
- offers 10-12 regular jobs in Tarifa plus additional employment opportunities during the high season.

## WE ARE GRATEFUL FOR ANY KIND OF SUPPORT.

Via Donation Account:

Bank: UBS AG, CH-8098 Zürich  
Account holder: Stiftung *firmm*<sup>®</sup>  
Swift: UBSWCHZH80A  
Bank clearing: 206

Account EUR: 206-DP134211.2  
IBAN: CH 17 0020 6206 DP13 4211 2

Account CHF: 206-DP134211.0  
IBAN: CH71 0020 6206 DP13 4211 0

A receipt for your donation goes without saying.  
This way the expense can be tax deductible.

Online through PayPal  
in Euro or Schweizer Franken  
<http://www.firmm.org/en/foundation/donation>

## The Strait of Gibraltar and its relevance for the cetaceans

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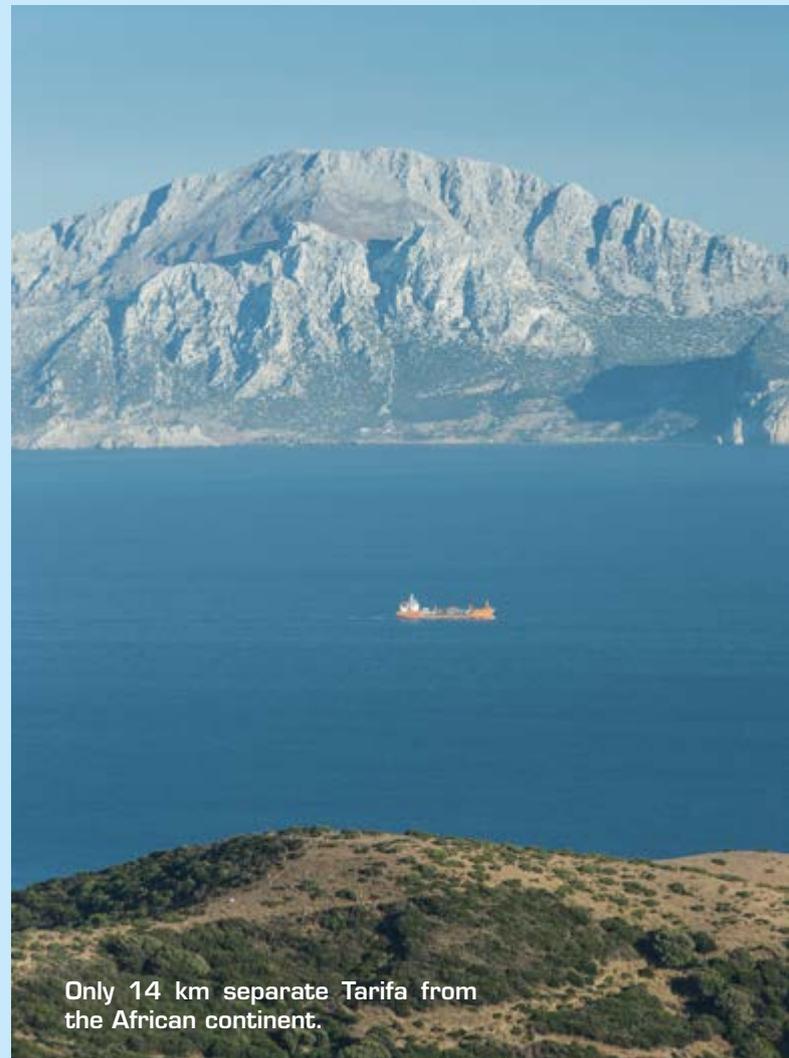
The Strait of Gibraltar connects the Mediterranean Sea and the Atlantic Ocean. It is between 14 and 44 kilometres wide, 60 kilometres long and between 300 and 1000 metres deep. Below the Strait the Eurasian and the African tectonic plates push against each other, creating the extreme depth. The *firmm*<sup>®</sup> -area of research is located at a world-wide unique intersection, home and passageways for seven dolphin and whale species.

In the water way the shipping traffic lanes also concentrate: 300 freighters (excluding fishing and ferry boats) pass through the Strait daily at relatively high speed. Inadequate wastewater treatment, the oil trans-shipment centre Algeciras with its refineries, and the new harbour Tanger Med on the Moroccan side constitute a massive ecological challenge for the whole region.

In spite of this enormous pollution and the noise exposure under water there has to be a reason why a significant population of resident and semi-resident whales and dolphins remains here. The reason has been found in the exceptionally high and species-rich food supply which is available all year round. As many regions worldwide are overfished, the animals travel in search for nutrition throughout the oceans.

But from where does the excellent supply on food in this region come? The Mediterranean Sea, with its few sweet water supplies, has a high evaporation rate which lowers the sea level about 1.00m to 1.40m per year. This creates a strong surface flow from the Atlantic into the Mediterranean Sea. Without this inflow the Mediterranean would dry out in about 2000 years.

As the water in the Mediterranean contains more salt through the high evaporation and thus is physically heavier, it sinks to the sea bottom and moves as a deep current directing the Atlantic Ocean.



Only 14 km separate Tarifa from the African continent.

In the Strait of Gibraltar the outflow sinks down to 1,000m depth to collide against an underwater mountain range on its further way. The arising turbulences and currents churn the water masses and push the nutrient-rich deep water upwards. Under the influence of sunlight the inorganic substances can be transformed into organic ones – photosynthesis takes place. Thus Plankton can grow and develop all year around. Plankton constitutes the beginning of the marine food chain: Zooplankton feeds on Plankton and algae; this is eaten by bigger fish etc. Whales and dolphins are at the tail end of this food chain.

