



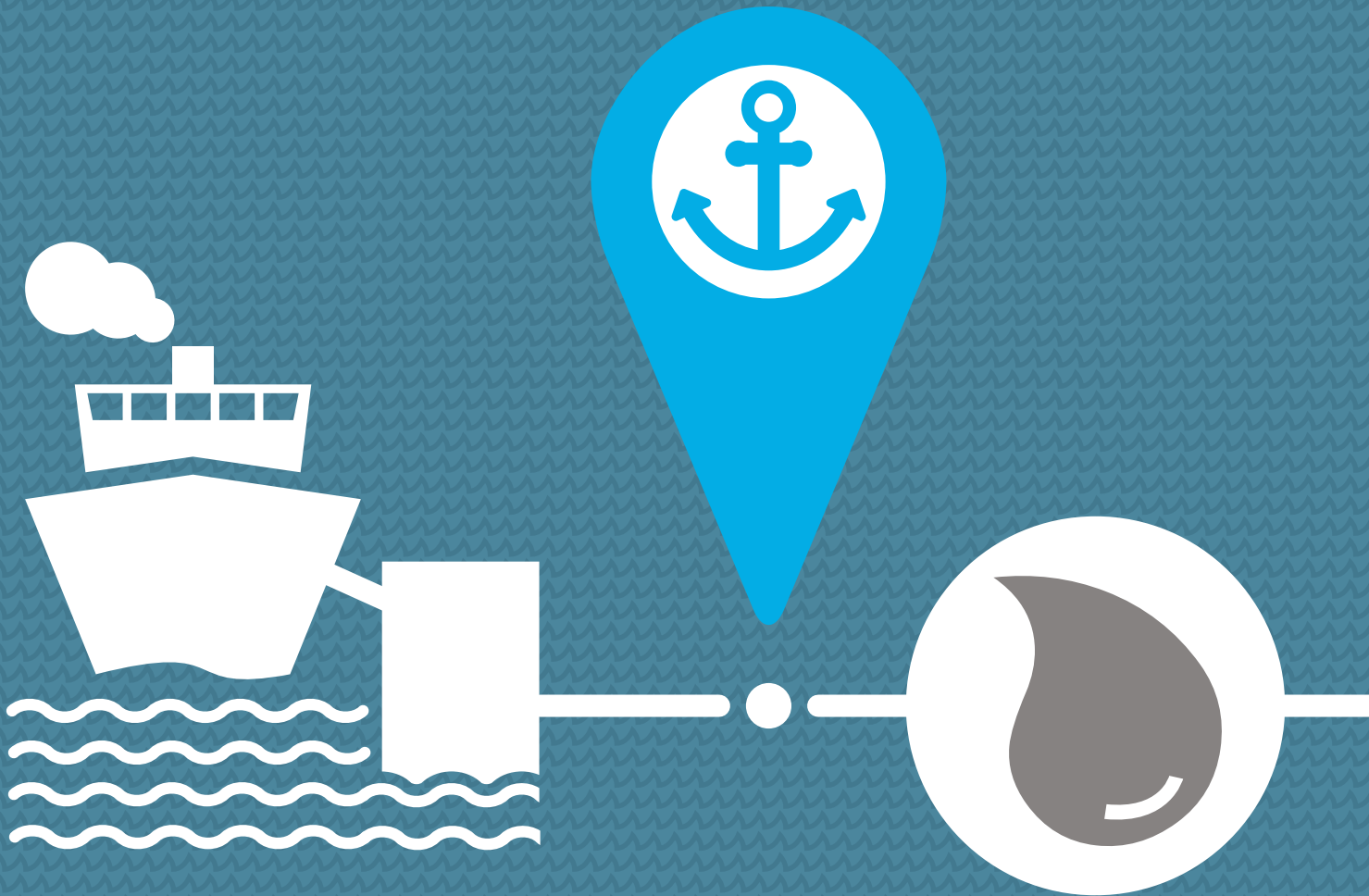
# Baltic Sea Sewage Port Reception Facilities HELCOM overview 2021

  
Baltic Marine Environment  
Protection Commission

Shipping



2023



Published by:  
Helsinki Commission – HELCOM  
Katajanokanlaituri 6 B  
00160 Helsinki, Finland

[www.helcom.fi](http://www.helcom.fi)

For bibliographic purposes this document should be cited as:  
“Baltic Sea Sewage Port Reception Facilities.  
HELCOM Overview 2021. HELCOM (2023)”

© 2023 Baltic Marine Environment Protection Commission  
(Helsinki Commission – HELCOM)

All rights reserved. Information included in this publication or extracts thereof, with the exception of images and graphic elements that are not HELCOM’s own and identified as such, may be reproduced without prior consent on the condition that the complete reference of the publication is given as stated above.

Information and views expressed in this publication are the authors’ own and might vary from those of the Helsinki Commission or its members.

Any maps that are featured in this publication are intended for illustration purposes only and do not necessarily designate the exact boundaries of sovereign states and entities.

Contributor: Marta Ruiz<sup>1</sup>, Florent Nicolas<sup>1</sup>, Markus Helavuori<sup>1</sup>

<sup>1</sup>) Secretariat of the Helsinki Commission

© 2023 Baltic Marine Environment Protection Commission  
(Helsinki Commission – HELCOM)



## Contents

1. A regional sewage Port Reception Facilities overview - with focus on cruise ships.....	3
2. Cruise ships traffic in the Baltic Sea .....	5
3. Ports specific information .....	12
Aarhus (Denmark).....	15
Copenhagen (Denmark).....	18
Flensburg (Germany).....	21
Fredericia (Denmark).....	24
Gdansk (Poland) .....	27
Gdynia (Poland).....	30
Gothenburg (Sweden).....	33
Hamina, including Kotka (Finland).....	36
Helsingborg (Sweden) .....	39
Helsingör (Denmark) .....	42
Helsinki (Finland).....	45
Kaliningrad (Russia).....	48
Kalmar (Sweden).....	51
Kalundborg (Denmark).....	54
Kapellskär (Sweden).....	57
Karlskrona (Sweden).....	60
Kemi (Finland).....	63
Kiel (Germany) .....	66
Klaipeda (Lithuania) .....	69
Liepaja (Latvia) .....	73
Luleå (Sweden).....	76
Lübeck, including Travemünde (Germany) .....	79
Malmö (Sweden).....	82
Mariehamn (Finland).....	85
Nynäshamn (Sweden).....	88
Riga (Latvia) .....	91
Rostock (Germany) .....	94
Rønne - Bornholm (Denmark).....	97
Saaremaa (Estonia).....	100

Saint Petersburg (Russia).....	103
Sassnitz, including Mukran (Germany) .....	106
Stockholm (Sweden).....	109
Stralsund (Germany) .....	113
Szczecin, including Świnoujście (Poland).....	116
Tallinn (Estonia).....	119
Turku (Finland) .....	122
Trelleborg (Sweden).....	125
Vaasa (Finland) .....	128
Ventspils (Latvia) .....	131
Visby (Sweden) .....	134
Wismar (Germany).....	137
Ystad (Sweden).....	140
Annex I - Estimated maximum theoretical discharge need of cruise ships.....	143
References .....	145

# Baltic Sea Sewage Port Reception Facilities

## HELCOM overview 2021

### I. A regional sewage Port Reception Facilities overview - with focus on cruise ships

This report provides information on the status of sewage port reception facilities (PRF) and their use in the Baltic Sea area, with a focus on international cruise traffic. Cruise traffic has been growing during recent years and it is important to make Baltic Sea-wide information available on sewage PRF needs and availability in the Baltic Sea ports.

This document has been compiled by the HELCOM Secretariat based on information received by port authorities, national Administrations and the cruise and port industries. HELCOM AIS data for the period 2006 to 2021 was also used to produce some figures available in the following port sheets. Requests were sent to the national Administrations to provide new and updated relevant information regarding sewage PRF in their ports. The requests also include a call to update the available statistics such as the number of international passengers transiting per port, the number of port calls, the sewage discharged in each ports, etc. This document is thus based on the input received.

## Information from national Administrations and industry

Information from the national Administrations has been provided via the national delegates of the HELCOM Maritime Working Group (HELCOM MARITIME), through a specific call during early 2022. This process follows up previous regular requests initiated in 2017.

Information from the industry has been collected with the generous help of HELCOM industry observers. These industry actors have also cooperated within the regional [Cooperation Platform on Port Reception Facilities \(PRF\) in the Baltic Sea](#) established in 2010.

In May 2014, HELCOM and the Cruise Lines International Association (CLIA) launched a joint survey in the Baltic Sea region for summer 2014. The survey aimed to collect detailed data on sewage delivery needs and available facilities in the Baltic Sea ports. The survey was available for cruise ships calling Baltic Sea ports between May and October 2014. The questionnaire was sent to ships and also to ports, but only a few ports answered. Answers from a total of 667 port calls, by 29 different cruise ships in 22 ports of the region, were received. The results of the survey have been used in this document for showing the use of sewage PRFs in the passenger ports in the Baltic Sea during 2014, as well as to document related comments by cruise ships crew. It is foreseen that this information is updated in future overviews.

Additional information sources for this publication have been an exchange of letters on sewage PRFs under the Nordic Council of Ministers (finalized in 2013), the *Baltic Port List* series published by the Turku University Centre for Maritime Studies, a 2013 compilation of statistics by the industry initiative Cruise Baltic ([www.cruisebaltic.com](http://www.cruisebaltic.com)) as well as a compilation of ferry lines information from the worldwide ferry portal website [www.ferrylines.com](http://www.ferrylines.com).

## AIS data

AIS data from the regional HELCOM AIS network covering the whole Baltic Sea area was used in order to generate figures to describe the cruise ships traffic in the region. From the AIS data, it is possible to retrieve relevant information such as the number of calls per port, the time spent operating at sea and in ports, etc. For each port sheets in this report, the figures 3.1 and 3.2 are displaying information from the AIS data analysis. The methodology is explained in the [Annex I of the 2018 HELCOM Assessment on maritime activities in the Baltic Sea Region](#) and the scripts are available on the [HELCOM GitHub page](#).

For a few ports, the figures related to the number of port calls can be slightly different than the information received from the national Administrations. This is due to AIS data quality or inconsistencies in the update from the Administrations.

## 2. Cruise ships traffic in the Baltic Sea

The IMO registered passenger ships are only a small fraction of all the IMO registered ships operating in the Baltic Sea. In 2021, only 4.7% of these ships were passenger ships. However, most passenger ships are operating on regular lines between ports and this results in a fairly large proportion of the overall traffic in the Baltic Sea. In 2021 and based on HELCOM AIS data, 15.1% of the total distance sailed by the IMO registered ships was accomplished by passenger ships. The movements between the biggest ports of the Baltic Sea are visualized in figure 1 below and the traffic density is displayed in figure 2.

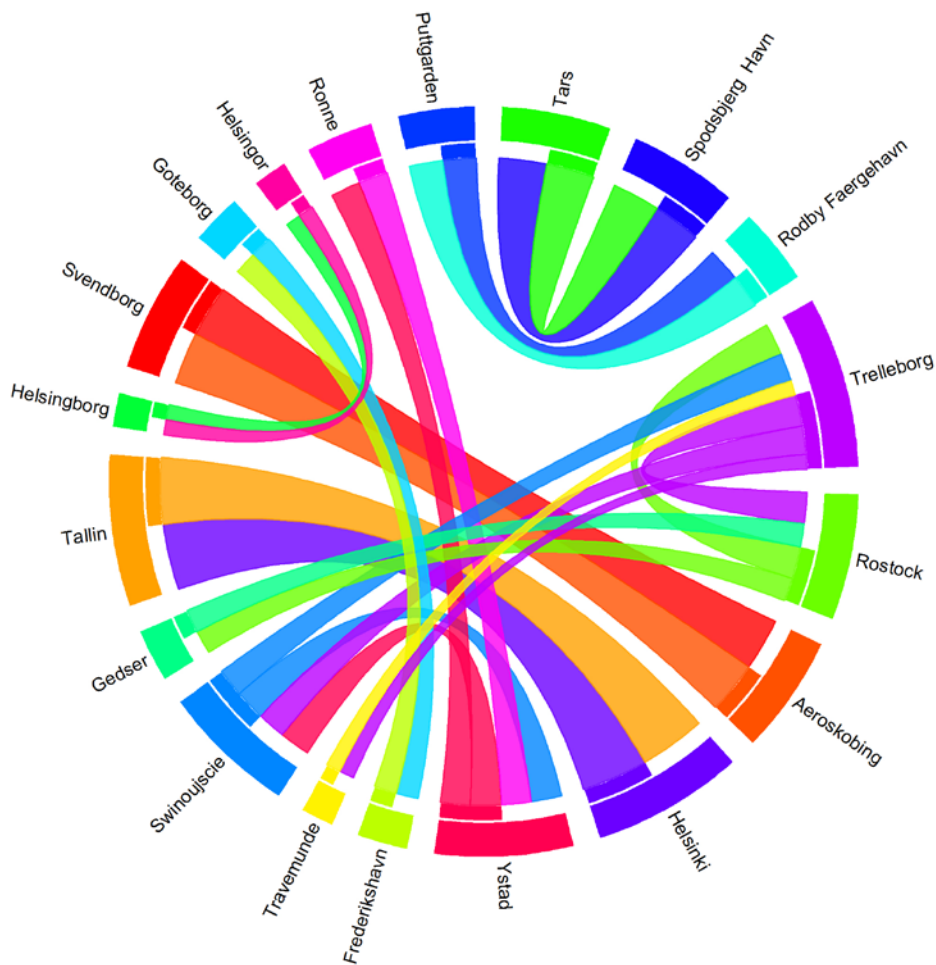


Figure 1: Passenger ship movements between ports (arrival and departures) in 2021 (between the 30 biggest ports and a minimum of 600 trips between ports). Figure based on HELCOM AIS data.

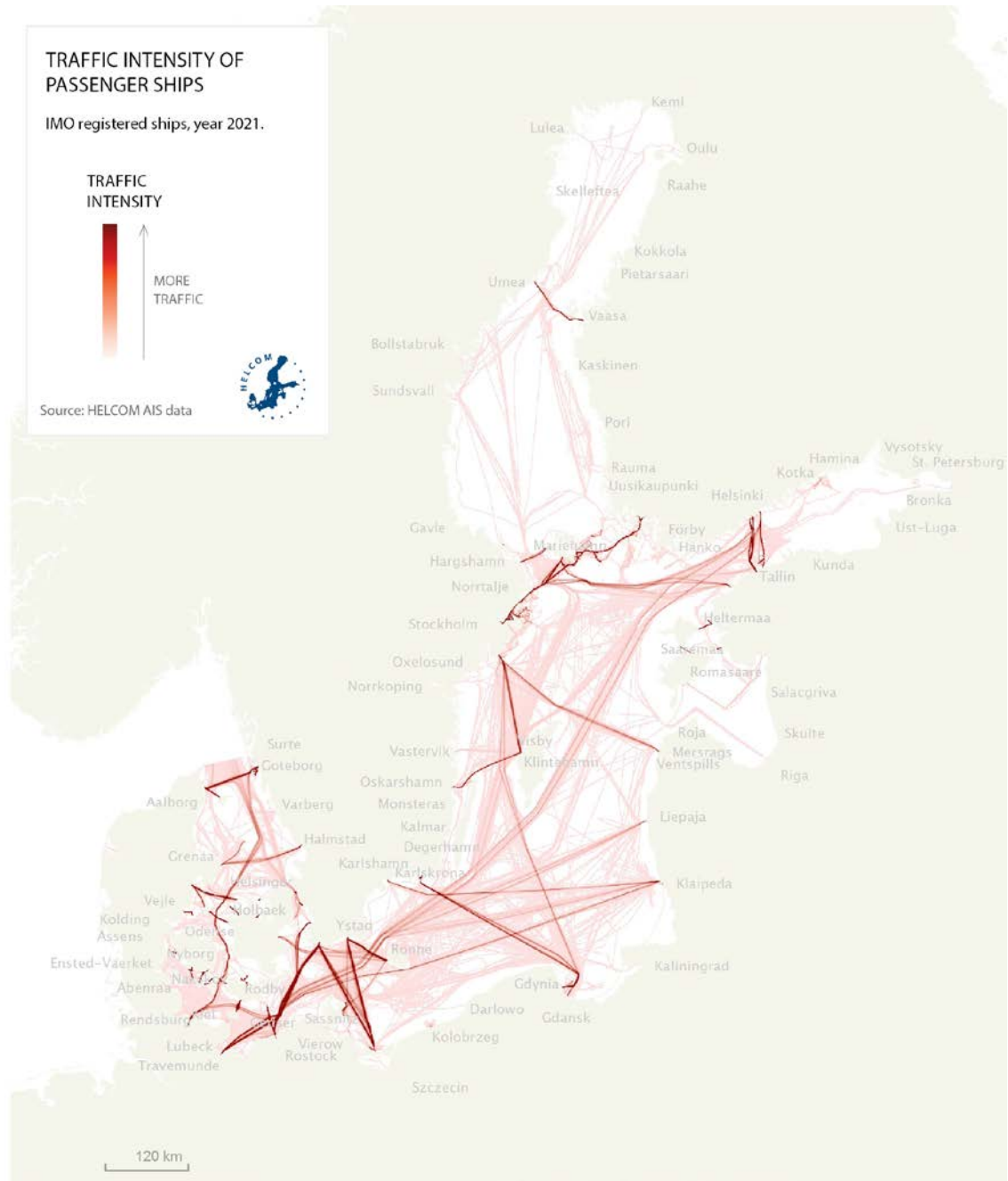


Figure 2: Traffic intensity map of all passenger ships in the Baltic Sea region in 2021. The fleet of the passenger ships can be divided into smaller categories.



There is a strong seasonal variation of the passenger ships activity in the Baltic Sea area (HELCOM, 2018). The number of ships operating on regular lines, such as the ferries, is decreasing every winter (cf. Figure 3). The cruise ships are mostly operating from April until October with an annual peak between June and August.

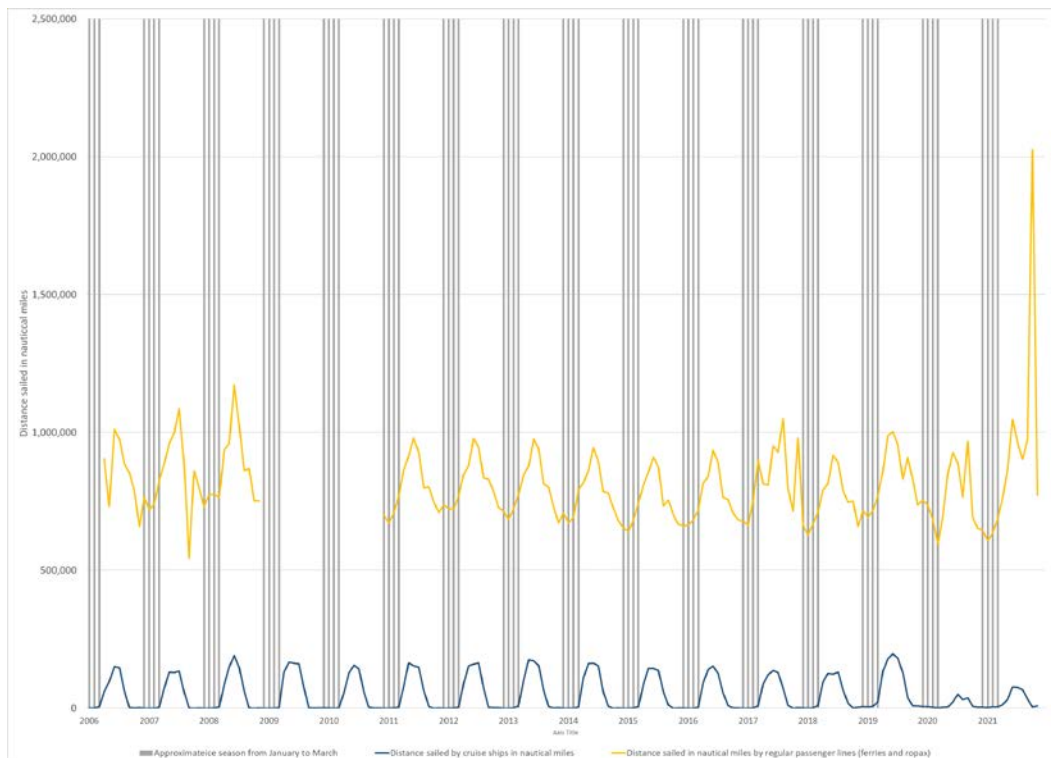


Figure 3: Distance sailed by cruise ships and regular passenger lines (including ferries, ropax and yachts) in the Baltic Sea (monthly values) based on the HELCOM AIS data. The data gap of 2009 and 2010 is due to missing AIS data from the Kiel channel entrance for these years. Data from 2006–2008 is uneven in quality which should be considered when interpreting the results, as well as the extreme data point at the end of 2021 (i.e., November).

## Ports visited by cruise ships

The ports called by cruise ships during 2021 are displayed in the map below (cf. Figure 4). The cruise ships are usually visiting the same ports every year, predominantly the major touristic cities in the Baltic Sea region.

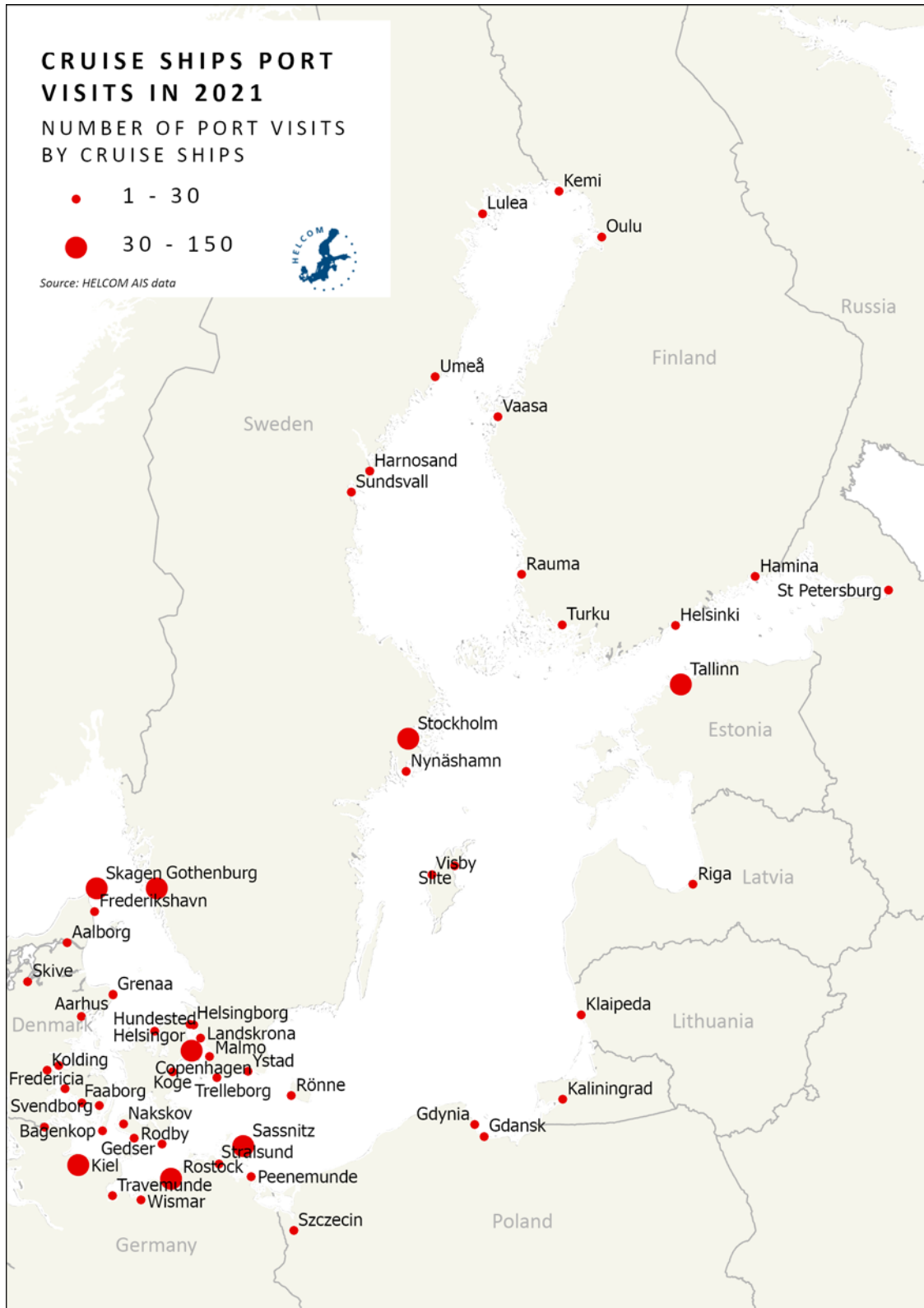


Figure 4: Cruise ships ports visits in 2021.

## Cruising season in the Baltic Sea

Every year, the cruising season in the Baltic Sea area stretches from the beginning of April to the end of September (cf. Figure 5 below). The rest of the time, the cruise ships are operating in other marine areas outside the Baltic Sea region. Most of the cruise ships operating in the Baltic Sea are coming from outside the region.

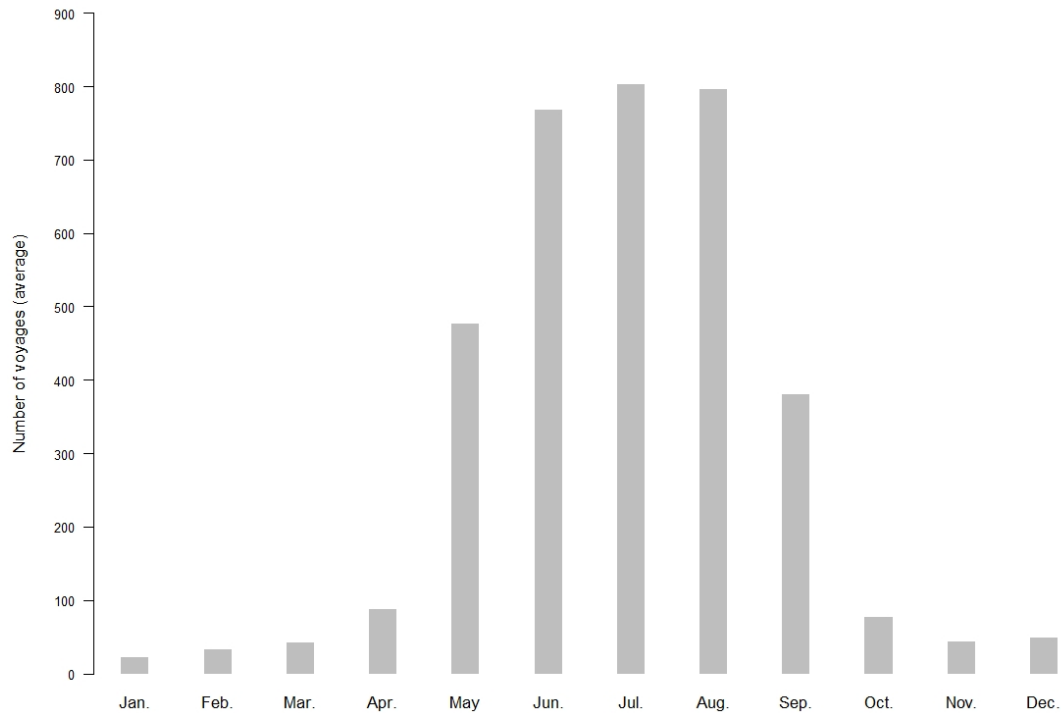


Figure. 5: Average number of voyages per month from 2006 to 2021, based on HELCOM AIS data.

## Duration of the stay in ports

Between 2006 and 2021, the international cruise ships usually stopped from 6 to 12 hours in the ports of the Baltic Sea (cf. Figure 6 below). Another minor peak is related to the stops with a duration between 35 and 37 hours in ports. From 2006 to 2021, it was mainly in the port of Saint Petersburg where the stops tended to be longer than in other ports of the Baltic Sea region.

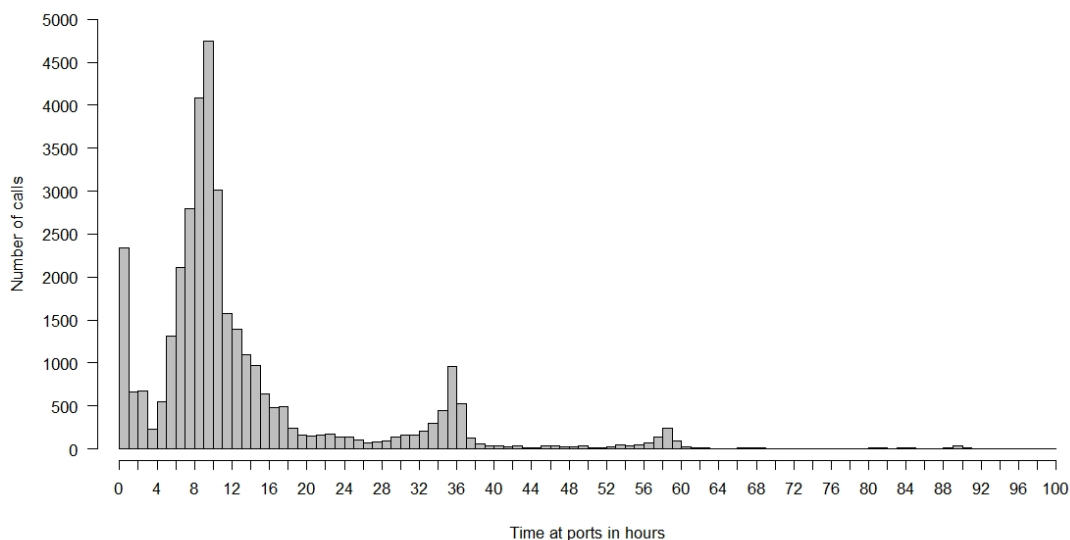


Figure 6: Duration of cruise ship visits (port calls) in the ports of the Baltic Sea from 2006 to 2021 based on HELCOM AIS data.

### Duration of the cruise ship voyages

Since 2006, half of the voyages of the cruise ships lasted between 9 to 20 hours (cf. Figure 7). Another cluster is related to the voyages with a duration between 31 to 41 hours at sea. More than 50% of these voyages are cruise ships traveling to Tallinn, Copenhagen, Rostock and Stockholm.

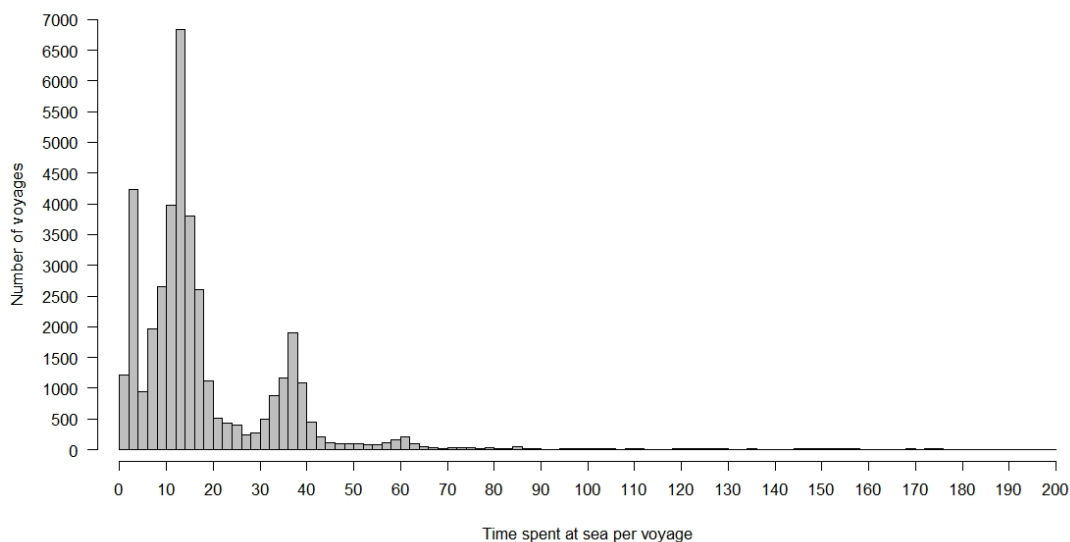


Figure 7: Duration of the voyages by cruise ships in the Baltic Sea area (hours), based on the HELCOM AIS data.

## Anchoring


According to the HELCOM AIS data, cruise ships do not always enter certain small ports. Instead, the ships anchor outside the ports and have tender or shuttle boats to transfer passengers to the shore. Anchoring stops with a duration of a few hours or more are observed occasionally in the HELCOM AIS data. Barges are available in several ports to discharge sewage from such ships.

### 3. Ports specific information

This report provides detailed information on all ports of the Baltic Sea region that cruise ships are visiting, as provided by national administrations and ports. The information of each port is organized as follows:

#### Port (Country)

<http://www.xxx>. UN LOCODE: XXXXXX

 Berth used by cruise ships according to AIS data during April - October 2014. Coordinates for the berths where sewage PRF are available for ships. Colour coding could illustrate where the PRF are fixed and where they are mobile and available on request.



#### I. Sewage Port Reception Facilities

Information about sewage PRF in the port. The information includes the following:

- Number of berths and information on which berths do/do not have PRF availability
- Capacity of PRF
- Are PRF fixed or mobile, always available or only upon request (how early before ship arrival, if prior request is required)
- Are there limitations or requirements regarding sewage quality
- Fee structure (no-special-fee, discounts, additional charges etc.)
- Any important information regarding the operability of the PRF

Depending on the size, type and complexity of the port and its traffic pattern, the level of detail provided in this section may vary.

#### Planned improvements

Information about future improvements for sewage PRF.

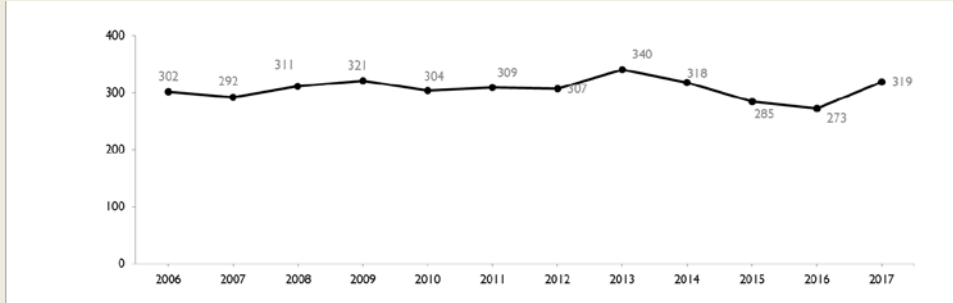
#### Additional information

Other information of relevance for shipowners regarding sewage PRF and procedures in the port. Information may also be provided about when sewage PRF were first introduced in the port and how they have been developed.

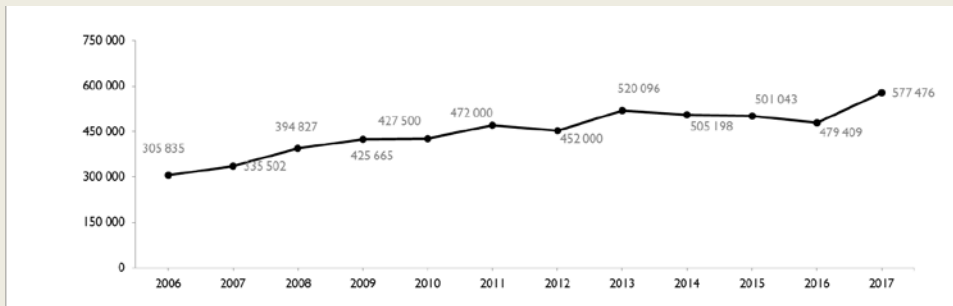
## 2. Passenger traffic trends in the port

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

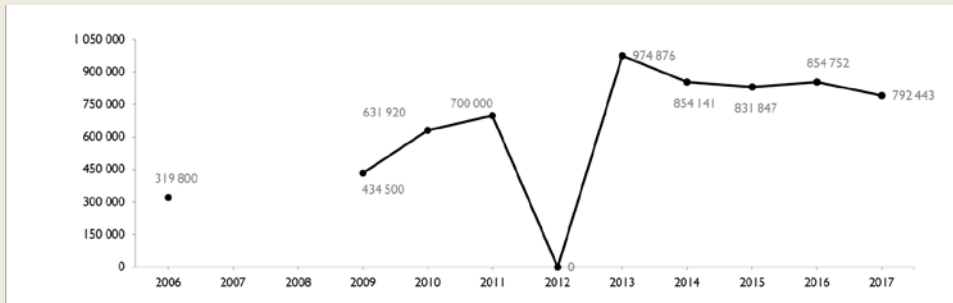
### Cruise ships calls



### Cruise ships passengers



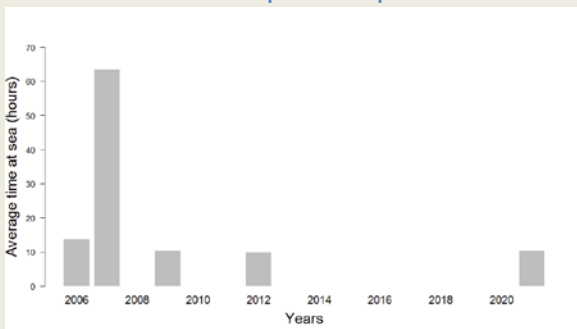
### International cruise and ferry passengers



## 3. Cruise ship visits in the port

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

### 3.1. Time at sea from previous port



### 3.2. Time spent at port per call

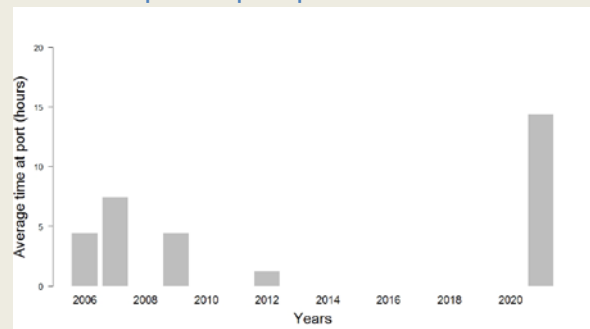
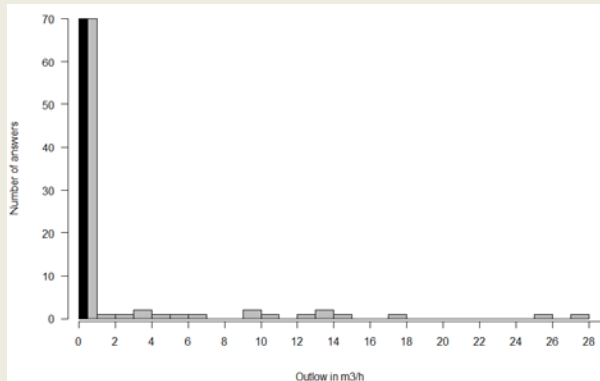


Figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014). It is envisaged to update this information based on the information compiled through a new [online survey](#) launched in May 2022, which will be opened for input by early December 2022.

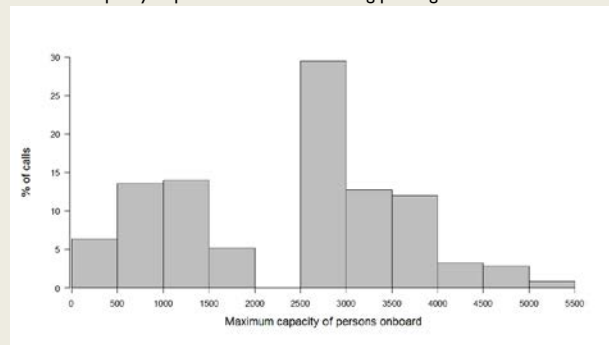
### 3.3. Sewage discharges



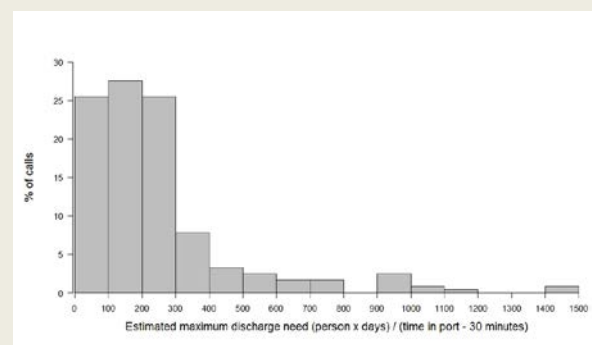
### 3.4. Comments from cruise ships on port facilities (2014)

### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.



# Aarhus (Denmark)

<http://www.aarhushavn.dk/> UN LOCODE: DKAAR

Berth used by cruise ships according to AIS data during April - October 2014



## 1. Sewage Port Reception Facilities

No information available.

## Planned improvements

No information available.

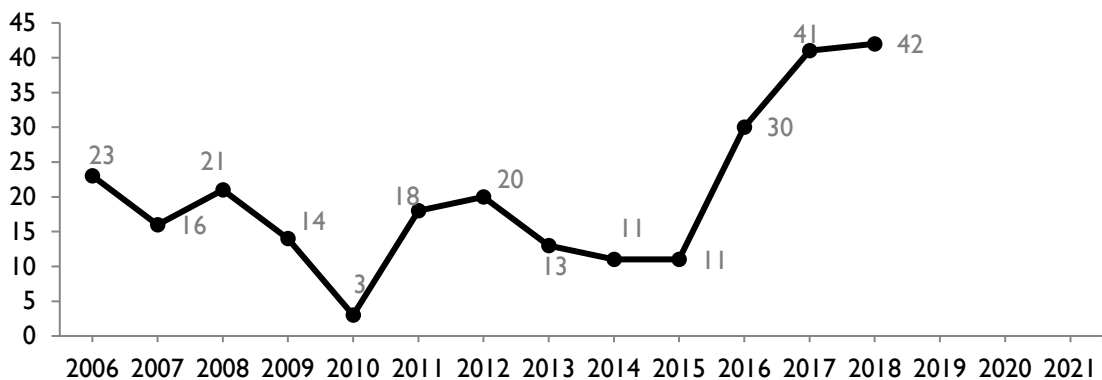
## Additional information

No information available.

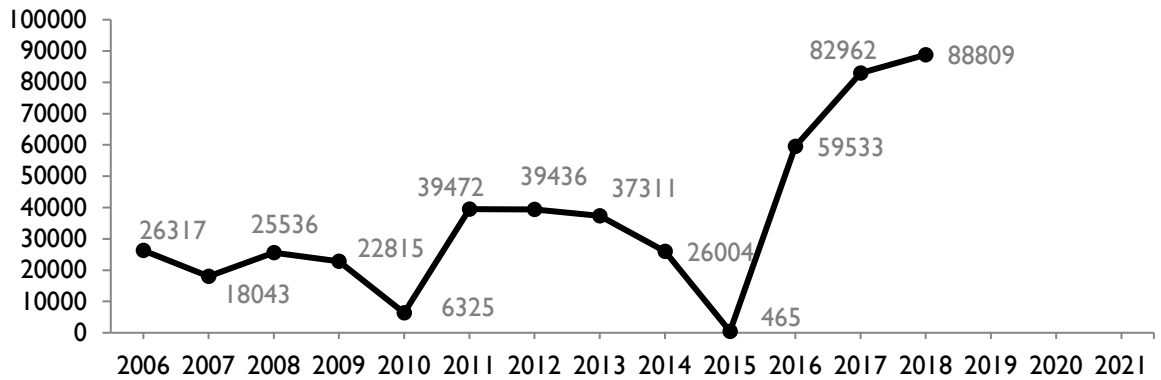
## 2. Passenger traffic trends in Aarhus

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

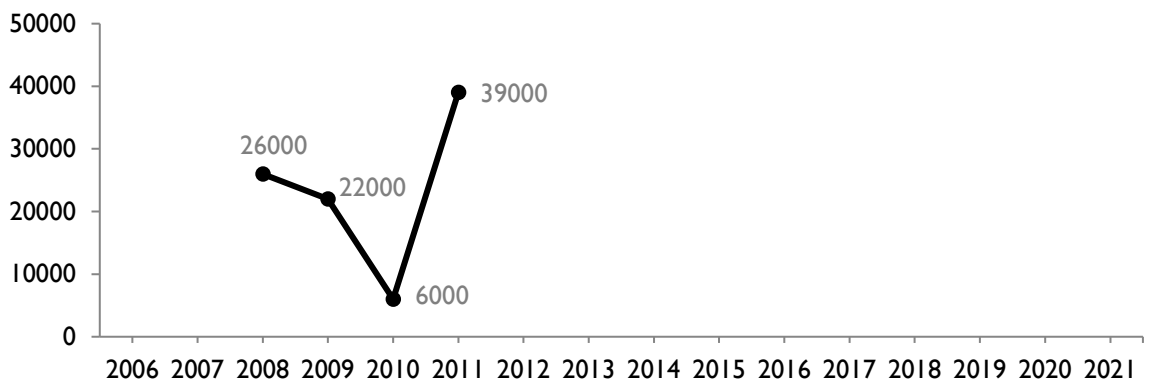
Cruise ships calls:



Cruise ships passengers:



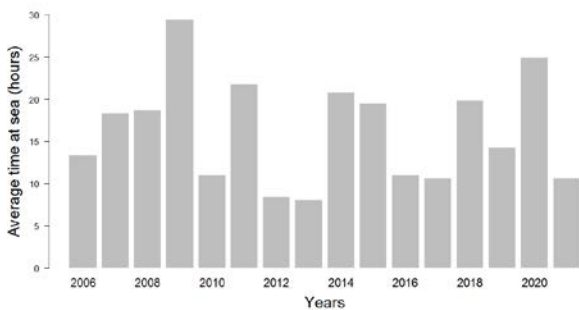
International cruise and ferry passengers:



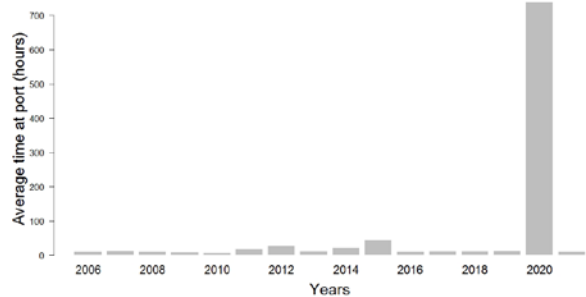
### 3. Cruise ship visits in Aarhus

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

### 3.3. Sewage discharges

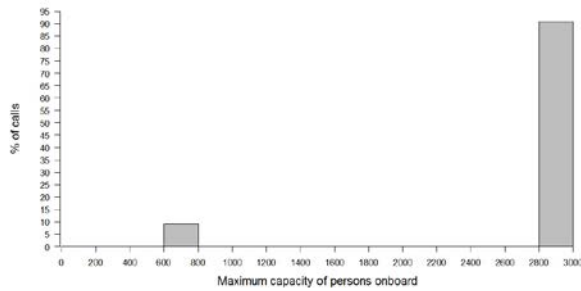
No information available.