**More information under: [www.firmm.org](http://www.firmm.org)**

## Katharina Heyer: Idealistic and Realistic Business Woman

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Katharina Heyer:  
founder of the foundation firmm

for information and research on marine mammals **firmm**<sup>®</sup>, and looked for premises in Tarifa and experienced marine biologists. Katharina Heyer quickly realized that people are willing to protect animals, once they know more about them, are able to experience them in the wild and finally learn to love them. Right from the beginning her focus was aimed at informing and sensitizing a broad audience.

Despite numerous oppositions, setbacks and other difficulties the foundation quickly developed into a recognized platform for scientists. Endurance and a good sense of humour continuously helped taking and overcoming

new hurdles. Today, many years after the founding of **firmm**<sup>®</sup>, the foundation is respected by other environmental organizations and engaged as a valuable partner for informational programs at schools. As a pioneer the non-profit organization can also assert itself against the commercial whale watching firms in Tarifa.

### KATHARINA HEYER

\*Source: Extracts from an article by Gabriela Bonin in the „Schweizer Familie“, Katharina Heyer is a woman who consequently transforms her goals into actions. When she first actively got involved in protecting whales and dolphins, she was also a successful designer for international sport bag brands. As a business woman she was permanently travelling back and forth between Zurich, Hong Kong and the USA. Her two sons, whom she had raised on her own, were long grown up. Katharina Heyer could have settled down for a quiet retirement life. Nonetheless she was looking for something that she still had not found in spite of her successful career: a deeper meaning to life and a fulfilled commitment.

After meeting whale and dolphin preservationists during her vacation in 1997 in southern Spain and learning more about the endangered animals, she immediately felt a strong desire to help. With her strong and consequent way she started implementing this desire. Already two months later she took part in her first conference for marine biology. Another three months later, she founded the foundation

Katharina Heyer is a restless whale and dolphin protectionist. To reach her goal, she does not shy away from an 18 hour day, be it during the summer working in Tarifa or during the winter on numerous lectures and trade show presentations in Switzerland and Germany. Katharina Heyer receives her energy for this fulltime job from the marine mammals at sea. When she encounters “her” animals, she is content. In these moments she realizes what she is investing all her energy for. A special relationship, based on trust, exists between this committed woman and the whales. The animals show this by coming very close to the boats or proudly presenting their calves. These are behavioural patterns which free living whales usually don't show - an extraordinary symbiosis between human and animal.

## Vita Katharina Heyer, founder of *firmm*<sup>®</sup>

- Born the 20 July 1942 in Zurich,
- Education as a foreign correspondent, professionally active in Zurich,
- 1962 marriage and emigration to Tanzania, where Heyer supported her husband as a foreign correspondent in his job as an agronomist. Her love for the underwater world is awakened during her first snorkelling trips,
- 1965 returning to Switzerland, birth of two sons 1967 and 1969,
- 1980 founding of the SONO Handels AG, an import business for leather goods and accessories with Katharina Heyer as manager,
- 1980-2001 expansion of the firms portfolio towards design and development, core activities in the Far East,
- During the 1980s Katharina Heyer discovers her passion for diving,
- Heyer is working as a free designer for large international brands, among them major corporations like Puma and L.A. Gear,
- 1997 Heyer meets the whales and dolphins in the Strait of Gibraltar,
- 1998 founding of *firmm*<sup>®</sup> España in Tarifa ([www.firmm.org](http://www.firmm.org)). Katharina Heyer is simultaneously still working as a designer,
- 2002 she sells her share of her business to an international firm in Hong Kong
- 2003-2005: another three years commitment as a designer, during some months she runs the foundation in Tarifa
- 2006-2014 : during the summer she is working eight months in Tarifa, and four months in the wintertime in Switzerland
- 2014 : she hands over a large part of the responsibility to long-term employees, but as always she supports all activities on land and at sea
- 2015-2016: continues to support the activities on the sea and collects research data. In addition, Michèle Sauvain's book „Herzenssache“ (A Matter of the Heart) about the last 20 years was published in 2016.
- 2017: The faculty of philosophy and natural sciences of the University of Basel awards her on November 24th the honorary doctorate for 20 years of research and information work to protect the whales and dolphins in the Strait of Gibraltar. She continues to support the activities on land and on sea.
- 2018-2019: The 21st and 22nd year in the Strait of Gibraltar she used again for countless observation trips and could thus considerably influence the number of research data.



Katharina Heyer gathering important data about the whales and dolphins

MORE INFORMATION UNTER [WWW.FIRMM.ORG](http://WWW.FIRMM.ORG)

### Contact:

Katharina Heyer, [firmm@spanien.com](mailto:firmm@spanien.com), Pedro Cortés 4, E-11380 Tarifa  
Tel. +34 956 62 70 08, Mobile +34 678 418 350  
E-Mail: [mail@firmm.org](mailto:mail@firmm.org), Website: [www.firmm.org](http://www.firmm.org)

## A woman's fight for the whales in the Strait of Gibraltar



Katharina on one of her boats

Extraordinary people and their actions are the fabric good stories come from. The former fashion designer Katharina Heyer tries to avoid the progressing destruction of the whale's habitat between the Atlantic Ocean and the Mediterranean Sea with a lot of enthusiasm and courage.

For two decades Katharina Heyer is fighting at Spain's southernmost location for an increasing awareness to the marine mammals that live so close to people's neighbourhood.