### 3.4. Comments from cruise ships on port facilities (2014)

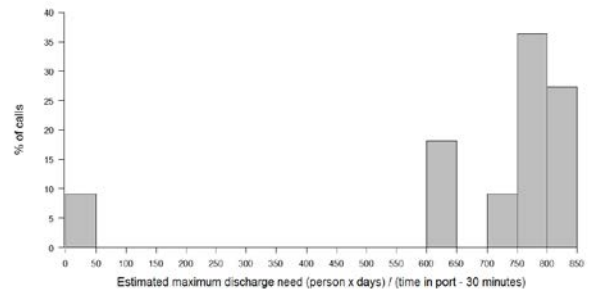
No information available.

### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Copenhagen (Denmark)

<http://www.cmpport.com/> UN LOCODE: DKCPH

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

Sewage (black and grey water) discharged ashore to sewer system or tank car shall comply with the following emission limits:

Parameter	Limit (maximal concentration and/or value)
pH	6,5 – 9
Suspended material	750 mg/l
Inhibition of nitrification	< 20 %
DEHP	87 µg/l
Trichloroethene (TCE)	100 µg/l
Copper	100 µg/l
Zinc	3 mg/l

Compliance with these limitations, in accordance with § 28 (3) of the Danish Ministry of Environment's Ordinance on the Environmental Protection Act No. 1317 (2015) as well as the most recent EU requirements and IMO/MARPOL standards, are required for discharge permission.

It is the ships responsibility to secure compliance with the emission limits before initiating discharge of sewage. CMP might take randomized sample test on discharged sewage from ships, for analysis of listed parameters at an accredited laboratory, to secure compliance.

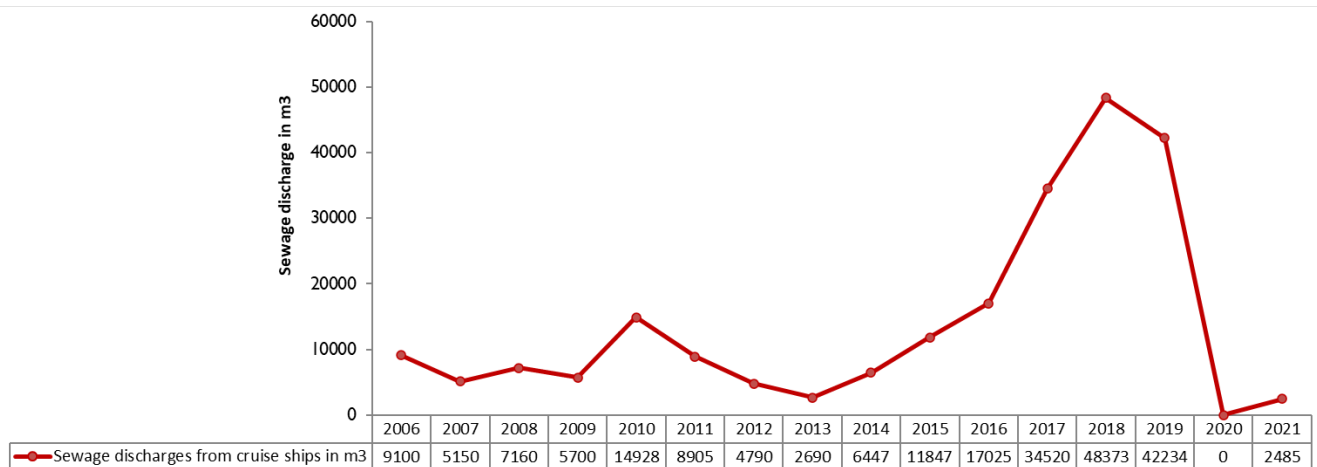
Sewage/ Treated wastewater pumped ashore must be free from contamination of other waste or products, such as oily waste, chemicals, or other substances that can be harmful to sewage treatment plants and the marine environment.

### Planned improvements

-

### Additional information

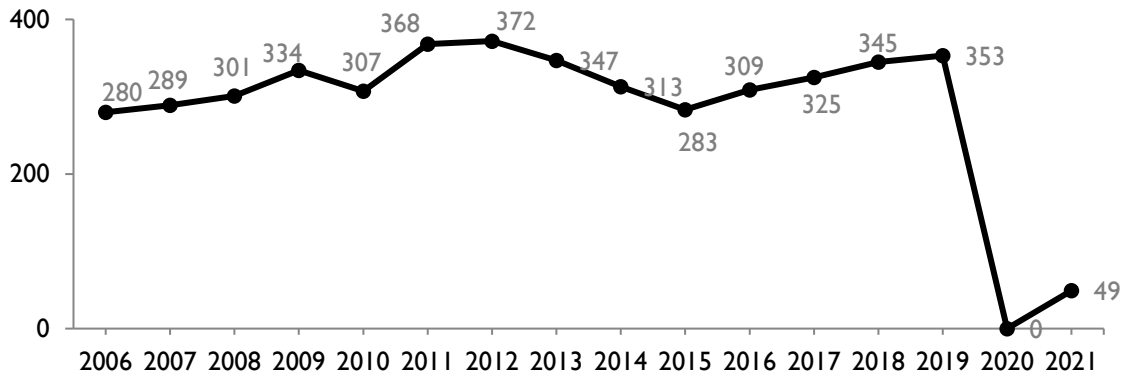
-



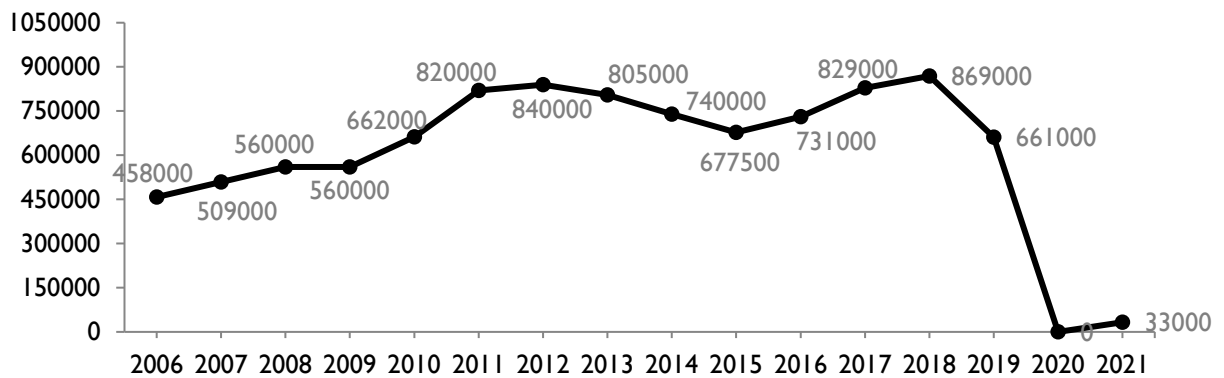
## 2. Passenger traffic trends in Copenhagen

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

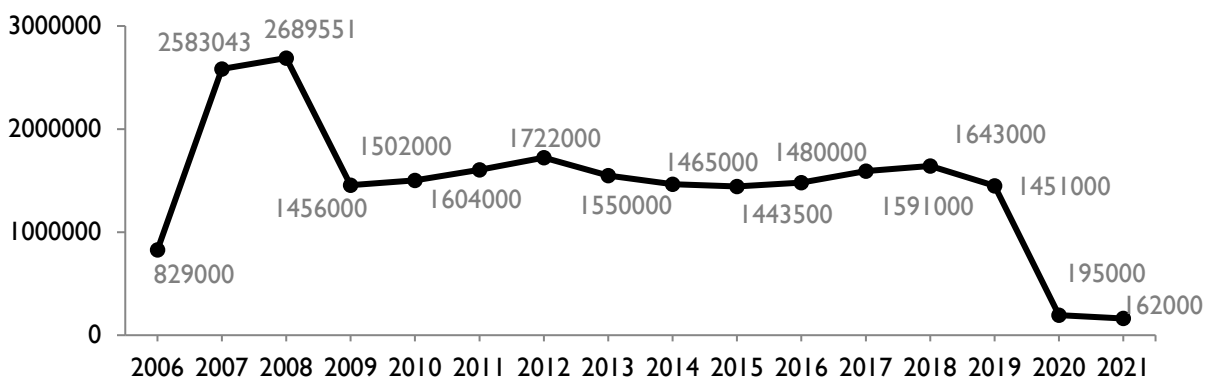
Cruise ships calls:



Cruise ships passengers:



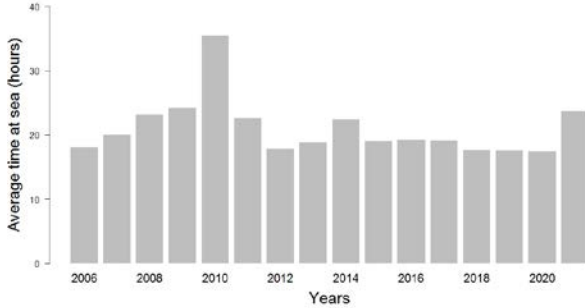
International cruise and ferry passengers:



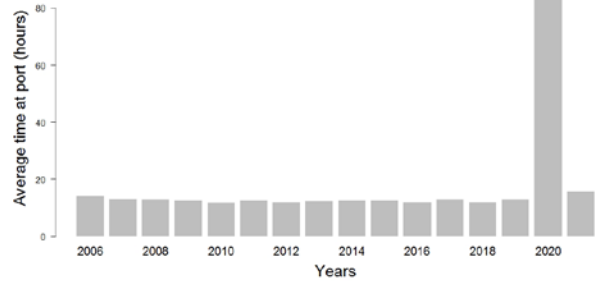
### 3. Cruise ship visits in Copenhagen

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

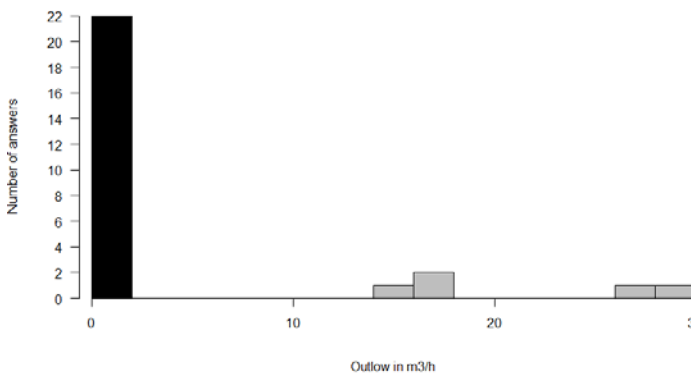


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

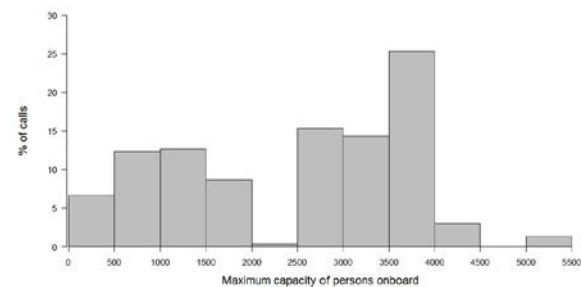


#### 3.4. Comments from cruise ships on port facilities (2014)

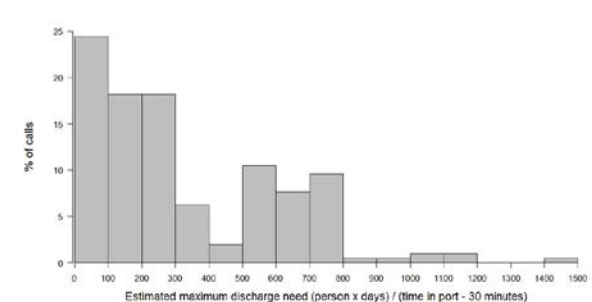
Because of the presence of passengers, the use of road tankers can be a safety issue. There are unreasonable charges for the use of the facilities for sewage.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew




#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Flensburg (Germany)

UN LOCODE: DEFL

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

No information available.

## Planned improvements

No information available.

## Additional information

No information available.

## 2. Passenger traffic trends in Flensburg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

Cruise ships calls:

No information available.

Cruise ships passengers:

No information available.

International passengers:

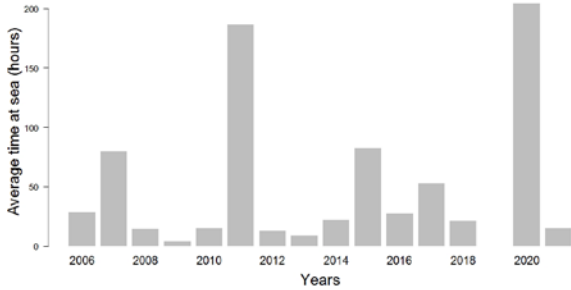
No information available.



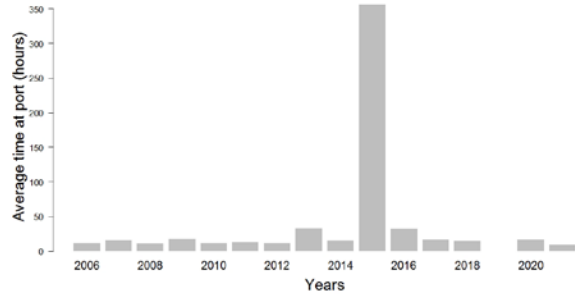
### 3. Cruise ship visits in Flensburg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

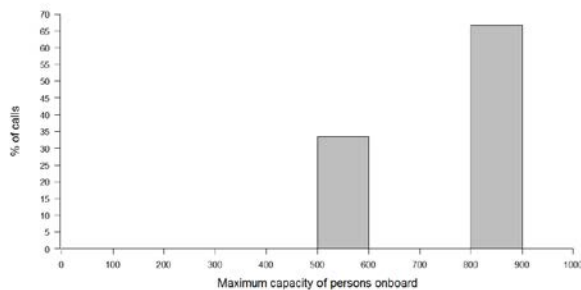
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

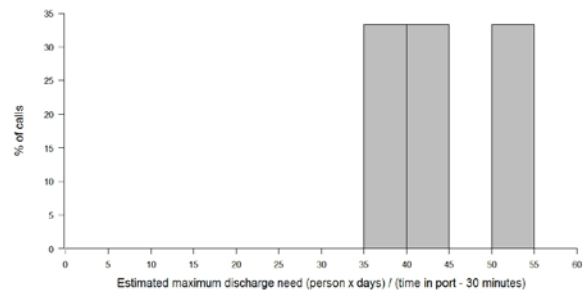
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew




#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Fredericia (Denmark)

UN LOCODE: DKFRC

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

In 2018, there were 1159 m<sup>3</sup> sewage discharges from cruise ships.

## Planned improvements

No information available.

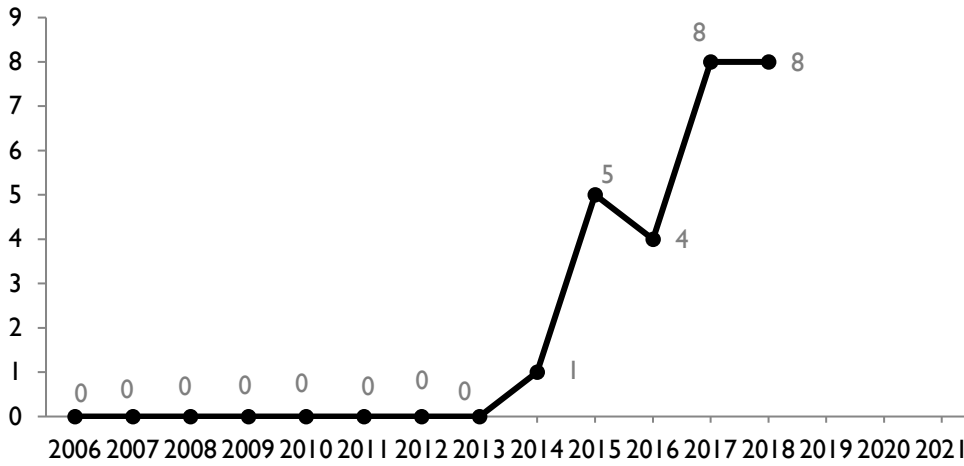
## Additional information

No information available.

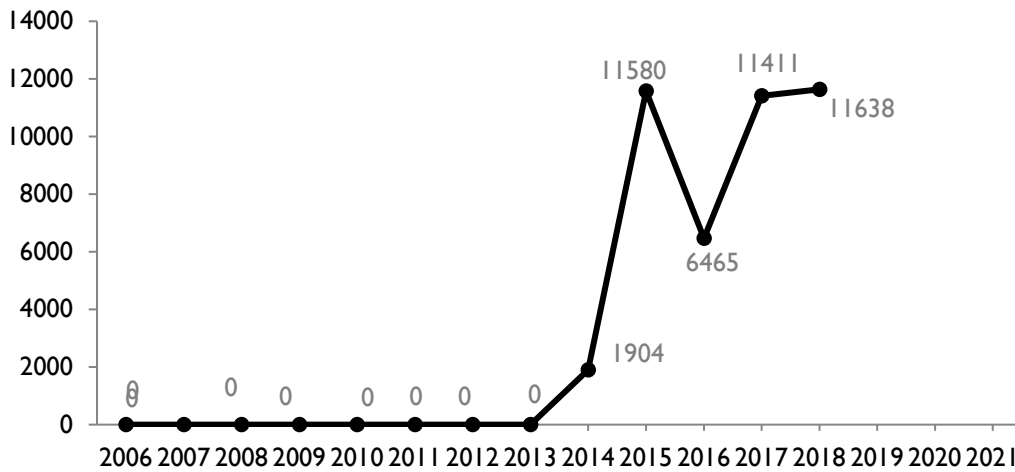
## 2. Passenger traffic trends in Fredericia

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

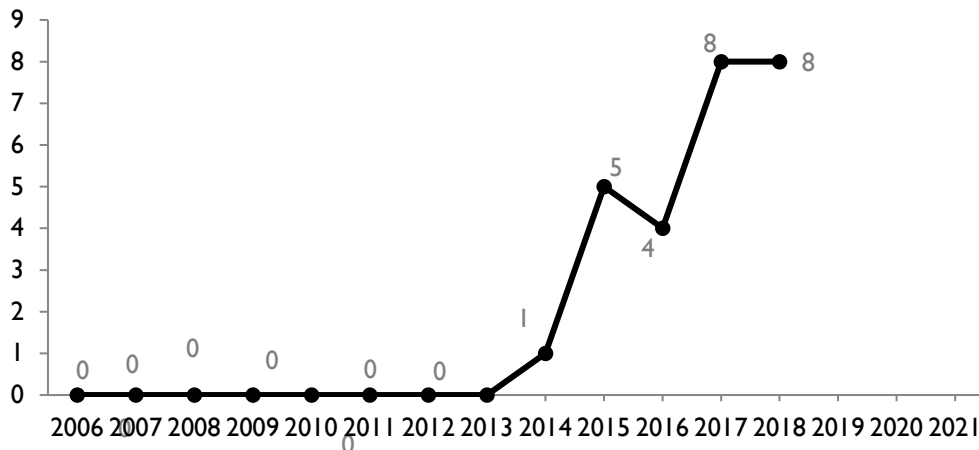
Cruise ships calls:



Cruise ships passengers:



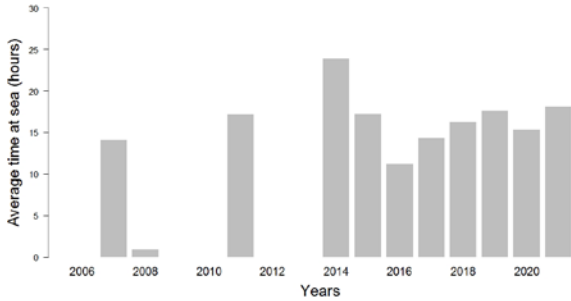
International passengers:



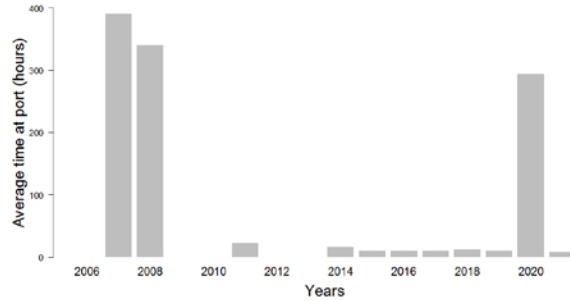
### 3. Cruise ship visits in Fredericia

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

Time at sea from previous port	10
Time spent at port during the call	10
Maximum number of persons onboard	2796

Only 1 call was reported during the joint HELCOM-CLIA survey.

#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

Estimated theoretical maximum discharge need<sup>1</sup> 116,5

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Gdansk (Poland)

<http://www.portgdansk.pl/en> UN LOCODE: PLGDN

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

There are currently two quays: Ziółkowskiego and Westerplatte that are adjusted to receive sewage from passenger ships via fixed connection:

1. Infrastructure at Ziółkowskiego Quay: 2 fixed PRF directly connected to municipality sewage system, maximum capacity of PRF - 40 m<sup>3</sup>/h.
2. Infrastructure at Westerplatte Quay: 5 fixed PRF directly connected to port's mechanical-biological sewage treatment plant, maximum capacity of PRF - 40 m<sup>3</sup>/h.

The third one – Oliwskie Quay, passenger ships used tank trucks with capacity of 10 m<sup>3</sup> /h each.

The sewage tariff can be found on the port's website: <http://www.portgdansk.pl/shipping/types-of-waste>.

Reception of sewage from passenger ships is conducted by 3 tank trucks of capacities 15 m<sup>3</sup>/h each, which are adequate for current needs.

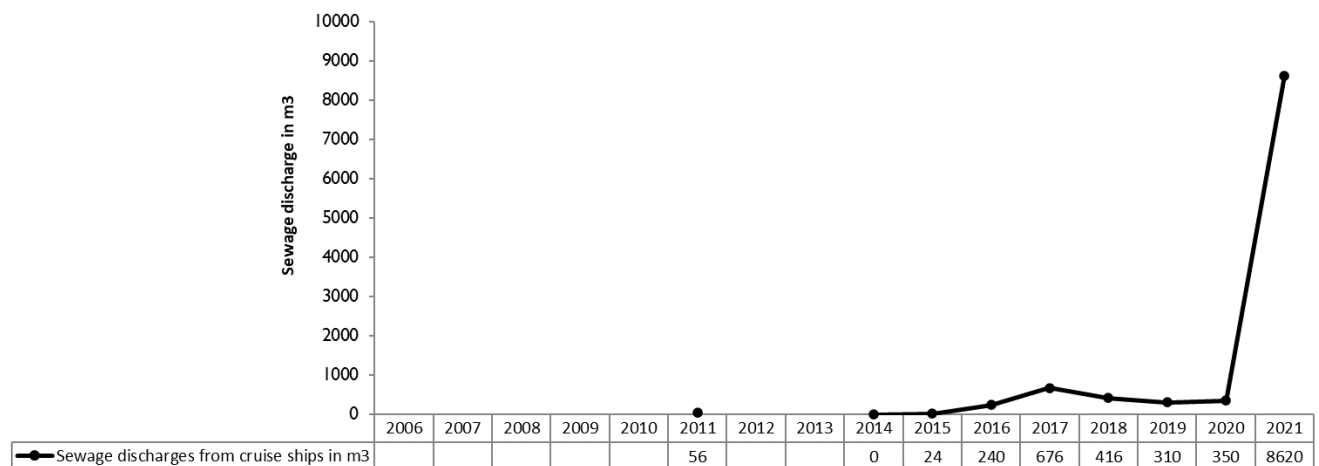
Passenger ships entering Port of Gdansk are allowed to discharge 1/3 of sewage in accordance with the tonnage tariff. The rest of the sewage is charged at the fixed rates that can be found on the port's website: <http://www.portgdansk.pl/shipping/types-of-waste>.

## Planned improvements

Sewage will be discharged directly to municipal sewage system (currently only Ziółkowskiego Quay is connected to municipal sewage system). The construction works at Westerplatte Quay will end in 2024.

## Additional information

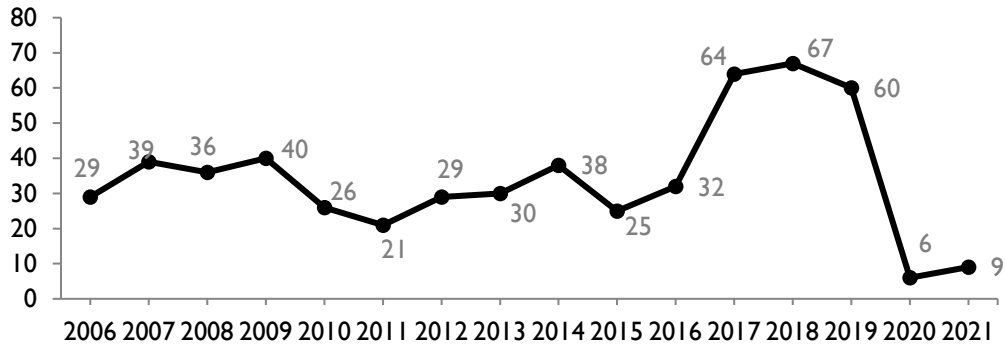
No information available.



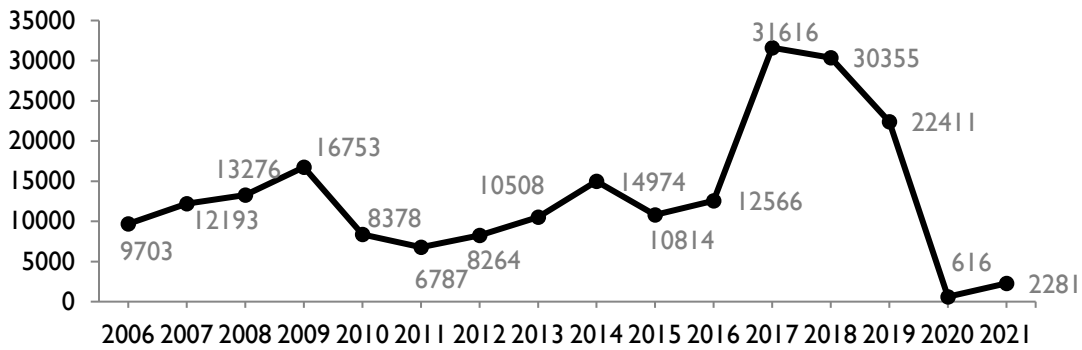
## 2. Passenger traffic trends in Gdansk

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

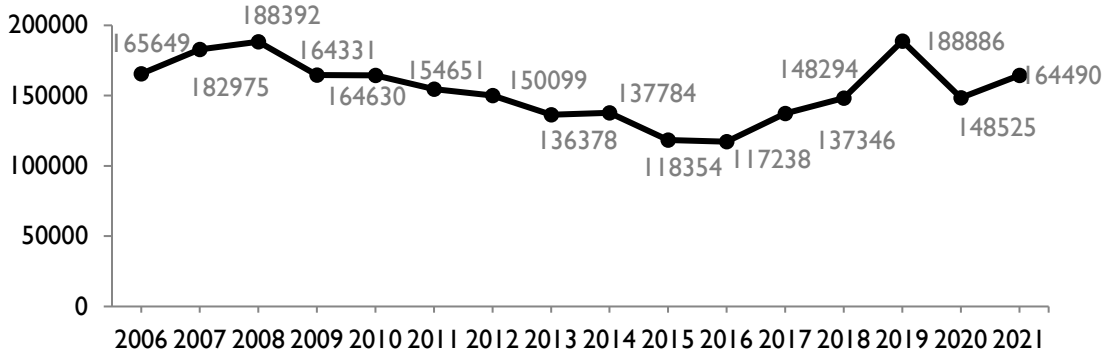
Cruise ships calls:



Cruise ships passengers:



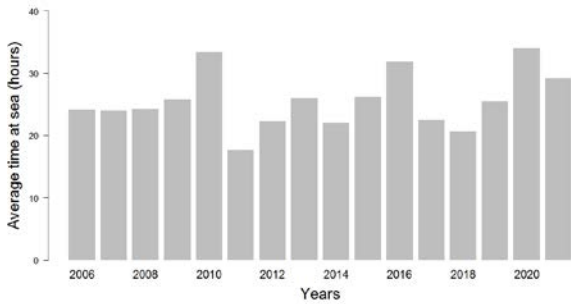
International cruise and ferry passengers:



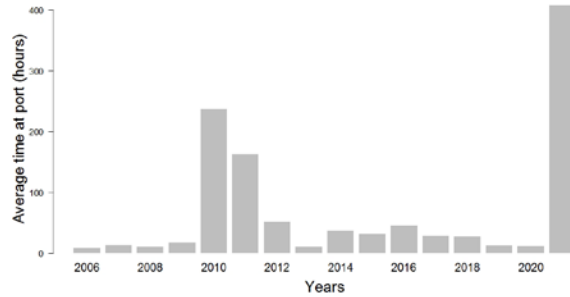
### 3. Cruise ship visits in Gdansk

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

Total sewage discharges in 2021 is 8 771,8 m<sup>3</sup>

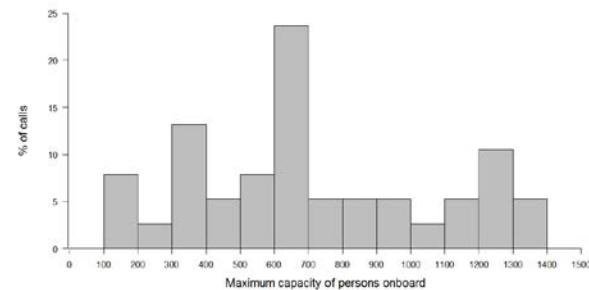
#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

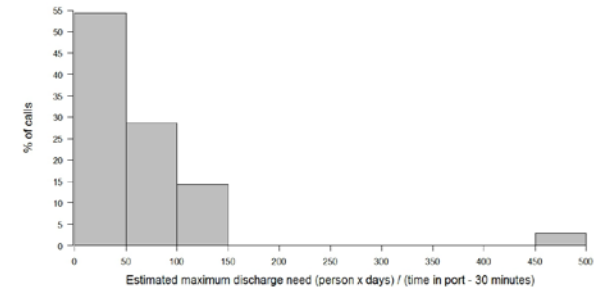
#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

In 2021 – the biggest ship noted with max. capacity of persons onboard: 1260 (real number of passengers – 562).



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Gdynia (Poland)

<http://www.port.gdynia.pl/> UN LOCODE: PLGDY

Location of the port of Gdynia.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

Fixed PRF dedicated for ferries and cruises are available on 3 berths: French, Polish and Helskie II.

### Capacity of PRF

- French Quay - cruises – [max capacity 200 m<sup>3</sup>/h]
- Polish Quay - new ferry terminal - [max capacity 105 m<sup>3</sup>/h]
- Helskie II Quay – old ferry terminal - [max capacity 50 m<sup>3</sup>/h]
- Tank trucks are used for merchant ships. 3 tank trucks (4.5 m<sup>3</sup>, 5.2m<sup>3</sup>, 10m<sup>3</sup>), 1 vat (30m<sup>3</sup>), max. quantity – 40 m<sup>3</sup>.

The ship's captain / agent at least 24 hours before the ship's entry into the port submits a waste declaration through the system NSW - National Single Window. Submitting the declaration in the NSW system is an automatic order for the company collecting waste at the Port of Gdynia.

Before the discharge of sewage to the installation, platforms with measuring sensors for testing the quality of sewage are connected to the ship each time.

If the parameters below are exceeded, an additional fee will be charged for collecting sewage from ships. After exceeding the following parameters, the autosampler will automatically take samples of sewage discharged from ships.

To ensure compliance, the above samples will be submitted to an accredited laboratory for a detailed analysis of the sewage composition.

Parameter	Limit (maximal concentration and/or value)
PH value:	6,5 -10
PAH	0,5 mg/l
COD (Chemical oxygen demand)	6000 mg/l
Conductivity	3,5 mS/cm
Ammonia nitrogen	300 mg/l

If the content of PAH (polycyclic aromatic hydrocarbons) in the sewage is exceeded, the Port of Gdynia will treat such sewage as waste. Collection of this type of waste will be possible only on commercial terms.

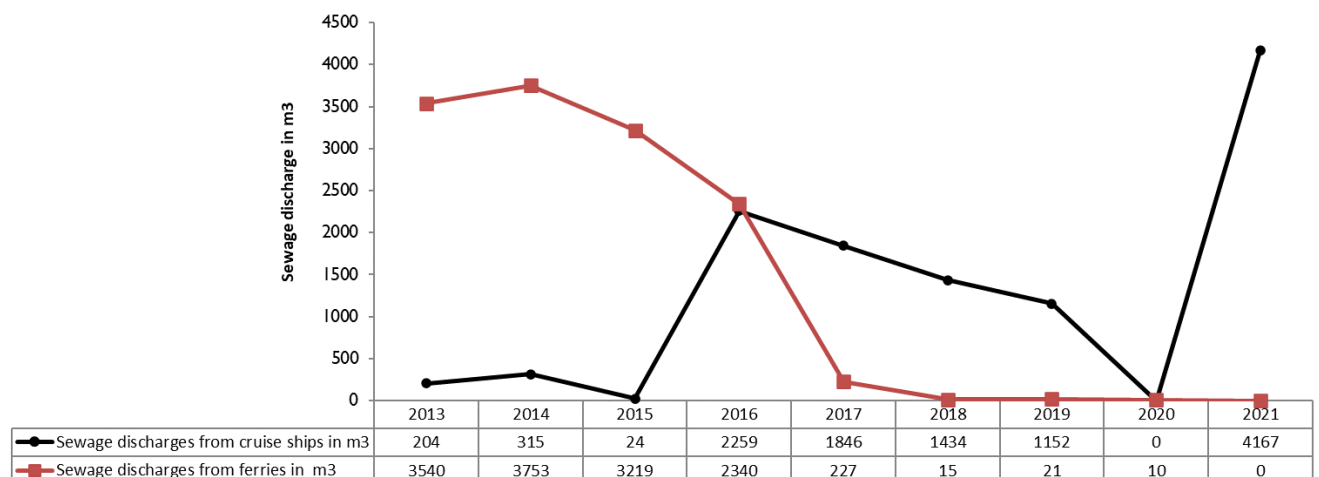
Fee structure can be found on the Port of Gdynia website: [Odpady statkowe - Port Gdynia](#)

## Planned improvements

-

## Additional information

-

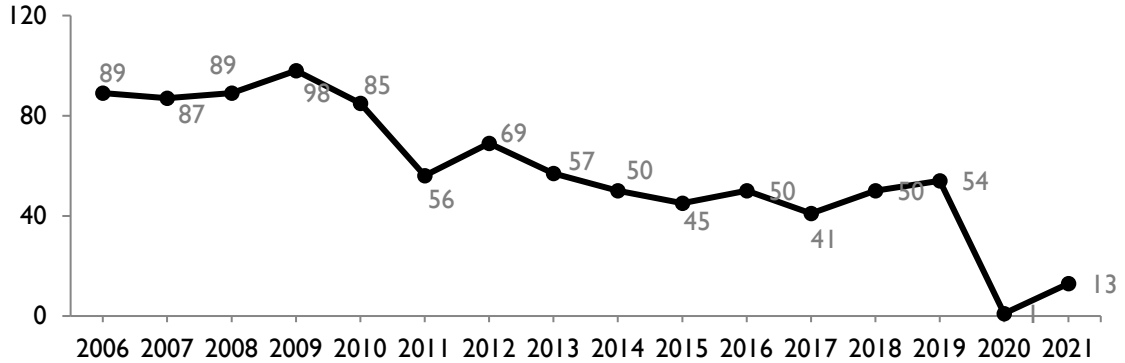




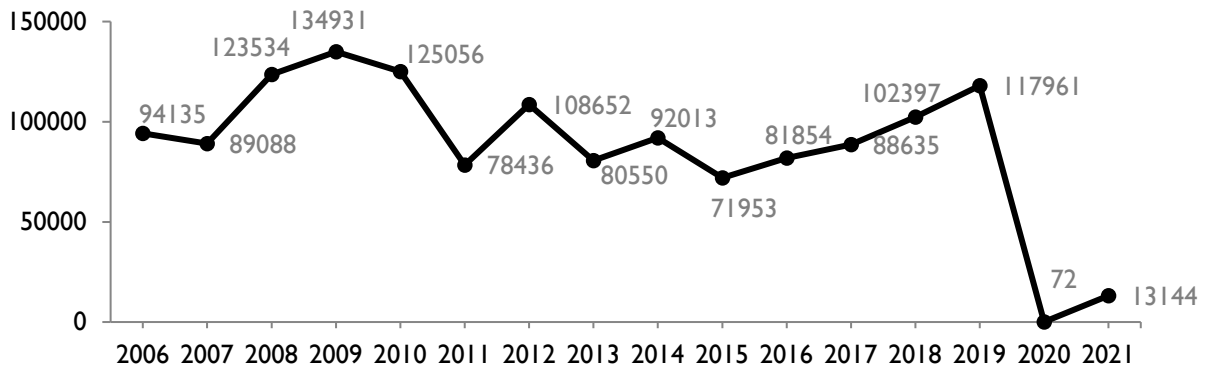
## 2. Passenger traffic trends in Gdynia

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

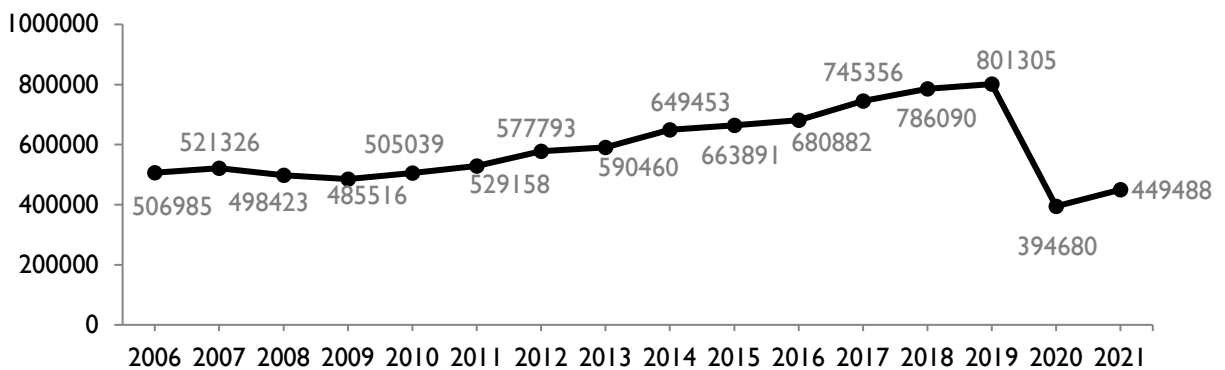
Cruise ships calls:



Cruise ships passengers:



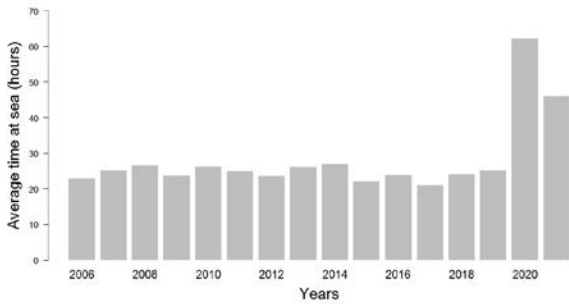
International passengers:



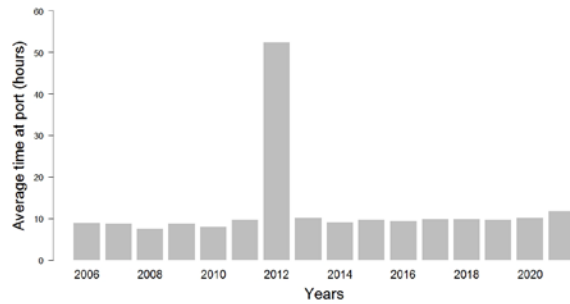
### 3. Cruise ship visits in Gdynia

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

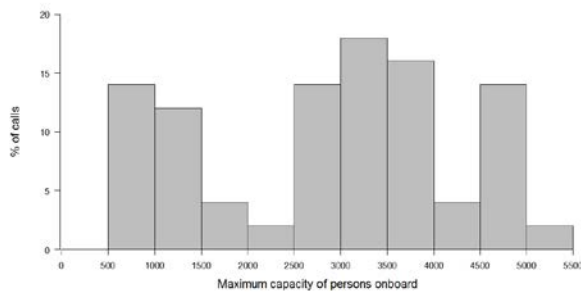
Total sewage discharges from passenger ships in m<sup>3</sup>: 2012 – 3488; 2013 – 4007; 2013 – 4803, 2014 – 4809; 2015 – 3636; 2016 – 5279.

#### 3.4. Comments from cruise ships on port facilities (2014)

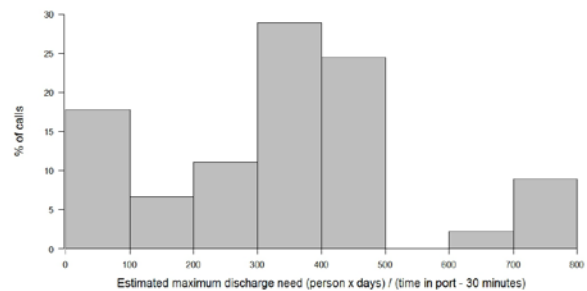
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



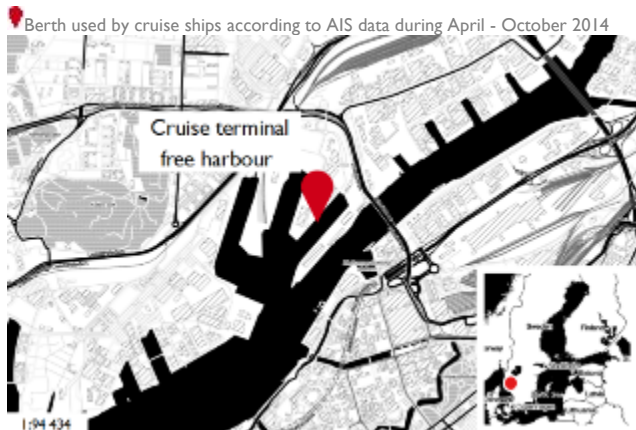
#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Gothenburg (Sweden)

<http://www.goteborgshamn.se/> UN LOCODE: SEGOT



## I. Sewage Port Reception Facilities (information from 2019)

Cruise ship berths are available at Arendal Cruise Terminal and at America Cruise terminal (Frihamnen stopped receiving cruiseships by 2018).

There is direct connections to the municipal waste-water treatment plants available in all locations, with the capacity of 40-45 m<sup>3</sup>/h. In America Cruise terminal and Arendal Cruise Terminal the capacity is 100 m<sup>3</sup>/h.

Barge is available with a maximum capacity of 450 m<sup>3</sup>.

Ferry traffic has their own piers from where they have arranged their sewage discharge.

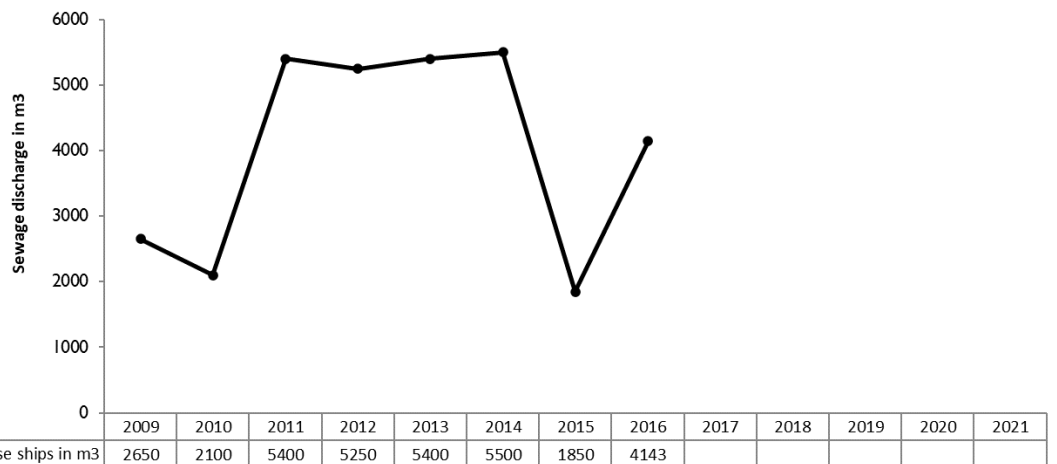
The use of PRF for discharging sewage is included in the port fee.

## Planned improvements

No planned improvements

## Additional information

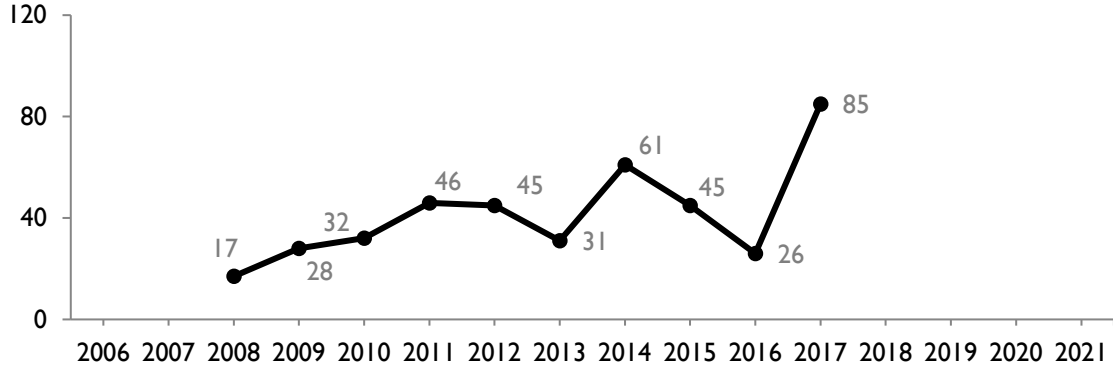
Direct connection from 2009 in Frihamnen, from 2012 in Arendal and from 2018 in America Cruise terminal.