When the successful business woman recognized that there was such a lack of knowledge about these animals living in the busy Strait of Gibraltar, she quit her job without further thoughts to dedicate her future life to this one talent.

Therefore she initiated the foundation **firmm**<sup>®</sup> (foundation for information and research on marine mammals) to study about the dolphins and whales

in the Strait, to protect their habitat and to inform and educate the public about these fascinating and endangered creatures.

Her slogan: „Only what people know about they will be able to love and protect“, the **firmm**<sup>®</sup> staff in Tarifa and a great number of volunteers from in- and outside of Europe do intensive research and information work. The data collected upon the daily boat trips about the whales and dolphins provide an important input to the research of the last giants of the sea.

Katharina Heyer will be pleased to answer your questions

Contact person:  
Katharina Heyer, Chairwoman

November - March:

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**firmm**<sup>®</sup> headoffice,  
Zürichstrasse 116 b  
CH-8910 Affoltern

Tel. +41 44 700 15 21  
Mobile +41 79 356 96 46  
E-Mail: [mail@firmm.org](mailto:mail@firmm.org)

April - October:

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**firmm**<sup>®</sup> España  
Pedro Cortés 4  
E-11380 Tarifa

Tel. +34 956 62 70 08  
Mobile +34 678 418 350  
E-Mail: [mail@firmm.org](mailto:mail@firmm.org)

## Fascinating Tarifa in Andalusia: Whale observation and more

The island La Paloma in front of Tarifa.  
In the background the African coast.



Tarifa is the southernmost city on the European continent. Nowhere else Europe and Africa lie closer together. Picturesquely situated between the Mediterranean Sea and the Atlantic, Tarifa has been called the wind capitol of Europe for a long time. On more than 300 days a year the Poniente (cold west wind) and the Levante (warm and dry east wind) fight for domination in the Strait of Gibraltar. Six to seven beaufort are no curiosity here. The constant wind attracts wave surfers, wind- and kite surfers from all countries to the long, untouched sand beaches and into the clear Atlantic water. At low wind people enjoy a “tinto de Verano” (summer wine, a fizzy red one) in one of the popular chillout lounges at the beach.

Tarifa's Moorish old town with its winding alleys, cosy cafés and numerous shops is ideal for strolling or lingering over a cup of coffee. Parts of the thick old town wall, the gate to the old town, the baroque Iglesia de San Mateo or the castle Castillo de Guzmán between port and town show evidence of the long and changing settlement of Tarifa.

The popular resorts at the Costa de la Luz (Conil, Chiclana etc.) or at the Costa del Sol (Estepona, Marbella etc.) can easily be visited in a one-day trip. The culturally interesting cities Cádiz, Sevilla, Granada or the famous rock of Gibraltar lie within day distance. Excursions to the shifting sand dune in Bolonia or the Roman village Baelo Claudia only need an hour's drive. After a ferry trip of only 35 minutes the visitor can dive into Africa's mysterious world in Tanger, Morocco.

creasing interest in whale watching Tarifa reached an unexpected attractiveness. The infrastructure has been adapted to the growing number of tourists, but still accommodation in high season of July/August is hard to get. Regarding the growth, Tarifa's population is divided in two: Some want to preserve the charms of the small town situated in front of the windmill-littered hills, others plan a huge expansion of the port. It will soon turn out which interests are going to prevail.

**Activities in Tarifa:** Biking, diving, fishing, climbing, surfing, horse-riding or golf, Spanish classes, cultural offers such as Flamenco or cinema, countless Tapas bars and restaurants, nightlife in bars and clubs into the early morning hours and much more.

**Arrival:** flight to Málaga, travelling on with a rented car or public transport. The bus is the only public transport. Direct connection from Málaga ca. 3x daily, duration about 2½h.

**Accommodation:** Offers can be found in every category - from camp site to design hotel.

**MORE INFORMATIONEN:**

[www.tarifa.de](http://www.tarifa.de), [www.tarifa.net](http://www.tarifa.net), [www.gotarifa.com](http://www.gotarifa.com)

## Research in order to protect the whales

The foundation finances its research activities through donations as well as by taking interested persons or tourists for whale observation tours and scientific research excursions. Next to a marine biologist **firmm**<sup>®</sup> engages students of biology, marine sciences and environmental sciences as volunteers.

The research projects were supervised by Professor Dr. David Senn for twelve years, who was member of the board for **firmm**<sup>®</sup> as scientific responsible. In February 2010 he retired and Professor Dr. Patricia Holm took over his duties. The scientific results add to deepen the knowledge about the living conditions of the animals on site and eventually to back up the foundations claims for protection.

The research area is located at a worldwide unique point of intersection. The Strait (see also “The Strait of Gibraltar and its relevance for the cetaceans”) is a food source for the whales with an eminent whale population: Constantly common dolphins (*Delphinus delphis*), striped dolphins (*Stenella coeruleoalba*), bottlenose dolphins (*Tursiops truncatus*) and pilot whales (*Globicephala melas*), but also killer whales/orcas (*Orcinus orca*), sperm whales (*Physeter macrocephalus*) and fin whales (*Balaenoptera physalus*) can be observed.

Since the founding of **firmm**<sup>®</sup> in the year 1998 every sighting of animals has been documented. For a start this is done to record the species and the populations. To (re-)cognize single, individual animals, **firmm**<sup>®</sup> files e.g. pilot whale and bottlenose dolphin populations by means of so-called photo-identifications. This is an internationally used method for whale identification and it is acknowledged by the scientific committee of the IWC as non-invasive: A photograph of the dorsal fin (with *Globicephala melas*), shot from the right angle allows a distinct mapping of every



Striped Dolphins live in the Strait of Gibraltar all year round.