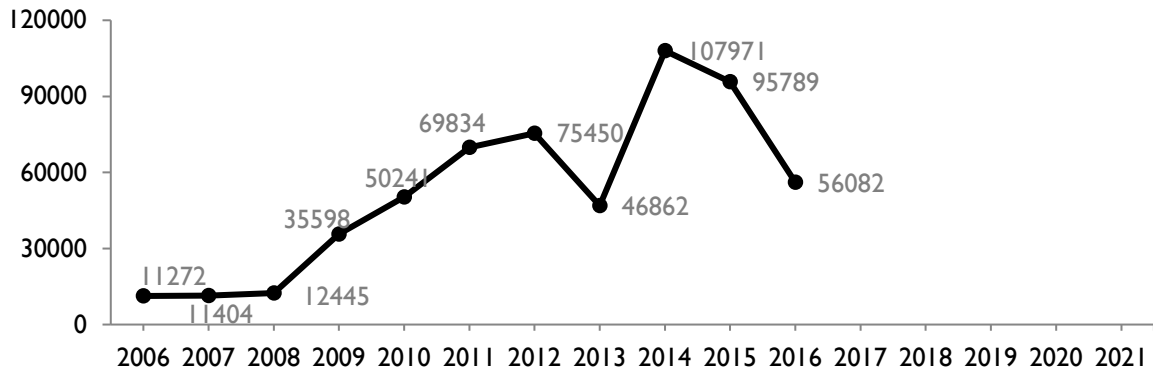
## 2. Passenger traffic trends in Gothenburg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

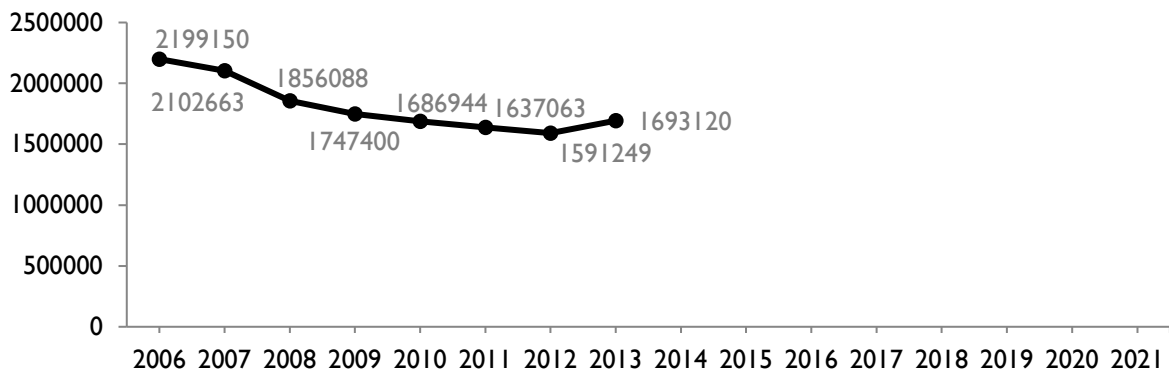
Cruise ships calls:



Cruise ships passengers:



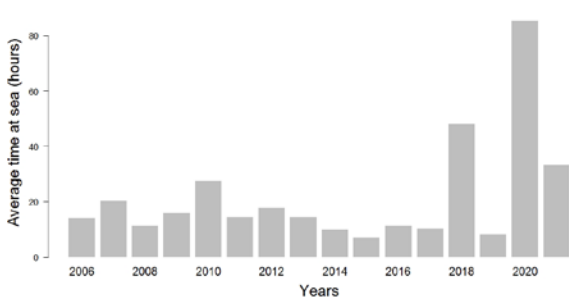
International cruise and ferry passengers:



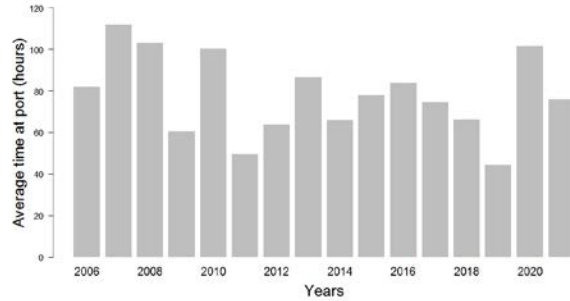
### 3. Cruise ship visits in Gothenburg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

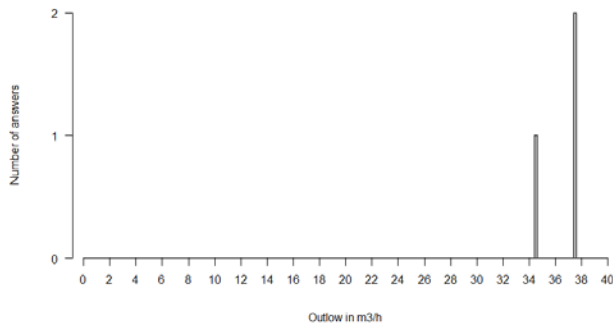


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

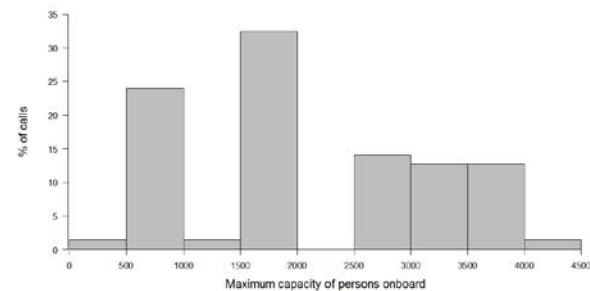


#### 3.4. Comments from cruise ships on port facilities (2014)

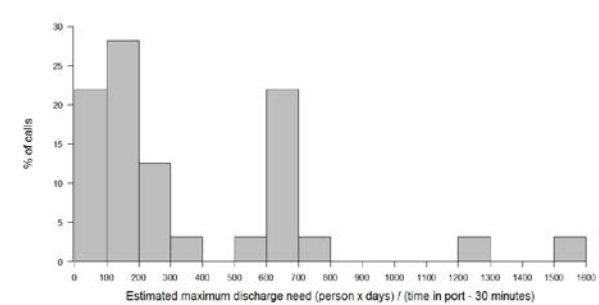
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Hamina, including Kotka (Finland)

UN LOCODE: FIHMN

Red arrows indicate the cruise berths: Mussalo B-berth, City Harbour I-berth, Hamina EU-berth. PRF are available at every berth.



## I. Sewage Port Reception Facilities

All berths are served by 24/7 mobile reception facilities. The port has a contract with service provider that operates three vacuum trucks with capacity 15 m<sup>3</sup> each.

No direct discharge to municipal sewage system available.

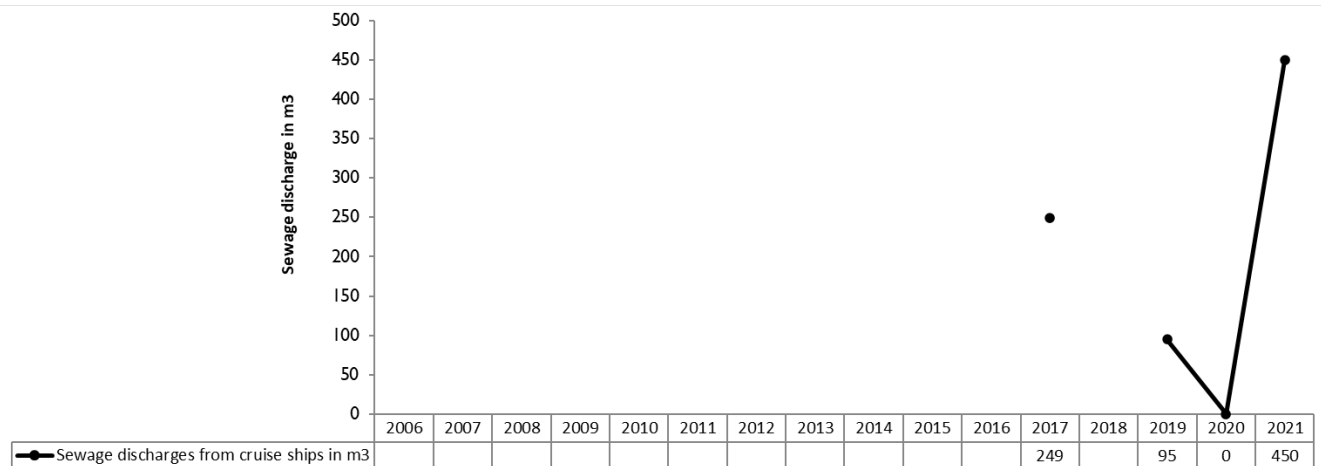
Waste fee charged from each ship includes delivery of sewage. Max. vacuum truck(s) operating time included in the fee is 5 hours.

## Planned improvements

Fixed sewage reception facilities will be completed and in operation in summer 2022 at City Harbour I-berth. Sewage will be directly discharged to the municipal sewage system.

## Additional information

-



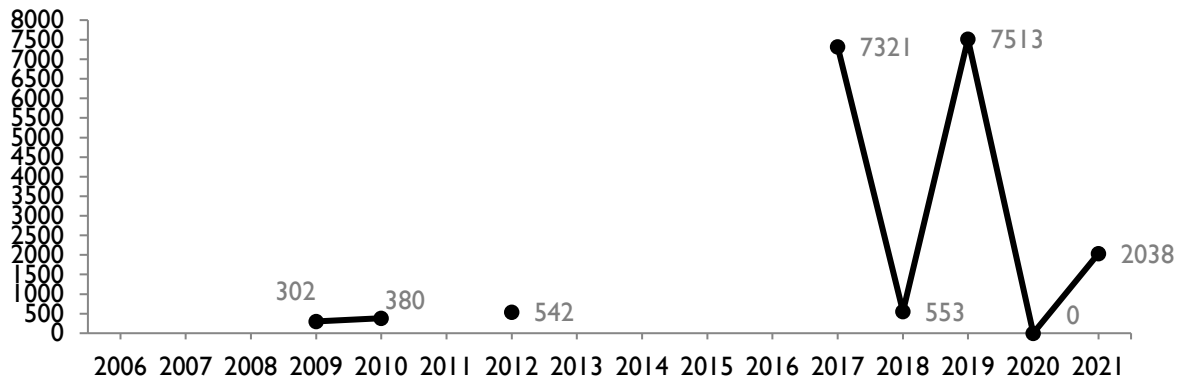
## 2. Passenger traffic trends in Ports of Hamina / Kotka

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

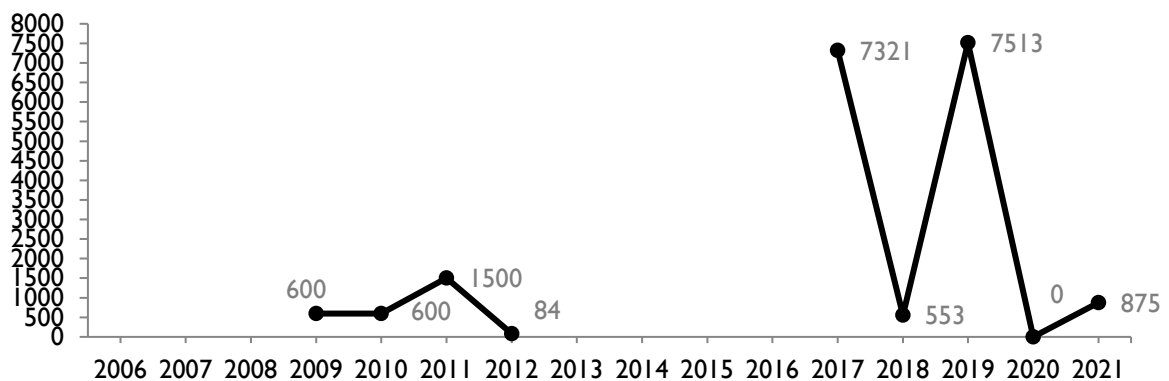
Cruise ships calls:



Cruise ships passengers:



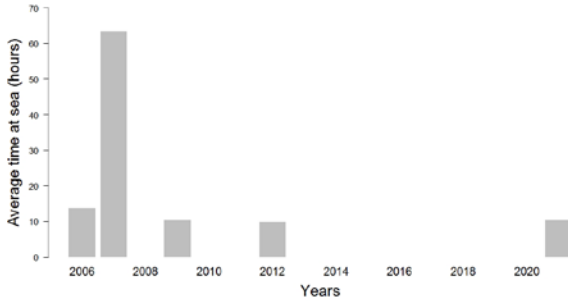
International passengers:



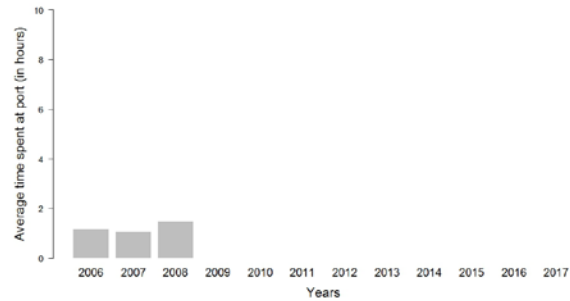
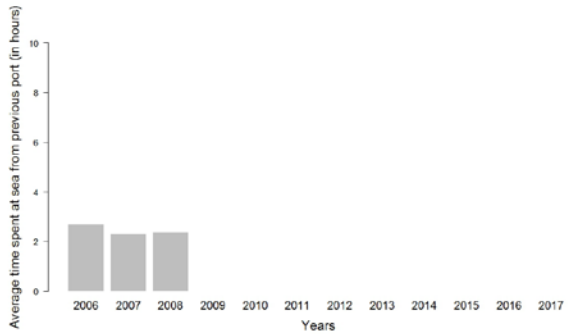
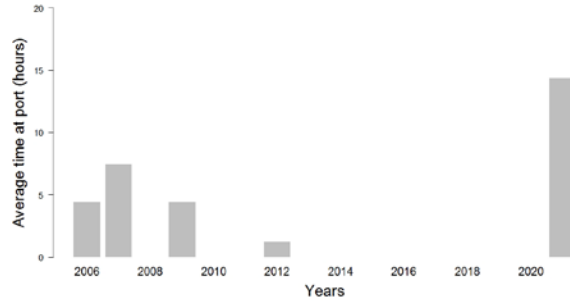
### 3. Cruise ship visits in Ports of Hamina / Kotka

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

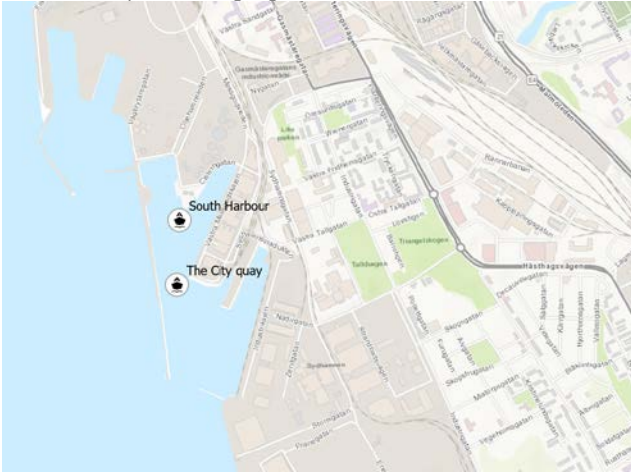
<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.



# Helsingborg (Sweden)

<http://www.port.helsingborg.se/> UN LOCODE: SEHEL

Location of the port of Helsingborg.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

Port of Helsingborg has the possibility to receive cruise ships in the South and North Harbour.

In the South Harbour (Pos. 56.024528227483465 N, 12.698104137390873 E), we have several quays to offer cruise ships, with a draft of a maximum of 11 meters and a length of 250 meters (LOA).

The City quay (Pos. 56.02222474012341 N, 12.697776979688127 E) has a depth of 7 meters and can accommodate ships with a draft of 6.5 meters. The quay is 180 meters and the mooring vessels can be 150 meters long (LOA).

Tank trucks are available for cruise ships with capacity to receive min. 5 m<sup>3</sup>/h and 8 m<sup>3</sup>/truck. Prior request is required.

Ferry companies handle sewage at their own pier, which is a direct connection to the municipal waste-water treatment plant.

The discharge of sewage at port is included in the general waste fee.

## Planned improvements

No changes in 2021.

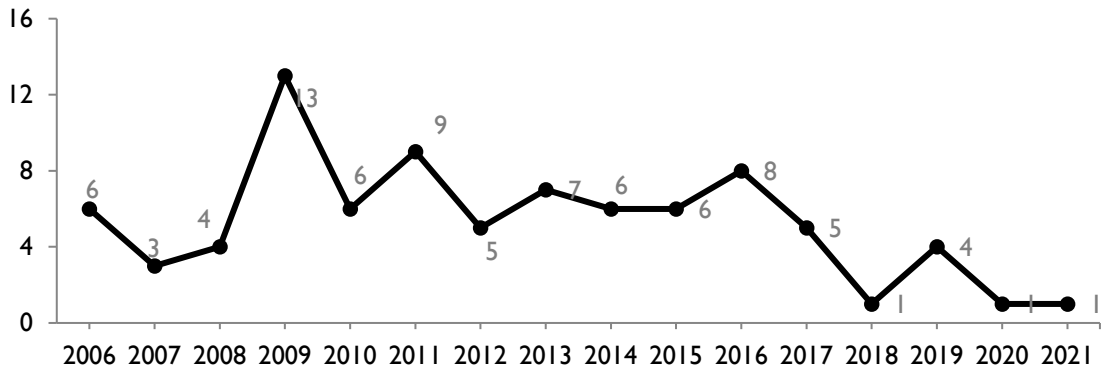
## Additional information

The port receives mostly ferry traffic. A few cruise ships per year, some of them anchor outside the port because they are too large to enter the port.

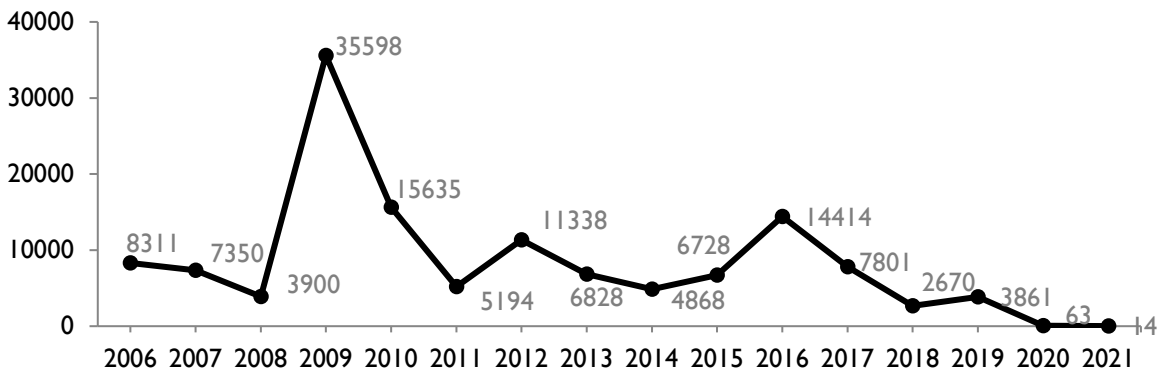
## 2. Passenger traffic trends in Helsingborg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

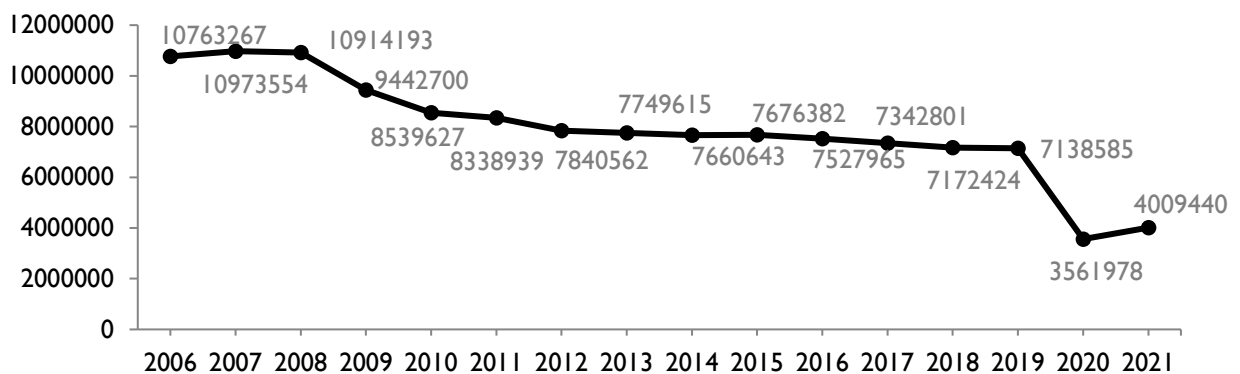
Cruise ships calls:



Cruise ships passengers:



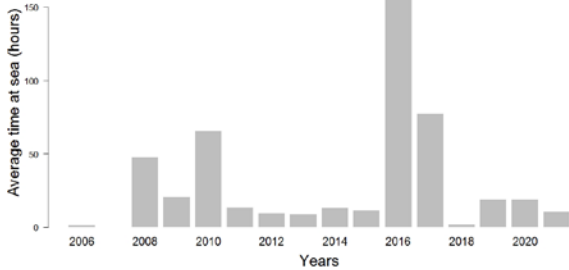
International cruise and ferry passengers:



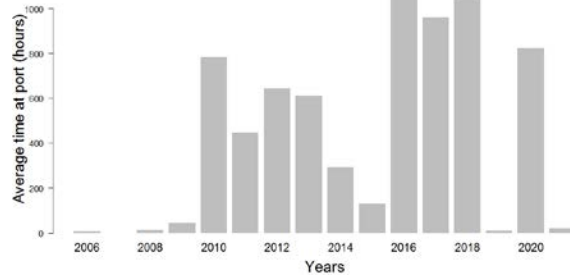
### 3. Cruise ship visits in Helsingborg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

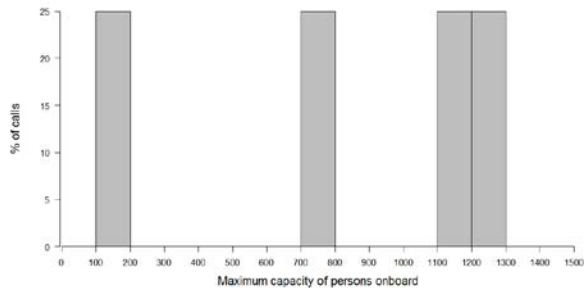
Cruise ships are normally not discharging sewage, due to only a couple of hours in port.

#### 3.4. Comments from cruise ships on port facilities (2014)

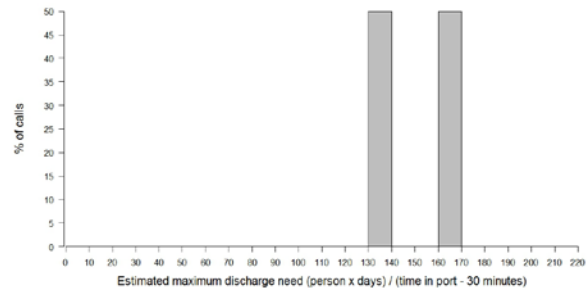
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew




#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Helsingör (Denmark)

UN LOCODE: DKHLS

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

No information available.