Descending Sperm Whale

individual with the help of scars, outline, angle and ratio. Another project is aimed on the unknown point of origin and destination of the sperm whales, which obviously use the Strait of Gibraltar as a “feeding ground”. The photo-ID with *Physeter macrocephalus* is done with photos of the tail fin. The fin whales’ migration routes can also be studied with photo-ID by comparing the photos with those of other institutes active in the Mediterranean Sea. The narrow Strait of Gibraltar also suits to count the number of fin whales travelling through every year.

Each year students of the University of Basel travel to Tarifa to take plankton assays off the **firmm**<sup>®</sup> boat. This leads to the registration of the species found here. The statistical analysis of the data collected since 1998 gives information about the temporal and spatial distribution of the species as well as about the possible changes of those parameters. The development of group size and birth rate can be tracked over the years, too.

For a long time any regulations to protect the marine mammals were nonexistent in this area due to the fact that it was not known for whale sightings and – research, not even to mention any surveillance. **firmm**<sup>®</sup> has successfully made an effort to constitute rules for gentle and respectful “whale watching” (as it is applied e.g. in the USA) with the Spanish authorities. The rules and standards put in force on the 1.1.2009 shall inure to the benefit of the whales in all Spanish waters.

## PUBLICATIONS:

**On a regular basis, we present our findings at International Marine Biology Congresses, e.g. at conferences of the European Cetacean Society (ECS). Here are some examples:**

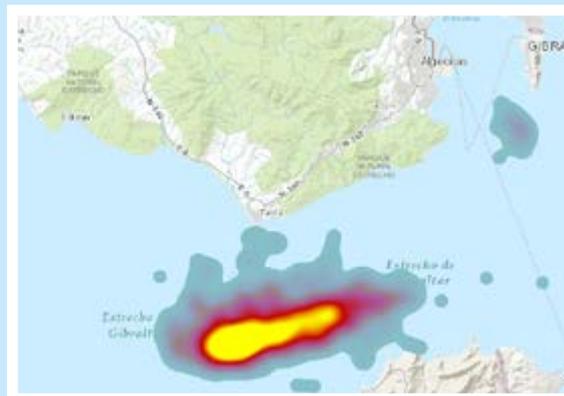
- Fin whales of Gibraltar (HighRes) by Jörn Selling
- Long-finned pilot whales in the Strait of Gibraltar (HighRes) by Michael Casanova, Matthias Tobler
- Preliminary Assessment of Epidermal Conditions, Lesions and Malformations in Cetaceans of the Strait of Gibraltar by Jörn Selling

### Comprehensive statistical analysis

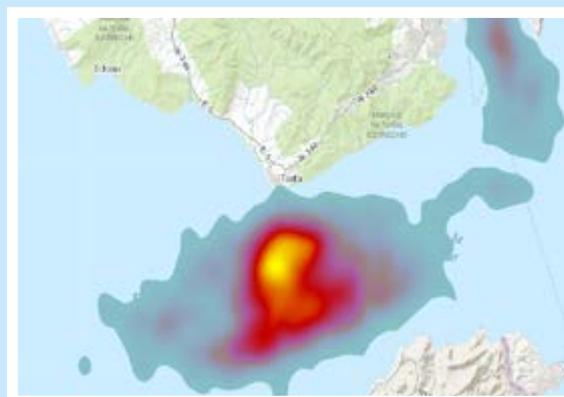
In 2009 Prof. Dr. Jürgen Holm, doctor of biology and designated statistics expert, evaluated the huge database collected since 1998 by **firmm**<sup>®</sup> with scientifically appropriate software. Marine biologists Professor Dr. Patricia Holm and Professor Dr. David Senn together with **firmm**<sup>®</sup> marine biologist Jörn Selling have been editing relevant questions. Several complex steps with statistical methods and tests are necessary until reliable statements can be made. After all, the interpretation of the results is of high importance to discuss them critically in context with the known whale research so valuable conclusions can be deduced.

### Possible questions are:

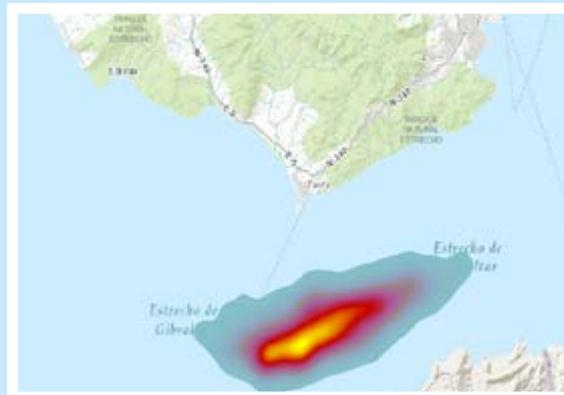
- which species were observed when and where, also with regard to day time and season,
- if their appearance and their spread correlate to weather and tides,
- how big the groups of the different species are and which species appear in mixed groups,
- documentation of the number of offspring over several years,
- how did the animals react to the research boat, did they flee, did they seem to be unimpaired or were they even approaching the observers?



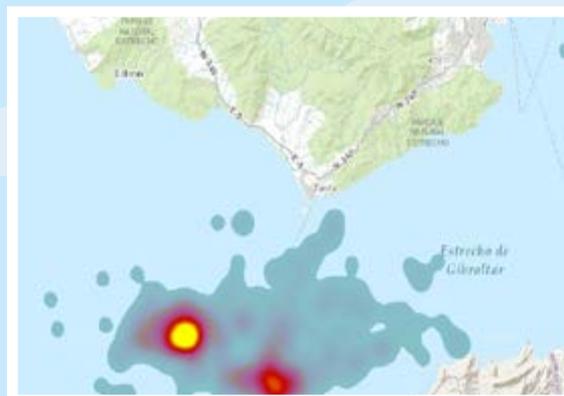
Mapping Sperm-Whale (*Physeter macrocephalus*)



Mapping Striped Dolphins (*Stenella coeruleoalba*)



Mapping Pilot Whales (*Globicephala melas*)



Mapping Orcas (*Orcinus orca*)



*firmm*<sup>®</sup> suspects that the four new ports on the Moroccan coast have an influence on the whereabouts of the resident pilot whales.

The first part of the comprehensive analysis will be realized as a part of a master's thesis: A master student of the interdisciplinary study "Sustainable Development" at the University of Basel started to sight the data base in summer 2009. The results will be of high interest among experts.

**2014:** Katharina Heyer and the *firmm*<sup>®</sup>-biologist Jörn Selling made the assumption that the four new ports built at the Moroccan coast are influencing the whereabouts of the resident pilot whales.

Analyzing the extensive data collected by *firmm*<sup>®</sup> during the last 15 years, which gives evidence of the whereabouts of the pilot whales since 2007 (when "Tanger Med", the largest of the new ports started to work), it might be possible to see if there have been any changes.

Considering the limitations of our way to get that data, it appears that the pilot whales stayed in principle in the area. However, there is a trend that groups with newborns have been moving more westerly than other groups, while they have been moving more easterly than others before.

That might indicate that they prefer the stress of meeting orcas (mostly at the west-end of the Strait) to exposing their babies to the danger of the in

creasing traffic close to the harbour. However it is too early to make an unambiguous statement about the influence of the new harbours on the pilot whales' territory

## This is what scientists say about *firmm*®



Prof. Dr. rer.nat. Patricia Holm, professor for marine biology at the University of Basel, member of the scientific committee of the International Whaling Commission IWC and member of the board of *firmm*®:

“The foundation *firmm*® accomplishes a highly valuable contribution in the tertiary education. We and our students in the fields of marine biology and sustainable development profit on the one hand of the infrastructure that the foundation provides in Tarifa in form of course premises and daily observation trips. But even more valuable are the experiences with the marine mammals from more than 16 years of activity in the Strait of Gibraltar involving the passive knowledge that has been accumulated at *firmm*® For our research the work of the *firmm*®- crew is a huge step forward.”

Prof. Dr. David Senn, professor for zoology at the University of Basel, member of the scientific committee of the International Whaling Commission IWC and former member of the board of *firmm*®:

“On every trip to the whales and dolphins in the Strait of Gibraltar population sizes, family structures, migrational behaviors et cetera are collected with the help of observation and meticulous documentation. The analysed data is introduced into our research work and contribute to broaden our decent knowledge about the whales. The pilot whale project has to be honoured especially. Without the tireless efforts of the *firmm*® crew the whales and dolphins in the Strait of Gibraltar would still be alien to us. *firmm*® wants to bring the whales into the awareness of the people. This will be the best path to their protection.”

## firmm® - Chronology

- **CHRISTMAS 1997:** A fateful encounter with dolphins and pilot whales in Tarifa changes the life of Swiss fashion designer Katharina Heyer radically. She gives up her career to devote her life to protect the endangered animals. As a foreigner with a limited proficiency in Spanish she at first experiences great difficulties. But with a lot of confidence Katharina plunges into the adventure.
- **SPRING 1998:** Founding of the foundation *firmm*® and opening of an office in Tarifa. Friends help to transform the run-down former bar in the Calle Pedro Cortes 4 (today's main office) into a small shop with an office. First season with whale watching trips in the Strait of Gibraltar with the company-owned Zodiac „Beluga“ and the chartered boat of the diving school Scorpora. Data collection and lectures for course participants. Collaboration with Orca researcher Diego proves to be a dead end.
- **1999:** Initiation of the research method which is still used to date: a) Biodiversity with recording of all the sightings, b) Photo-identification for recording populations and migrating, c) mapping of the different whale species. New boat „fundación *firmm*®“.
- **2000:** Season full of problems, damages on the boat by storms, approximately half of the trips have to be cancelled due to very strong winds. Petition filed against building new dolphinariums in Europe.
- **2001:** already three children camps take place. All of the research data 1999/2000 are purloined by a Spanish biologist. Petition launched for the dismissal of Japanese whaling activities to support the international petition.
- **2002:** Another boat damage. The data base of the „Long finned Pilotwhale Project“ is constantly growing. Initiation of regular lectures about Orcas to the local fishermen, extension of school lectures, big event with school kids in Marbella. Katharina searches in Morocco for a suitable bay for her planned Dolphin Sanctuary



The *firmm*-office in the old-town of Tarifa

and finds it in Ras Laflouka...