## Planned improvements

No information available.

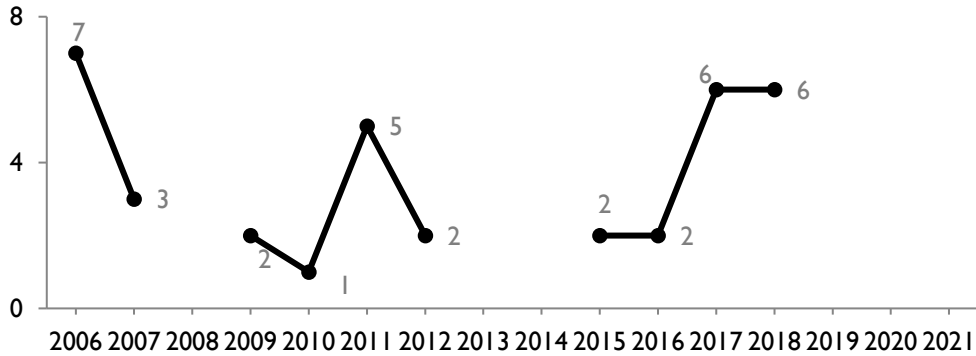
## Additional information

Helsingör is one of the eight ports listed as first priority ports in the 2010 HELCOM Roadmap for upgrading PRF for sewage in passenger ports of the Baltic Sea area.

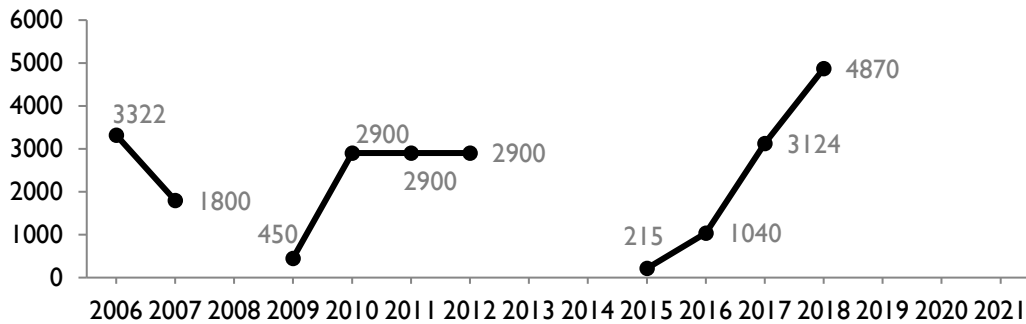
## 2. Passenger traffic trends in Helsingör

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

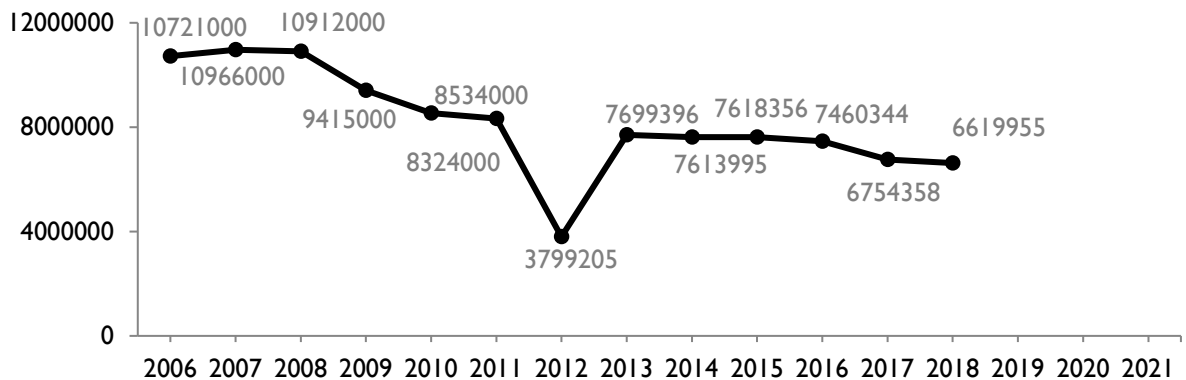
Cruise ships calls:



Cruise ships passengers:



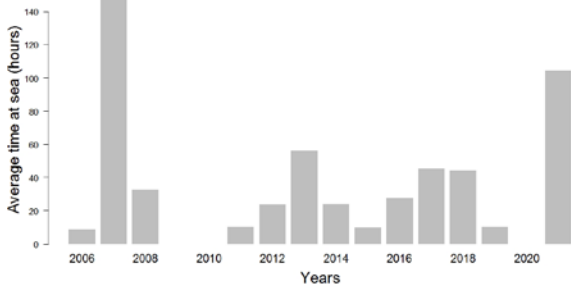
International passengers:



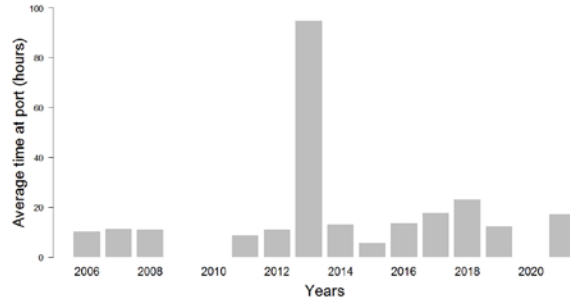
### 3. Cruise ship visits in Helsingör

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

Time at sea from previous port	43
Time spent at port during the call	7
Maximum number of persons onboard	510

Only 1 call was reported during the joint HELCOM-CLIA survey.

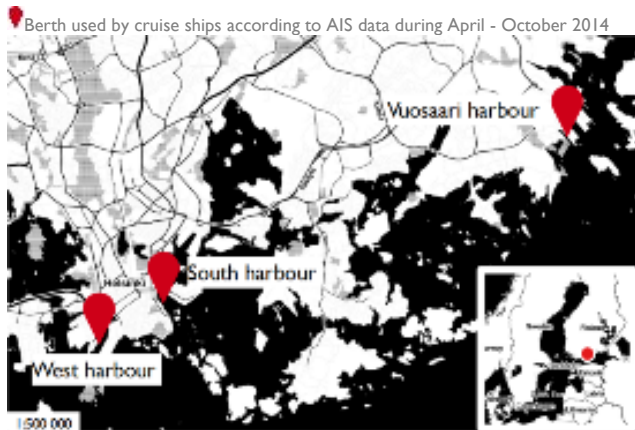
#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

Estimated theoretical maximum discharge need<sup>1</sup> 130,5

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Helsinki (Finland)

<http://www.portofhelsinki.fi/> UN LOCODE: FIHEL



## I. Sewage Port Reception Facilities

At all three ports, grey and black water is discharged from the vessels directly to the city waste water system. The ship service person of the port connects the hose at the appointed time. The vessel must use its own pump for discharging and the vessel must have the possibilities to flush the hoses after discharging. This service is free, and cruise ships that discharge sewage get discount for waste management fee.

**West Harbour:** 11 berths incl. ice breakers. Discharge points are located every 40-90m. Sewer pipes have been renovated recently. Capacity of the PRF: ~100 m<sup>3</sup>/h (possibility to double the capacity if two pipes are used simultaneously).

**South Harbour:** 12 berths incl. ice breakers. Discharge points are located every 40-60m. Sewer pipes have been renovated recently. Capacity of the PRF: 100 m<sup>3</sup>/h (possibility to double the capacity if two pipes are used simultaneously).

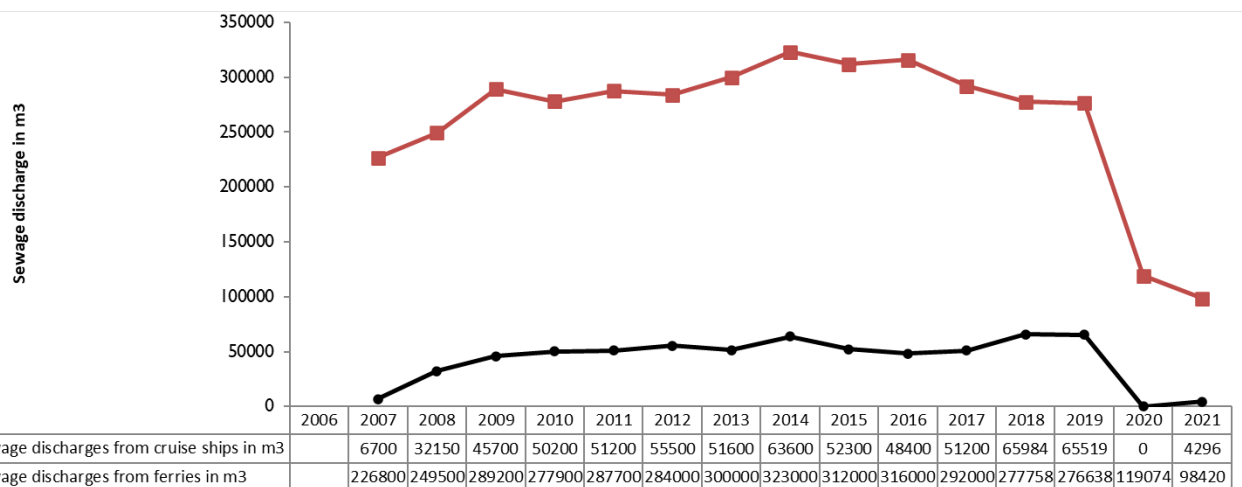
**Vuosaari cargo port:** 16 quays for ro-ro ships and 1500m of container pier. Waste water discharge points are every 40-60m. A pre-treatment facility for waste water has also been installed in this port area.

## Planned improvements

The Port of Helsinki will make alterations to some quays due to its development plan during the next 10 years. Every quay will still have fixed port reception facilities for sewage.

## Additional information

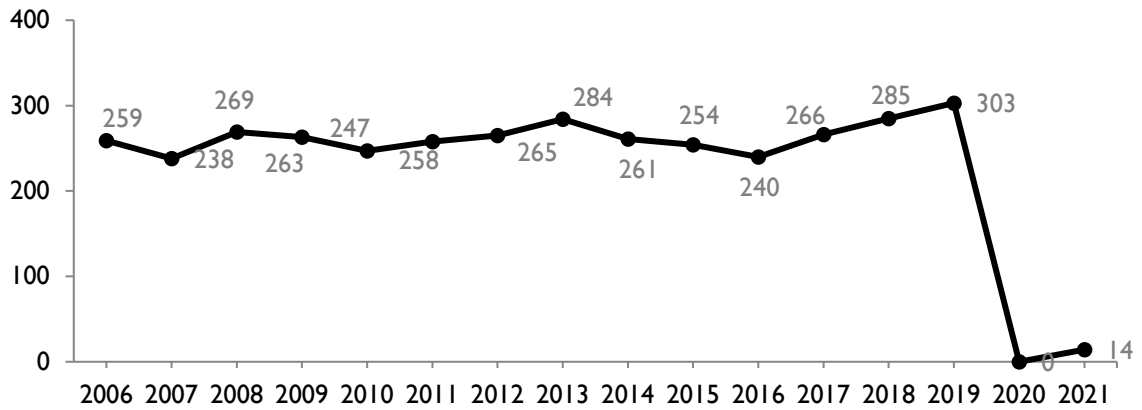
The first fixed sewage pipelines in South Harbour quays were installed in 1990, and during 1999–2009 the pipelines were assembled on all existing quays in South and West Harbours. During recent years, installations of PRF for sewage have been made when new quays have been built for cruise ships. The new Vuosaari cargo port was completed in the end of 2008 and it is equipped with sewage pipelines in all quays and piers. Helsinki was listed as having adequate PRF for sewage in the 2010 HELCOM Roadmap for upgrading PRF for sewage in passenger ports of the Baltic Sea area.



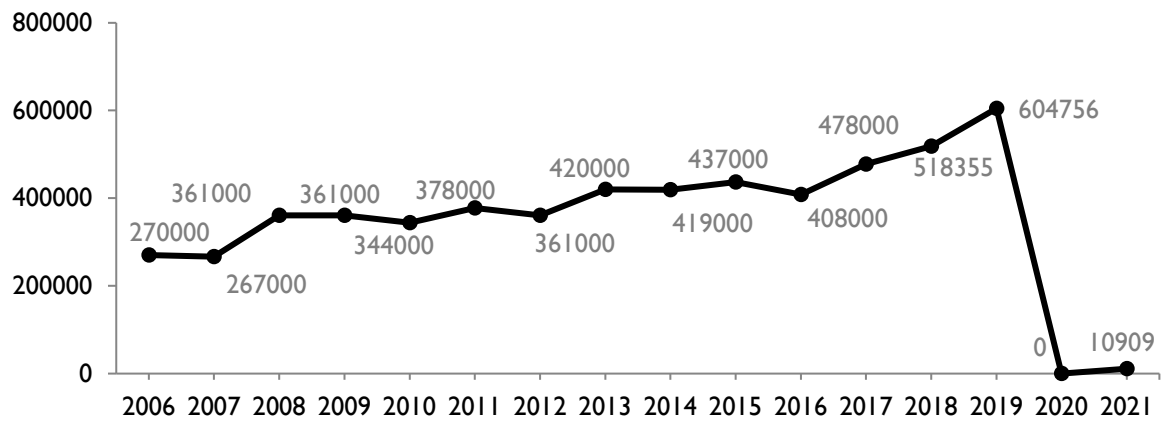
## 2. Passenger traffic trends in Helsinki

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organisations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

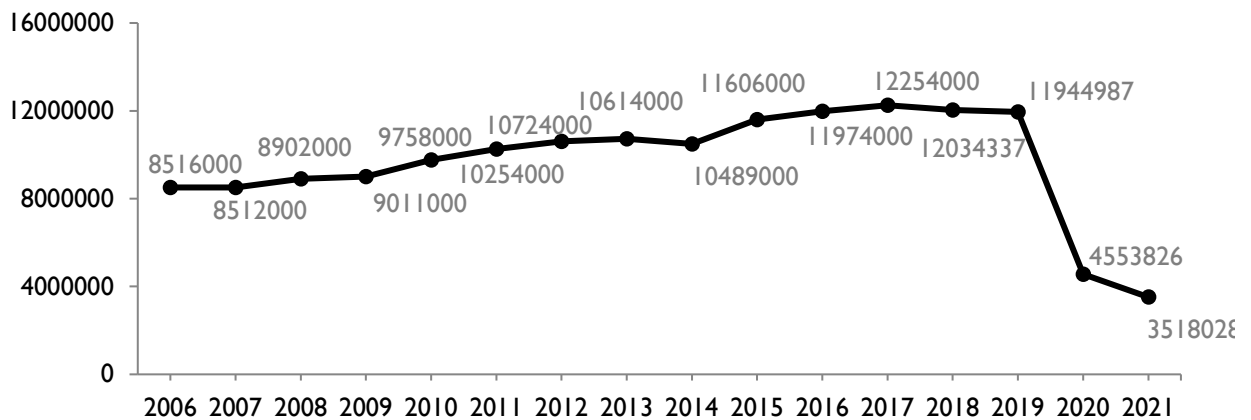
Cruise ships calls:



Cruise ships passengers:



International cruise and ferry passengers:

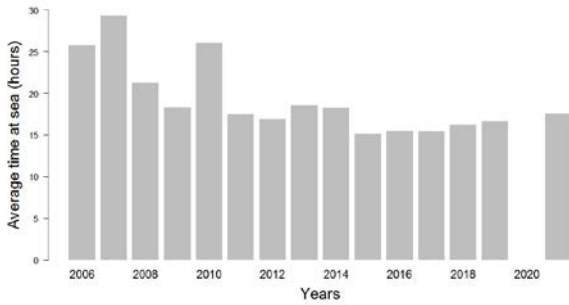




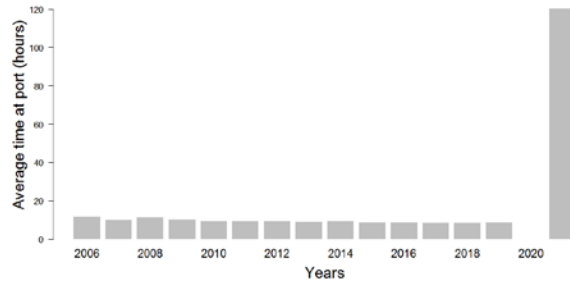
### 3. Cruise ship visits in Helsinki

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

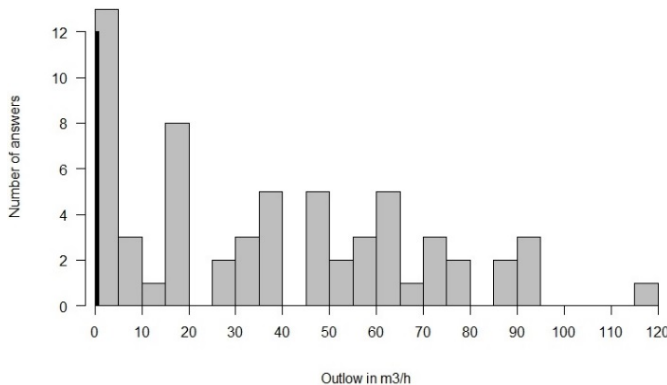


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

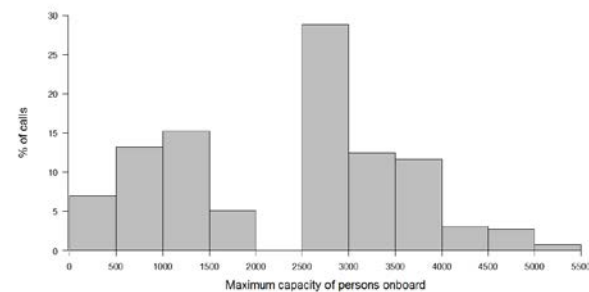


#### 3.4. Comments from cruise ships on port facilities (2014)

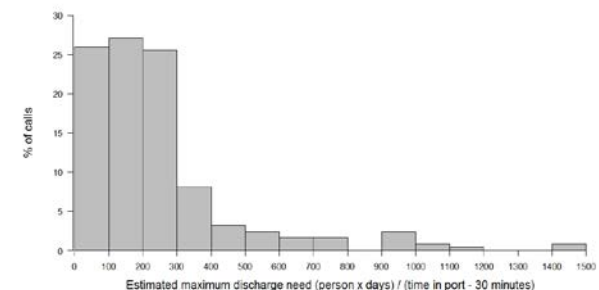
West Harbour: “Due to the size of the hose provided to deliver sewage waters, the back pressure generated reduced the discharge flow rate.”

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew




#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Kaliningrad (Russia)

UN LOCODE: RUKGD

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

- There are 3 berths in the port of Kaliningrad (54°41'N; 20°10'E) which have mobile sewage PRF.
- Two companies-service providers have mobile PRF for reception of sewage from ships, namely specialized vessels. Maximum quantity – 18 and 50 m<sup>3</sup> with discharge rate 50 m<sup>3</sup>/h.
- Fee structure- no-special-fee.
- A minimum 24 hours prior notice is required.

## Planned improvements

Passenger ships have not called to the port since 2018 due to reconstruction and renovation of PRF.

## Additional information

-

## 2. Passenger traffic trends in Kaliningrad

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

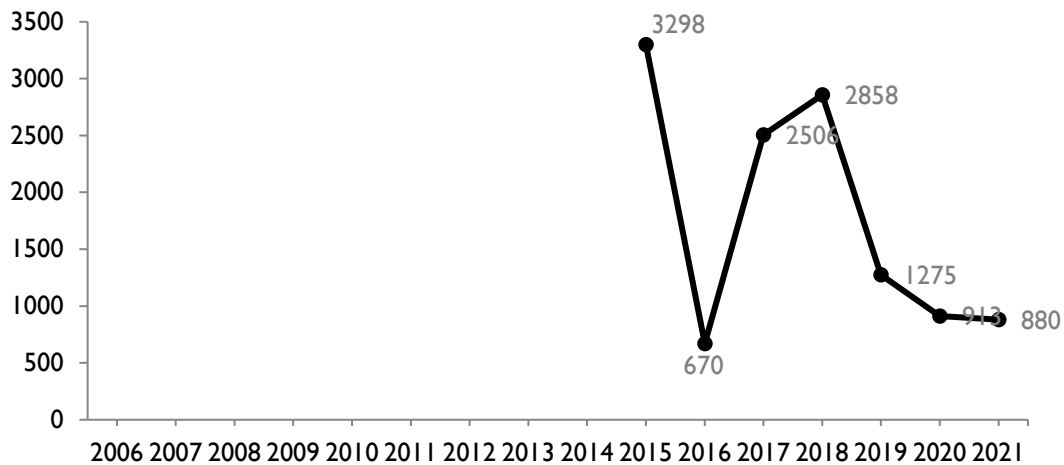
Cruise ships calls:



Cruise ships passengers:



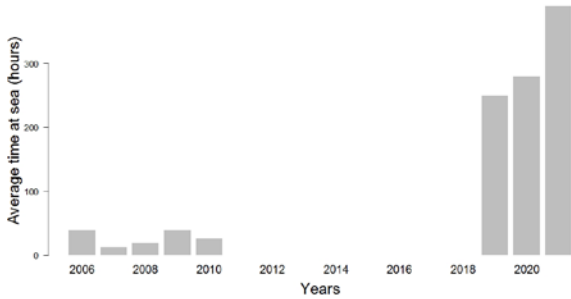
International cruise and ferry passengers:



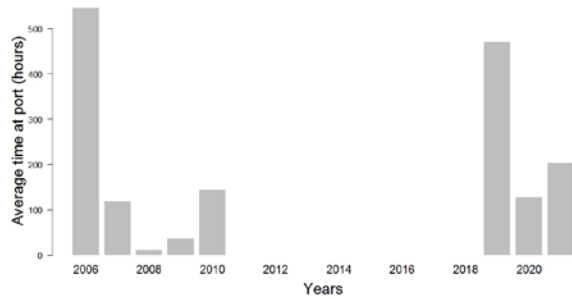
### 3. Cruise ship visits in Kaliningrad

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

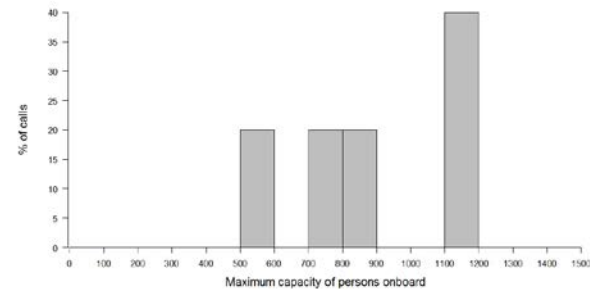
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

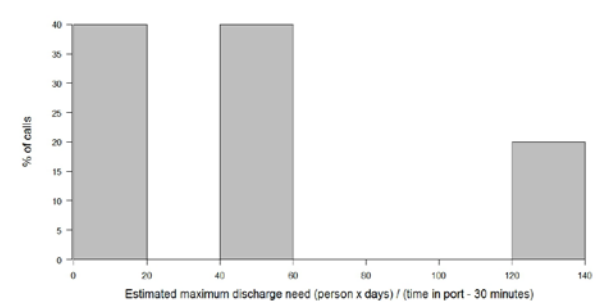
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Kalmar (Sweden)

UN LOCODE: SEKLR

Location of the port of Kalmar.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

There are not fixed receptions, it is possible to leave on demand by truck on all berths, it comes with a cost. -

## Planned improvements

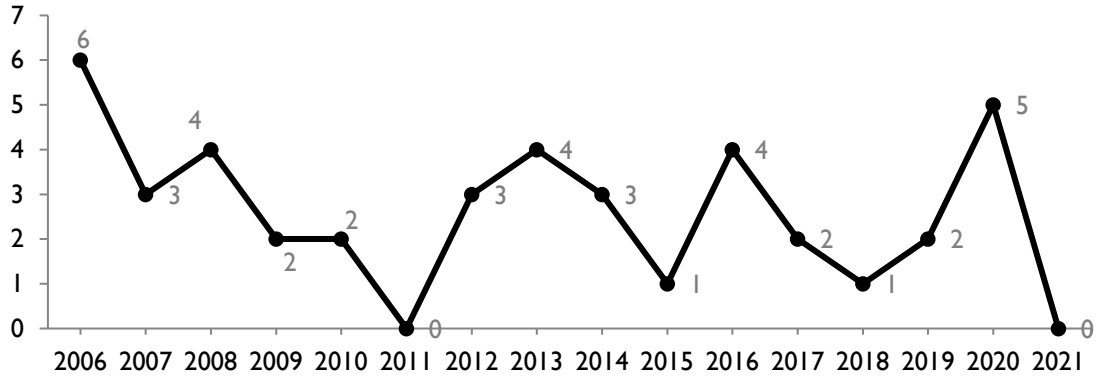
## Additional information

No cruise vessel has delivered any sewage in the port of Kalmar. Also, there are no statistics over the number of passengers the port has had the last couple of years.