- **2003:** New record with 1373 dolphin and whale sightings. Intensifying of the research- and informational work. Marine biologist Jörn Selling and Diego Diaz Piñero, captain and mechanic, join the team.
- **2004:** The small boat yields at the end of the season to the new „*firmm*® UNO“ (24 seats). Beginning of the yearly visits by Prof. David Senn with students of the University of Basel for research on plankton in the Strait of Gibraltar, which continue up to today.
- **2005:** Research and information are further expanded and professionalized. The leasing of the fishing rights by the Spanish to the Japanese lead to the arrival of a factory ship in the port of Tarifa, where tons of red tuna are slaughtered.
- **2006:** Record number of visitors, for the first time both boats are running simultaneously during the high season. Sightings climb up to 1870, less than 1% trips without sightings. Newly Katharina can count on the vigorous assistance of office manager Nina Cziczek.
- **2007:** A larger boat is necessary. Employment of a second captain for the whole season, Sebastian Gonzalez. For the first time, the Academia Engiadina School of Tourism comes with students to microscope plankton and to create an access database. Over the past 10



The office in the port: starting point of the excursions to the whales

years **firmm**<sup>®</sup> has been giving between 5000 and 7500 short lectures with over 50 volunteers in five different languages. Start of cooperation together with Aldiana Hotels in Chiclana and Alcaidesa. A dead Humpback Whale beaches in Zahara. Highlight: Sperm Whale mating!

- **2008:** The year of strandings (1 Pilot Whale, 2 Beaked Whales and even 1 Sperm Whale). Shooting manoeuvre in the Strait by the Spanish army. Unfortunately injured Pilot Whales are sighted again whose wounds can be traced back to collisions with boats. Tough 11th season for **firmm**<sup>®</sup> with strenuous waiting for the arrival of the new boat **firmm**<sup>®</sup> Spirit“ until its first trip on August 14th. Due to the higher capacity of the boat only 450 whale watching trips take place. New team member: Eduardo Montana Peralto, mariner. Approximately 1500-1600 short lectures given by the volunteers, this is a new record.
- **2009:** Successful season with new record numbers of guests as well as of sightings. New regulations for the necessary captain papers shortly stall all activities. The documentary “The Last Giants - Wenn das Meer stirbt” about the whales and dolphins in the Strait of Gibraltar and Katharina’s work launches in September in the German cinemas.
- **2010:** Turbulent season with short-term investment in a new boat of the same size as the „**firmm**<sup>®</sup> Spirit“, named „**firmm**<sup>®</sup> Fly Blue“.

Two new employees necessary to take care of the growing amount of guests. Sightings: Few Sperm Whales, but lots of Fin Whales and extra-large groups of Common Dolphins (more than 1,000 animals) and Striped Dolphins (up to 500), Pilot Whales and Bottlenose Dolphins with several calves. Orcas show up occasionally between mid July and mid August and to our big surprise once again in October.

- **2011:** Season of the extremes demanded a lot from us. A cold and rainy spring, a windy and stormy October. We were rewarded with a summer and a record number of visitors due to less wind. Sightings: Again very few Sperm Whales, but 25 Fin Whales. A record of 38 Orca-sightings despite the short tuna fishing season. The last Orca-sighting on the 4th of October in the Bay of Algeciras! Pilot Whales and Bottlenose Dolphins had a remarkable number of calves. Due to our long time research data we managed to prevent a newly planned ferry line from Tarifa to the new port of Tangier MED which would have taken course through Pilot Whale territory. The marine biologist Jörn follows the question if and under which conditions the position data of the whales equipped with GPS-transmitter can be handed out by the scientists to the whale watching companies.
- **2012:** Despite the palpable crisis in Spain the 15th season in Tarifa was satisfactory: last year’s visitor numbers could be slightly exceeded. Extraordinary sightings: 130 Sperm Whale sightings - among others even a Sperm Whale mating; 34 Fin Whales passed by; between July 4th and the end of September we were able to find the Killer Whales 59 times - the largest family had 23 animals! 4 curious Orca calves frequently played around our **firmm**<sup>®</sup>-boats! We once again witnessed how the Pilot Whales chased the Killer Whales. The Pilot Whales had a lot of calves again. The Bottlenose Dolphins offered spectacular shows near the boat and often showed us their newborns. Fortunately, of the Striped and Common Dolphins there are still schools with over 1,000 animals!
- **2013:** Much wind and the ongoing crisis in Spain gave everybody a hard time. Thanks to

Striped dolphin



an unexpected mild autumn we nevertheless almost reached the figures of the previous year. All three dolphin species were about equally often sighted. Although we can be satisfied with the Pilot Whale sightings, we still have the impression that there are fewer families in the Strait of Gibraltar. The sightings of Sperm Whales and Fin Whales decreased slightly; the Orcas were regularly seen from July 13th until the end of August. In the group of Orcas, Camacho, the old father of the pod, was missing. Probably he died of old age. The younger Camorro has succeeded him. We have not seen the badly injured Curro since April, although we have often sighted his whole family. It seems that he is also gone. An absolute highlight has been the mating of Sperm Whales in May; three Sperm Whales were involved and around 80 Pilot Whales and 50 Bottlenose Dolphins observed the scene for a long time.

- **2014:** Thanks to a windless season we can look back to outstandingly good visitor numbers. In October the Levante has given us a break of approximately two weeks, what cannot diminish the overall success of the year. The number of guests interested in the environment has increased and so our work to raise awareness is popular and bears fruit. All dolphin species we have seen more or less equally, with the big schools of Common Dolphins increasing slightly. Among the Pilot Whales we have seen many animals that are available for adoption several times. Fortunately also this year there were many new borns. Nr.117, the oldest Pilot Whale known to us, we unfortunately did not see anymore. The number of Fin Whales adds up to the same number as in the year before, whereas

we had an unusual amount of Sperm Whale sightings in May and June. The Sperm Whales even jumped every now and then. The Orca-season lasted from June 26th to August 29th, although we saw them again on September 11th and 13th, and once again on October 07th. Also the Orcas had many juveniles with them at the end of the season. Thanks to a well-functioning team the season went really well.