## 2. Passenger traffic trends in Kalmar

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

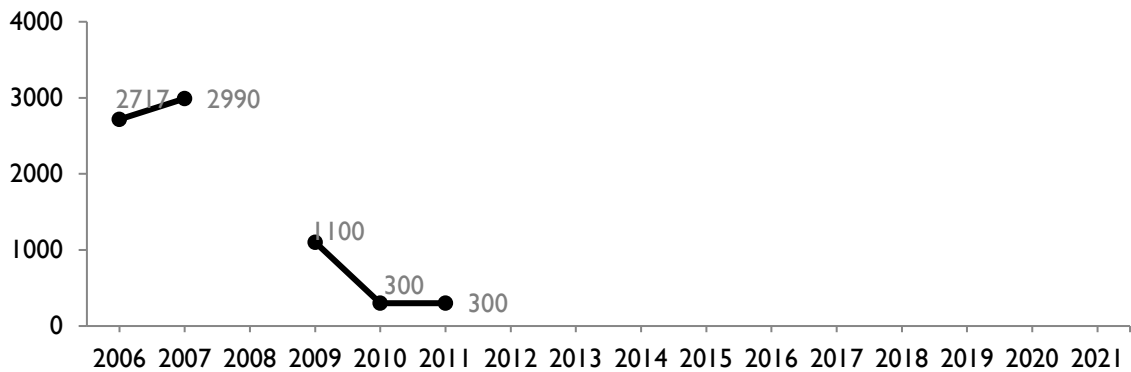
Cruise ships calls:



Cruise ships passengers:



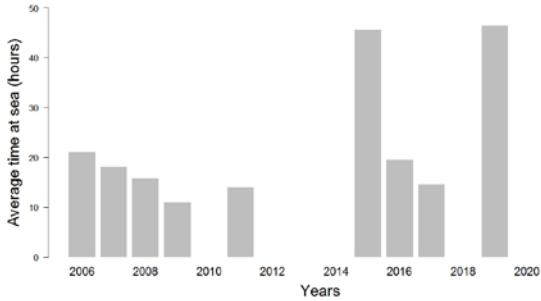
International passengers:



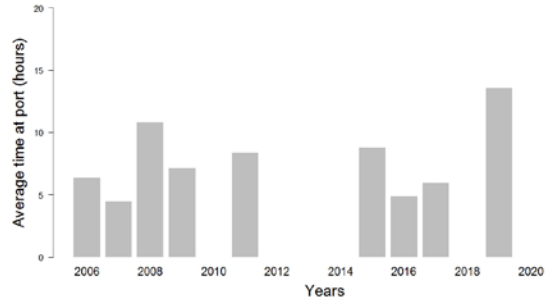
### 3. Cruise ship visits in Kalmar

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Kalundborg (Denmark)

<http://www.cruisekalundborg.dk/> UN LOCODE: DKKAL

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

No information available.

## Planned improvements

No information available.

## Additional information

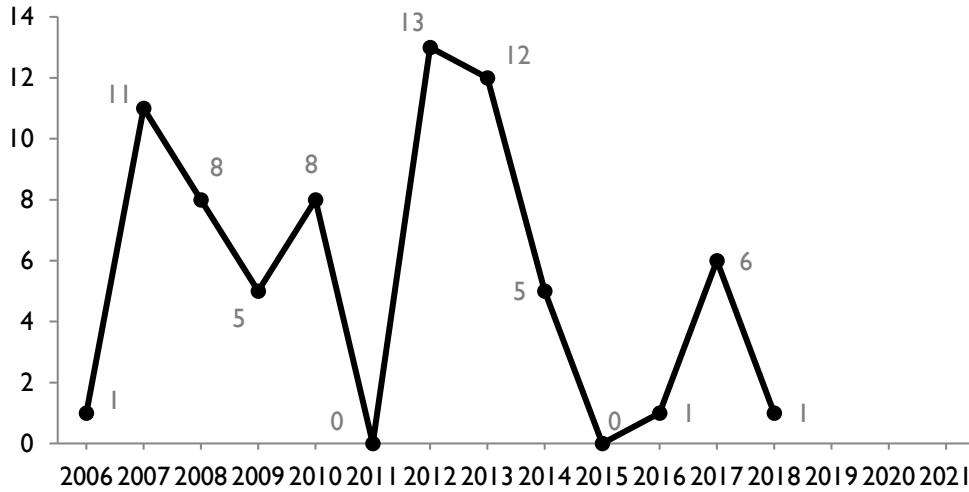
No information available.



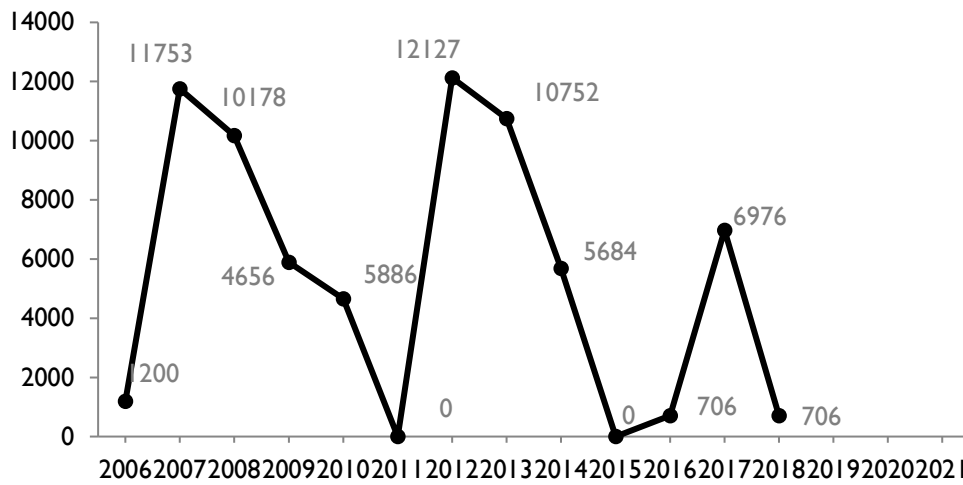
## 2. Passenger traffic trends in Kalundborg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

Cruise ships calls:



Cruise ships passengers:



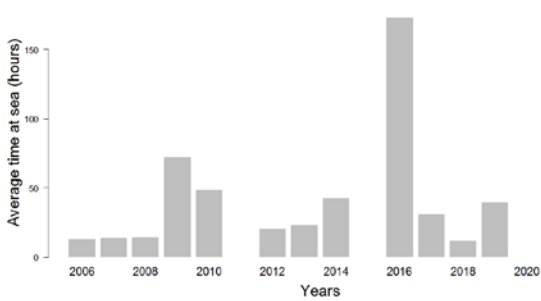
International cruise and ferry passengers:

No information available.

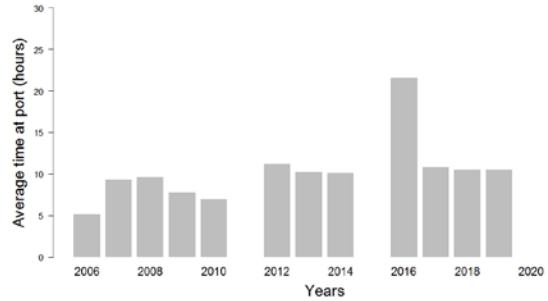
### 3. Cruise ship visits in Kalundborg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

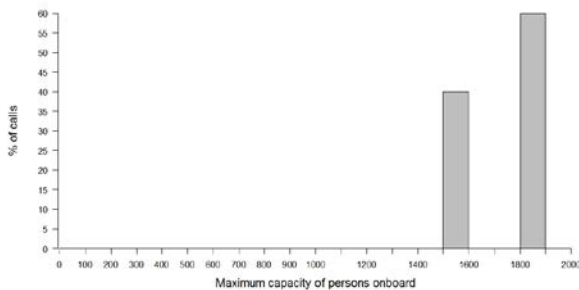
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

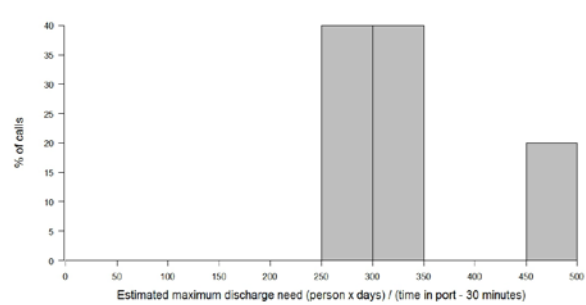
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

## Kapellskär (Sweden)

UN LOCODE: SEKPS



### I. Sewage Port Reception Facilities (information from 2019)

The Port of Kapellskär has recently been modernized and rebuilt. In connection with this, the port has also built fixed links for sewage. The rebuilding was finalized in the beginning of 2017.

The disposal of black- and greywater in port is included in the port fee. It is thus a general fee, based on the number of passengers, regardless of if the vessel offloads black- and grey water or not.

All the ferries have exemptions from the delivery of sewage given by the Swedish Transport Agency.

### Planned improvements

-

### Additional information

During 2008-2009 the Port built and funded a sewage treatment plant. The treatment plant was sold to the municipality of Norrtälje 2010.

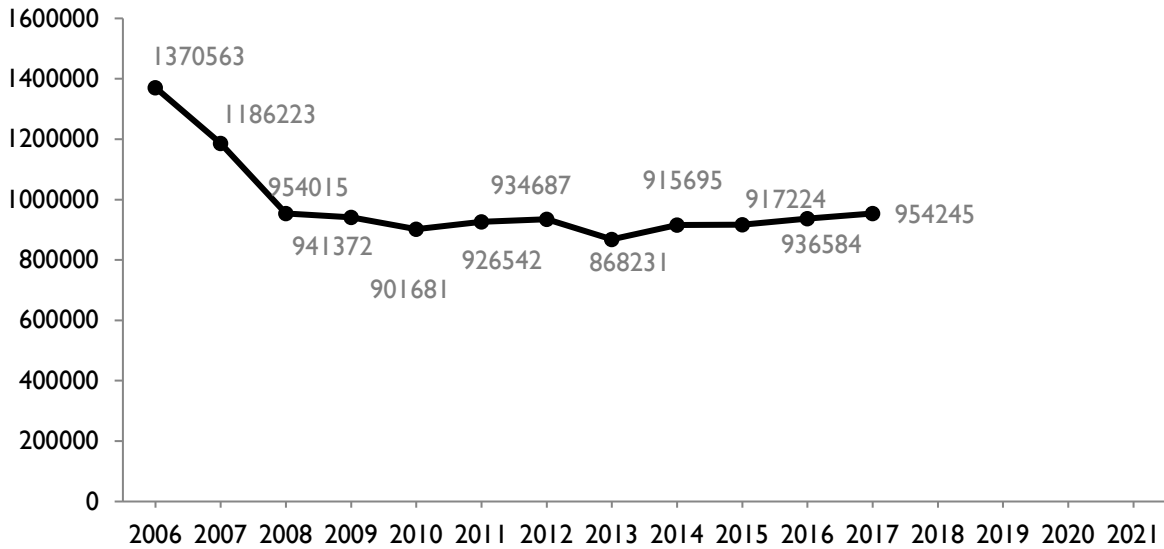
## 2. Passenger traffic trends in Port of Kapellskär

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication “Baltic Port List” and the Nordic Council of Ministers.

Cruise ships calls: no calls.

Cruise ships passengers: no calls.

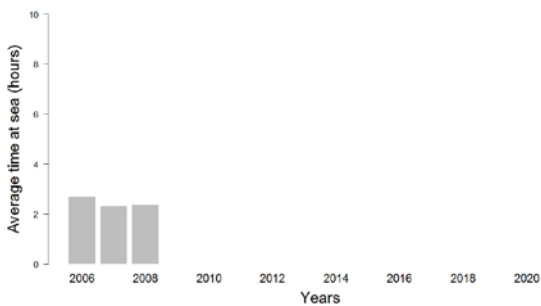
International passengers:



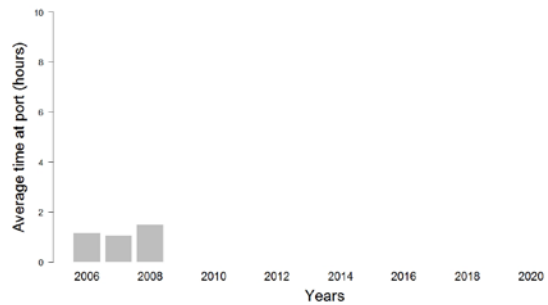
## 3. Cruise ship visits in Kapellskär

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

### 3.1. Time at sea from previous port



### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

### 3.3. Sewage discharges

No information available.

### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

### 3.6. Estimated theoretical max. discharge need <sup>1</sup>


No information available.

---

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Karlskrona (Sweden)

<http://www.karlskrona.se/> UN LOCODE: SEKAA

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

Fixed reception points for black and grey water are available at the ferry terminal at KBP in Karlskrona. The capacity is 45 liters/sec. The sewage is transferred to the municipality treatment plant in Karlskrona.

The disposal of black- and greywater in port is included in the port fee.

All the ferries have exemptions from the delivery of sewage given by the Swedish Transport Agency.

## Planned improvements

Nothing planned now.

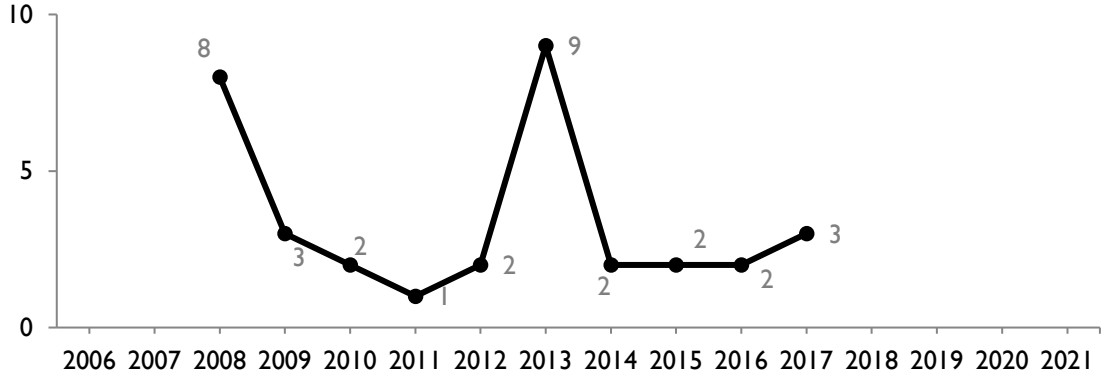
## Additional information

Karlskrona port can receive sewage if requested, however, they have not received any sewage.

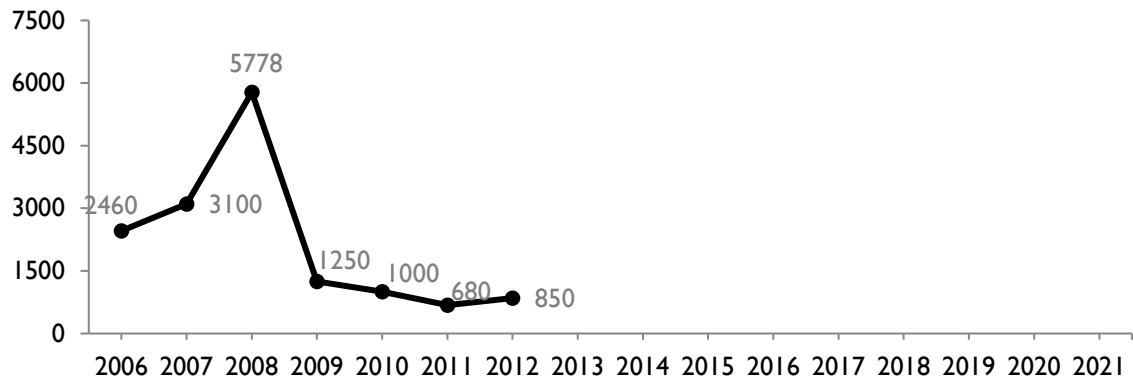
## 2. Passenger traffic trends in Karlskrona

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

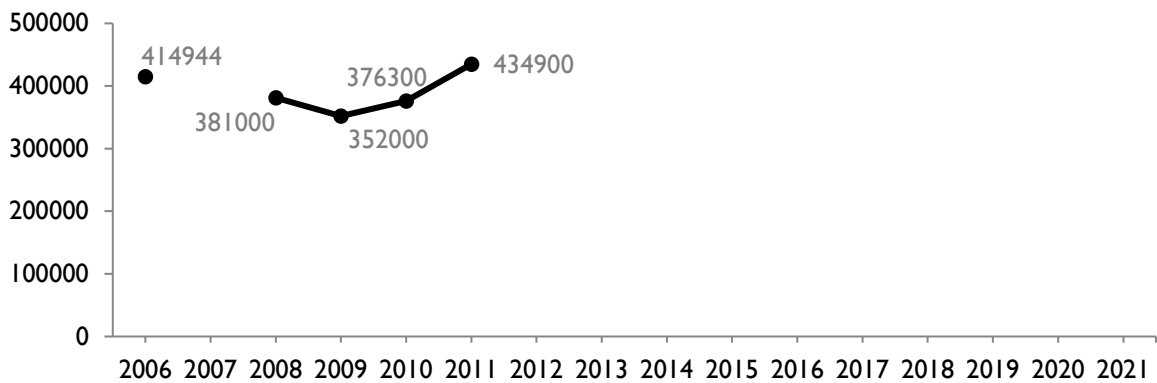
Cruise ships calls:



Cruise ships passengers:



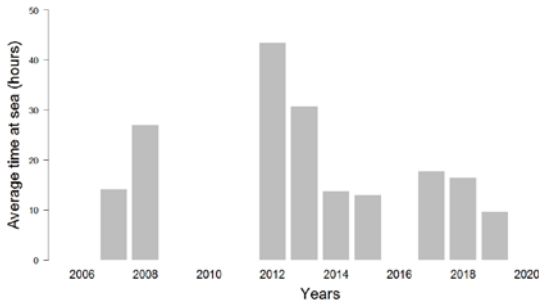
International cruise and ferry passengers:



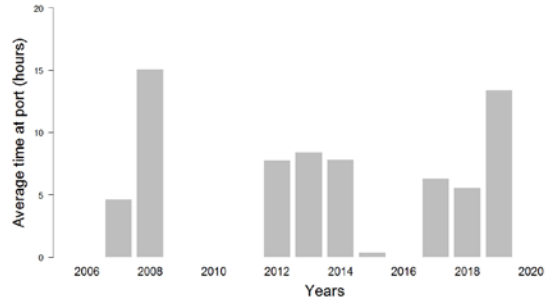
### 3. Cruise ship visits in Karlskrona

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

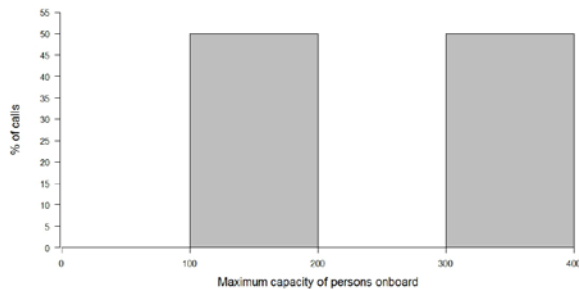
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

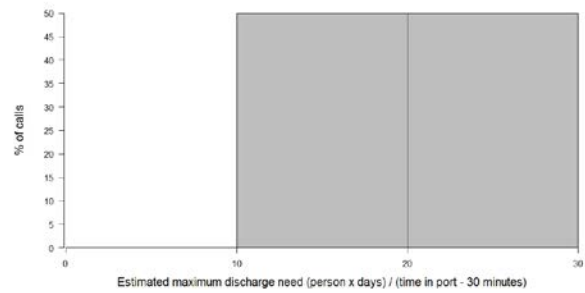
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



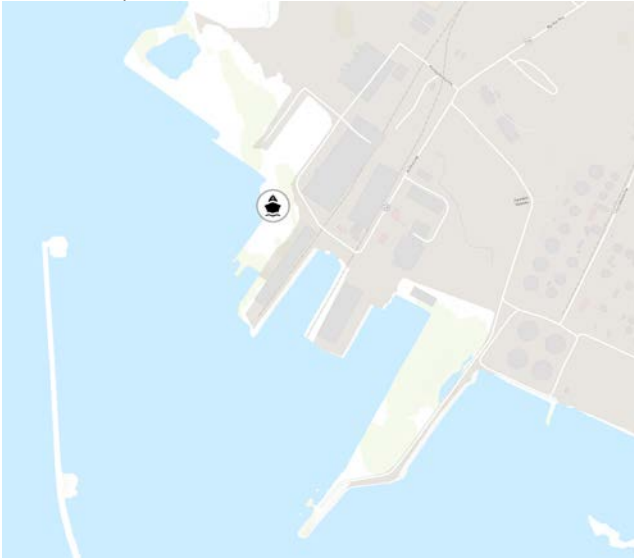
<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.



# Kemi (Finland)

<http://www.keminsatama.fi/en/home.html> UN LOCODE: FIKEM 65° 40'N 24° 31'E

Location of the port of Kemi.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

- Number of berths 11. All berths have the possibility to leave sewage but berths 8-11 have PRF availability.
- 17m<sup>3</sup>/h capacity of PRF.
- PRF available upon request, order from port security no later than 24h before arrival.
- Only sewage no oil or other similar residues allowed
- Fee structure - the fee depends on the circumstances
- There is not any important information regarding the operability of the PRF.
- In 2021, there were 140 m<sup>3</sup> sewage discharges from cruise ships.