- **2015:** Another record year in every respect. We have never made so many trips, recorded so many sightings and worked for so many hours. June was with 16 days of Levante the worst month, but July and August due to little wind were among the best months ever. All in all a really satisfying season. We saw the Orcas three times in May and then regularly from June 30th to August 27th. Sperm Whales we saw only about 110 times, that comes to less than one third of the sightings of the year 2014. Fin Whales on the other hand we saw more than 37 times. The Pilot Whales especially in spring had many babies, who caused great interest amongst our guests. More than 970 encounters provide a lot of information. The adoptions are very well received. The most popular was the little Orca Baby Wilson, followed by the male Orca Camorro and the Bottlenose Dolphin Baby Leila with his mother Melissa. Followed in 4th place by the Sperm Whale Observador. About all the animals we reported on a regular basis in our blogs. The staff in Tarifa was reinforced and functioned harmonious and highly efficient on the sea as well as on land.
- **2016:** Having been blessed with mild wind for two years, we were faced with an extremely windy summer. 11 days of Levante in July, 16 days of wind in August in the middle of the peak



tourist season and 11 more days in September hit us hard.

We commissioned our new boat **firmm**<sup>®</sup> VISION at the end of June. Our clients have been delighted with the glass observation facilities below deck. Since spring the port authorities raised the requirements concerning captains and mechanics, and so we had to employ two new captains and two new boat mechanics. After an accelerated period of training we were able to develop a brilliant crew. The shore based team on land once again performed very good work.

Our sightings were highly interesting this season: 10 Sperm Whales were in the Strait of Gibraltar for several days. A rare appearance of a Fin Whale with his head out of the water cavorting with Bottlenose Dolphins impressed us. Another Fin Whale played with the high Levante waves and leapt completely out of the water seven times. We also saw a Humpback Whale being harassed by 40 Pilot Whales. Looking for help the nearly 12 meter long whale repeatedly swam underneath our boat. The Pilot Whales obviously defended their territory.

Orcas showed up punctually on the 2nd of July. But they unfortunately already disappeared on the 23rd of August in direction Portugal. Camacho and the female called "Matriarchin" we didn't see the whole summer. But Baby Wilson, our favourite whale available for adoption, has shown himself often together with three other young Orcas.

- 2017: was the 20th year of **firmm**<sup>®</sup> in Tarifa! It was already the 2nd year with a lot of wind. Over 100 days without tours in 7 months are more than last year and hit us very hard. The sightings were usually very good and varied. The Orcas

arrived on July 1st and stayed continuously until August 9th. After that they were only to be seen sporadically. There has been offspring again: Lucia, who we know well, has become the mother of little Estrella, who was probably born in spring 2017.

In September, 10 Sperm Whales were here at the same time. The Pilot Whales had calves throughout the whole season; their mothers let them inspect the boat. In the Bay of Algeciras there were over 1000 Common Dolphins and one wonders why the mothers raise their young where there is enormous traffic and air and water are extremely polluted. Our biologist will look into it.

November 24th: Katharina Heyer receives an honorary doctorate from the Faculty of Philosophy and Natural Sciences of the University of Basel as a reward for 20 years of whale and dolphin research in the Strait of Gibraltar.

On our additional new website [www.firmm-education.org](http://www.firmm-education.org) we publish all papers from pupils published in cooperation with firmm and diploma/master theses by students, as well as the work of our biologist and research reviews. 2018: In the 21st year we can consider ourselves lucky weather-wise. With only 75 days of wind, we were able to sail more frequently than last year, which was also reflected in a new record number of visitors.

There were a noticeably large number of new-borns among the Pilot Whales, but also young Bottlenose Dolphins were to be seen until autumn. Even the Orcas had another new-born, which we baptized Tina. A special Orca day was October 17th, when we unexpectedly saw 14 Orcas, including Baby Wilson with four larger



siblings. There was Camorro, Lucia with Estrella and, as a big surprise, the matriarch was also there.

The Sperm Whale and Fin Whale sightings were within the usual range and were always impressive. The Striped and Common Dolphins pleased us again and again, also in larger groups, whereby it was noticeable that the Common Dolphins often came very close to the boat. Four new Pilot Whales can be adopted: Oliver, Willy, Pomares and the wounded Lola. We hope they all survive the winter.

- 2019: the 22nd season brought less wind than the years before, which allowed us to organize many trips and therefore show the whales and dolphins to a lot of guests. The Pilot Whales once again had many new-borns, thanks to a temporary large influx, which we could observe in the spring months. The Bottlenose Dolphins also had many cheeky young ones until autumn.

The Orcas unfortunately showed themselves even less than last year, which could be due to their numerous offspring. A special Orca day was the 12th of August, when we surprisingly found 18 Orcas atypically in the Strait of Gibraltar.

Everyone was there: Camorro, the Matriarchin, Lucia with the little Estrella, Baby Wilson, Tina and several other curious juveniles.

9-11 Sperm Whales surprised us on September 20th. They stayed until October 7th and delighted us daily with their majestic dives. The Fin Whale sightings were more or less the same as in former years, spread over the entire season.

We saw the Striped and Common Dolphins in about the same number as the years before.

Especially larger schools are always an impressive experience. We observed all of the animals available for adoption, some more, some less frequently. (see separate blog)

## Some facts about the oceans and their inhabitants

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Orca-Mother with calf

- About 350.000 whales are killed annually in fishing nets. Those nets could span the world several times, if they were strung together. This is the official number of reported cases, in fact the estimated number is about one million.
- 85 percent of the fish stocks are heavily exploited, one third of them are overfished or collapsed, two thirds are endangered. Thus, many giants of the ocean starve to death.
- About one fifth of the total catch is caught illegally.
- The “disturbing by-catch” of marine animals (including marine mammals) that go overboard dead, is about 60 - 80 percent, in shrimp fishing it is even 90 percent.
- Until 2050 the oceans will be presumably dried out as a safe fish source.
- Every cubic meter of ocean contains about 18.000 particles of plastic. The concentration of such particles on the seabed is much higher. This is the reason for the deaths of more than 100.000 marine mammals.
- Nearly all 80 whale species are endangered according to Greenpeace.
- The range, within blue whales can communicate has been reduced by 90 per cent due to risen noise pollution.
- Our oceans have been existing for millions of years. Within only one generation men have destroyed large parts of their own environment.
- 70 per cent of our planet is covered by water.
- 96 percent of the world’s oceans are now poisoned, littered, acidified, overheated and/ or overfished. Only four per cent remain totally intact.
- Only 4.3 percent of the world’s oceans are protected in some form, and only 1.9 percent are prohibited for use. What is actually needed is a network of large-scale protected areas for 40 percent of the world’s oceans..

# Whales and Dolphins in the Strait of Gibraltar



## 1 Common Dolphin (*Delphinus delphis*)

A truly beautiful dolphin, with its hourglass pattern of white, grey, yellow and black on the side. It is an energetic acrobat and one of the fastest cetaceans. It can reach a maximum speed of 65 km/h.

Presence in the Strait of Gibraltar: Permanent



## 2 Striped Dolphin (*Stenella coeruleoalba*)

The Striped Dolphin may resemble a Common Dolphin at first glance. In both species full-grown individuals have a size of around 2m and a weight of 100 kg. Striped Dolphins regularly form mixed species groups with Common Dolphins in the Strait of Gibraltar.

Presence in the Strait of Gibraltar: Permanent



## 3 Bottlenose Dolphin (*Tursiops truncatus*)

The Bottlenose Dolphin varies greatly in size, shape and colour from one individual to another and according to the geographical region in which it lives. Animals can reach an age of 40-50 years. They can dive to depths of 300m. Bottlenose Dolphins are well known from dolphinariums and the Flipper-movies.

Presence in the Strait of Gibraltar: Permanent

## 4 Orca (*Orcinus orca*)

The Killer Whale is the largest member of the dolphin family. The males can reach up to almost 10m and have a very high dorsal fin, up to 1,8m. The animals can travel at 55km/h. The short time of presence in the Strait is determined by the migration of their preferred food, the Blue-fin Tuna, *Thunnus thynnus*. In Tarifa the pods of the smart Killer Whales follow the fishing boats and take tunas from the fishing lines.

Presence in the Strait of Gibraltar: July / August



## 5 Long-finned Pilot Whale (*Globicephala melas*)

Its Latin name means "Black Globe-Head", referring to the bulbous forehead. This species shows a strong fidelity to the waters close to Tarifa. The animals mainly seem to follow their prey, which is squid.

A mature male can reach a length of 6m and a weight of 3,5t.

Presence in the Strait of Gibraltar: Permanent

## 6 Sperm Whale (*Physeter macrocephalus*)

The Sperm Whale is the largest toothed whale; a male can reach up to 18m and 50t. It is one of the best divers among the marine mammals: it can reach depths up to 3000m during dives of over 1h length. Down there it is hunting for its main prey: 10m-long giant squids.

Presence in the Strait of Gibraltar:

Year round, but especially in spring



## 7 Fin Whale (*Balaenoptera physalus*)

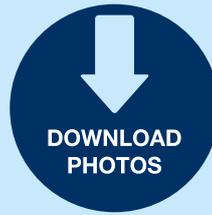
The Fin Whale is the second largest animal in the world (besides the Blue Whale) and belongs to the sub-order of baleen whales. It can cover a distance of 300km per day, whereby it can reach a maximum speed of 37km/h. Therefore an individual is able to cross the Strait of Gibraltar within 1h in order to reach the Mediterranean population, which is estimated around 3000 animals.

Presence in the Strait of Gibraltar: Few sightings



Size comparison:





## Press-Photos 1/2



Striped dolphin © firmm



Pilot whales © firmm



Striped dolphins © firmm



Sperm whale © Bernd Nies



Bottlenose dolphin © firmm



Common dolphins © firmm



Firmm „Spirit“ © firmm



Bottlenose dolphins © firmm



Firmm „Vision“ © firmm



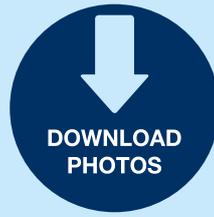
Finwhale © firmm



Young Orca © firmm



Orca's © firmm



## Press-Photos 2/2



Katharina Heyer © Sebastian Kanzler



Lecture © Sebastian Kanzler



© firmm



Orca in front of boat  
© Sebastian Kanzler



firmm „Vision“ © Sebastian Kanzler



Orca © Sebastian Kanzler



Marine biologist Jörn Selling  
© Sebastian Kanzler



Strait of Gibraltar  
© Sebastian Kanzler



Katharina Heyer  
© Sebastian Kanzler



Young Pilot-Whale © firmm



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Port office



Office in the old-town



Centro



**firmm<sup>®</sup> headoffice**  
Zürichstrasse 116 b  
CH-8910 Affoltern a.A.

**firmm<sup>®</sup> España**  
Pedro Cortés 4  
11380 Tarifa

**E-Mail: [mail@firmm.org](mailto:mail@firmm.org)**

**Phone: +34 956 62 70 08**  
**Mobile: +34 619 45 94 41**



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