## Planned improvements

No planned improvements.

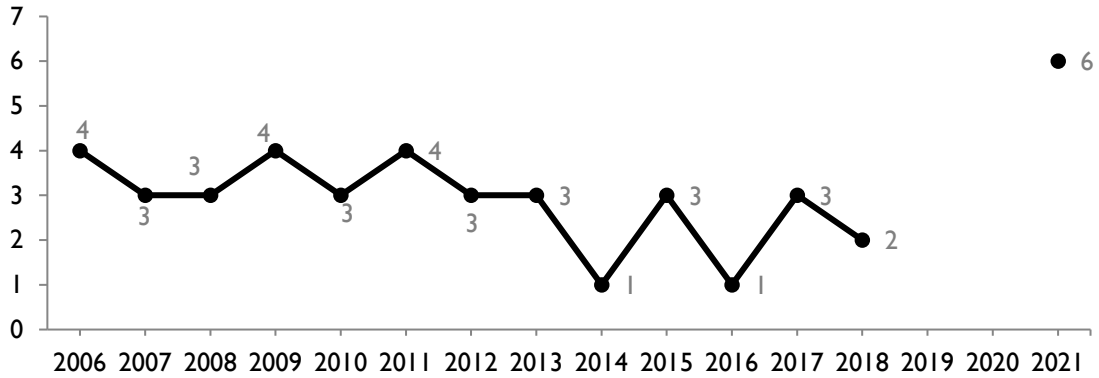
## Additional information

For more information, please contact Port of Kemi Ltd.

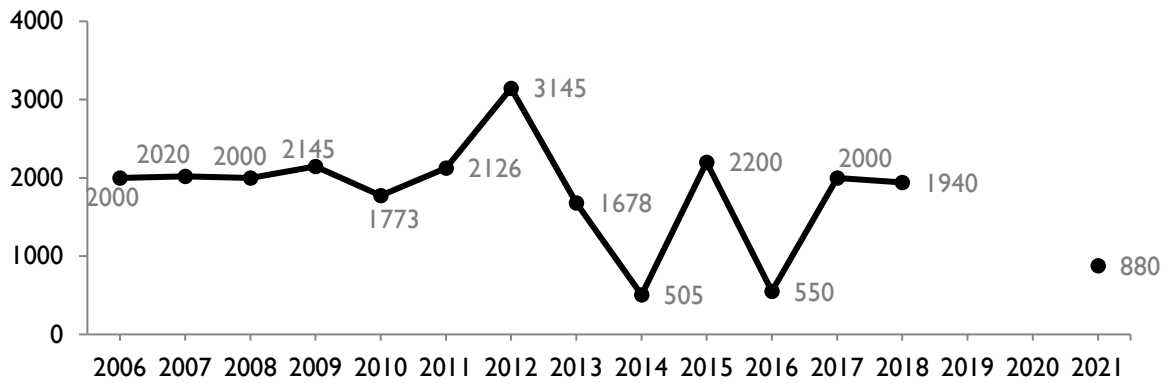
## 2. Passenger traffic trends in Kemi

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

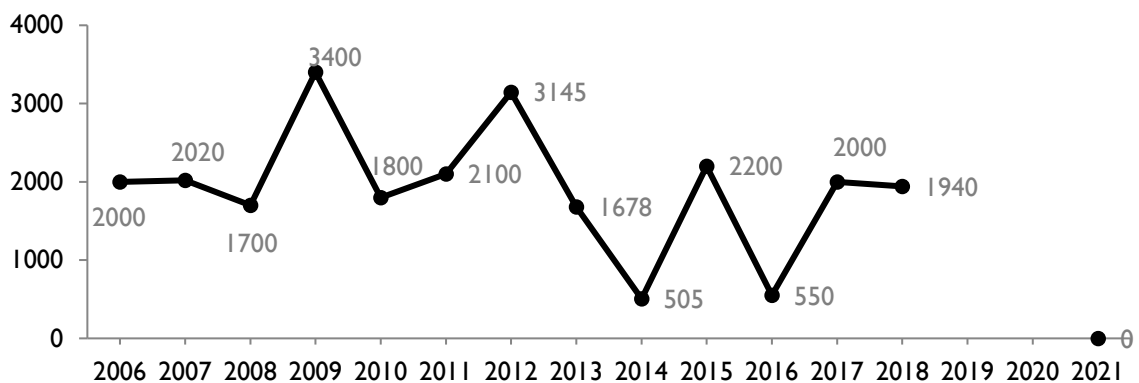
Cruise ships calls:



Cruise ships passengers:



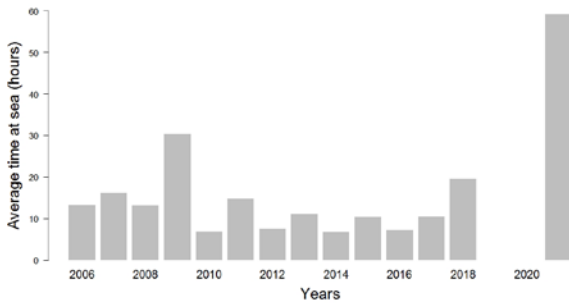
International cruise and ferry passengers:



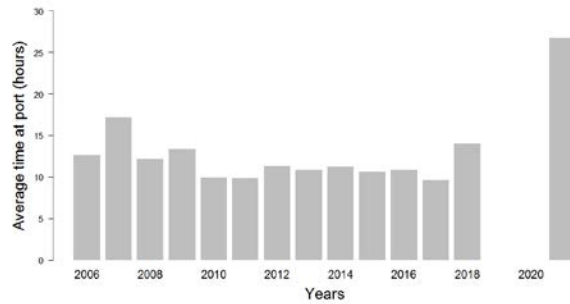
### 3. Cruise ship visits in Kemi

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

Time at sea from previous port	7
Time spent at port during the call	11
Maximum number of persons onboard	916

Only 1 call was reported during the joint HELCOM-CLIA survey.

#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

Estimated theoretical maximum discharge need<sup>1</sup> 24,3

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Kiel (Germany)

<http://www.portofkiel.com/> UN LOCODE: DEKEL

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

At the following berths in the Port of Kiel, PRF facilities are available:

1. Schwedenkai I, 24103 Kiel:
  - Fixed PRF facility
  - 25 m<sup>3</sup>/h
2. Ostseekai I, 24103 Kiel:
  - Fixed PRF facility for cruise ships
  - One ship at berth 27 or 28: 300 m<sup>3</sup>/h per ship, one ship at berth at berth 27 and 28: 150 m<sup>3</sup>/h per ship
3. Norwegenkai I, 24143 Kiel:
  - Fixed PRF facility
  - 25 m<sup>3</sup>/h
4. Ostuferhafen, 24149 Kiel:
  - Fixed PRF facility
  - 40 m<sup>3</sup>/h

The following thresholds need to be adhered to when discharging into the PRF facility:

pH value: 6,5 -10  
 Temperature: 35°C  
 Sulfide: 2mg/l  
 Sulfate: 400 mg/l  
 Nitrite , 10 mg/l  
 Ammonia: 200 mg/l  
 AOX : 1 mg/l  
 Mercury: 0,05 mg/l  
 Hydrocarbon: 20 mg/l  
 Least volant lipophilic substances: 250 mg/l

When wanting to use the PRF facilities, the ship itself, the ship's agent or the shipping company needs to request the use officially with the Harbor Masters Office 24 hours in advance using the NSW Portal.

The fee for using PRF facilities in the Port of Kiel can be found in the Port of Kiel tariff using the link: <https://www.portofkiel.com/tarife-ab.html>

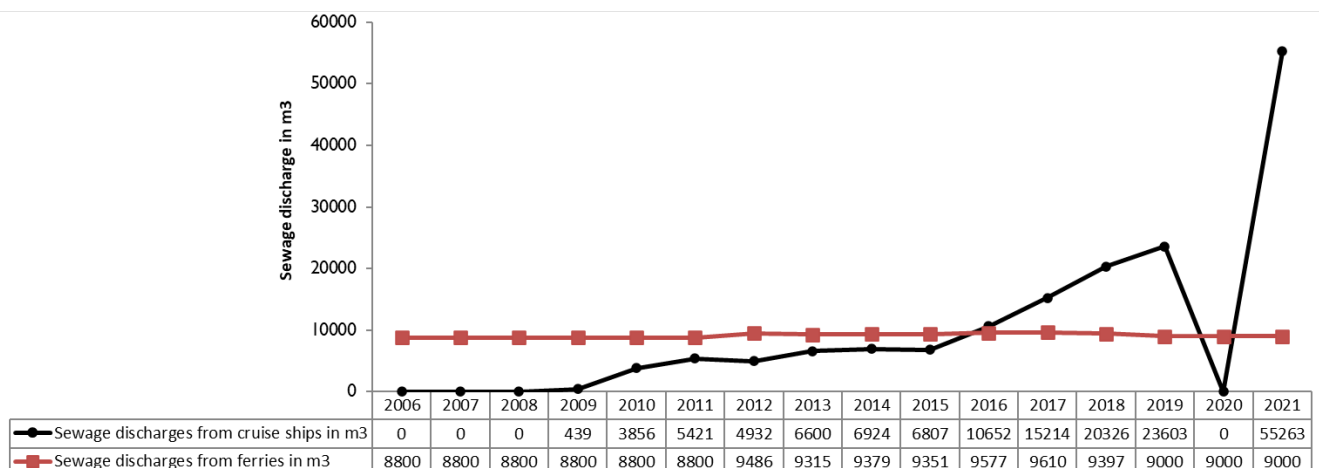
## Planned improvements

N/A

## Additional information

Additional information in regard to PRF facilities can be found on the Port of Kiel website: <https://www.portofkiel.com/schiffsabwaesser.html>

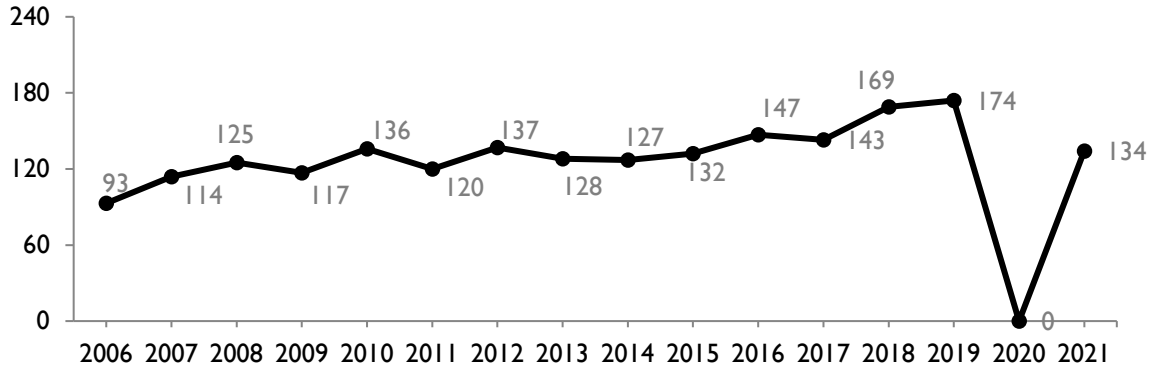
Further detail may also be found in Port of Kiel's waste management plan: <https://www.portofkiel.com/tarife-ab.html> (Port of Kiel Abfallbewirtschaftungsplan 2021-2026).



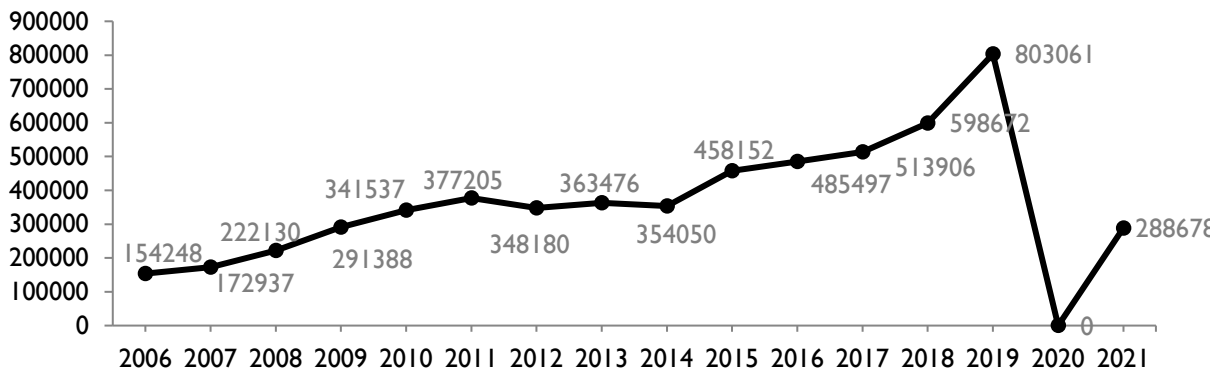
## 2. Passenger traffic trends in Kiel

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

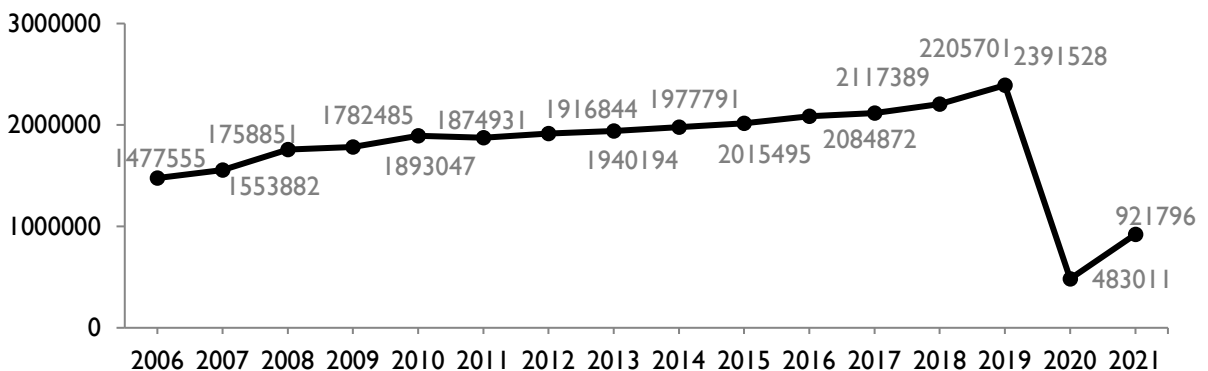
Cruise ships calls:



Cruise ships passengers:



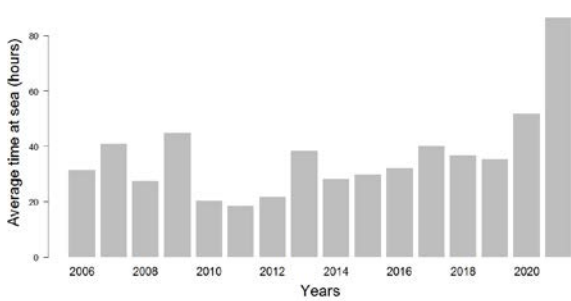
International cruise and ferry passengers:



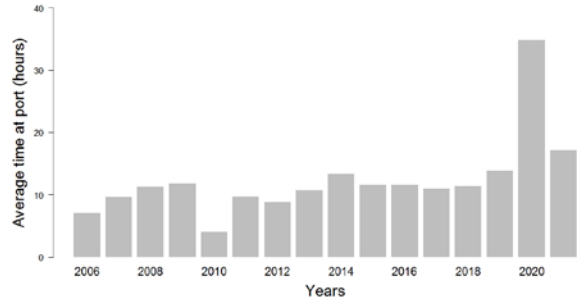
### 3. Cruise ship visits in Kiel

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

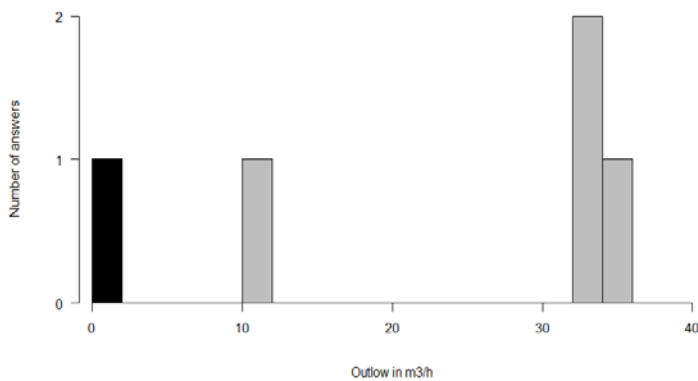


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

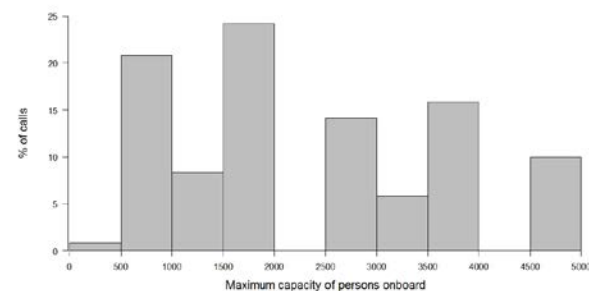


#### 3.4. Comments from cruise ships on port facilities (2014)

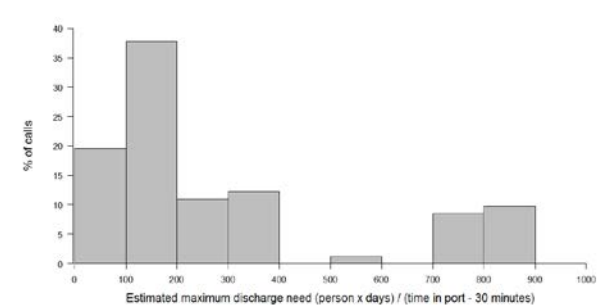
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>




<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Klaipeda (Lithuania)

<http://www.portofklaipeda.lt/> UN LOCODE: LTKLJ

All berths are available for ships to discharge sewage by barge.

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

Port Administration has contract with operator which collects sewage from ships by trucks and barges.

No special fee for the use of the facilities. Sewage discharge is included in the sanitary dues.

## Planned improvements

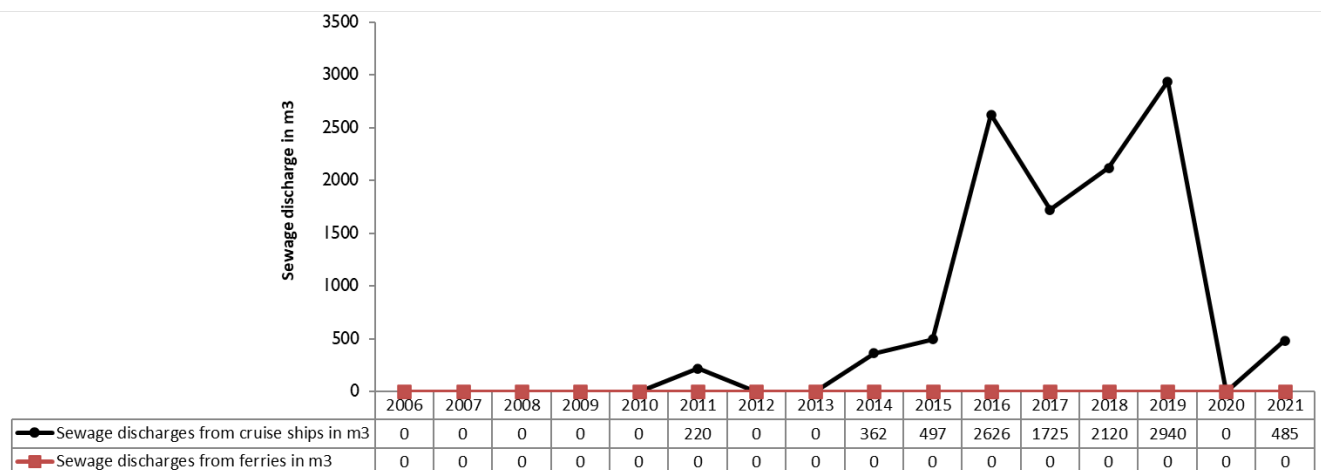
Current waste reception facilities are sufficient to ensure arriving ship waste reception needs.

Currently sewage reception facilities at the Cruise Ship Terminal and the Fishing Marina are being designed.

A new direct sewage reception facility will be built in 2022 at Cruise Ship Terminal and the sewage will be directly discharged to the municipal sewage system.

## Additional information

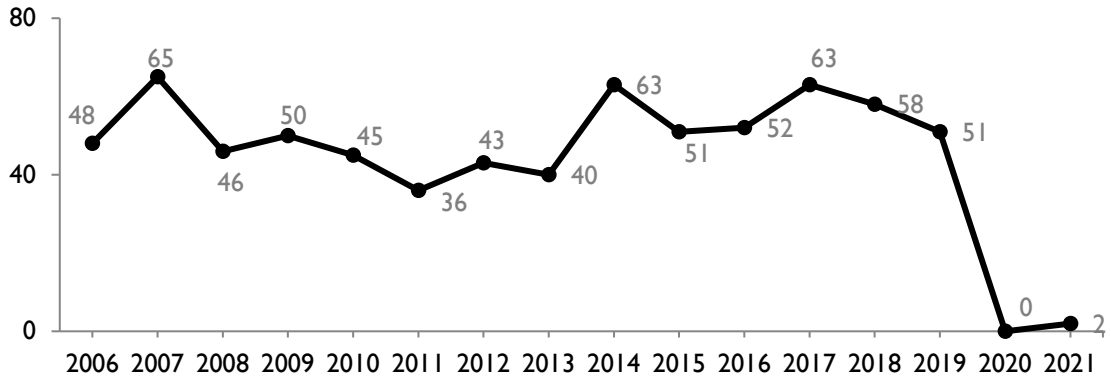
-



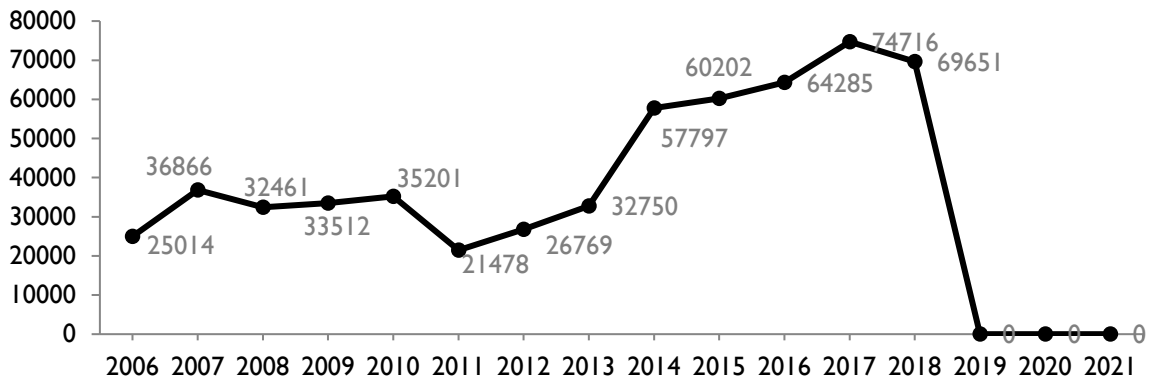
## 2. Passenger traffic trends in Klaipeda

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

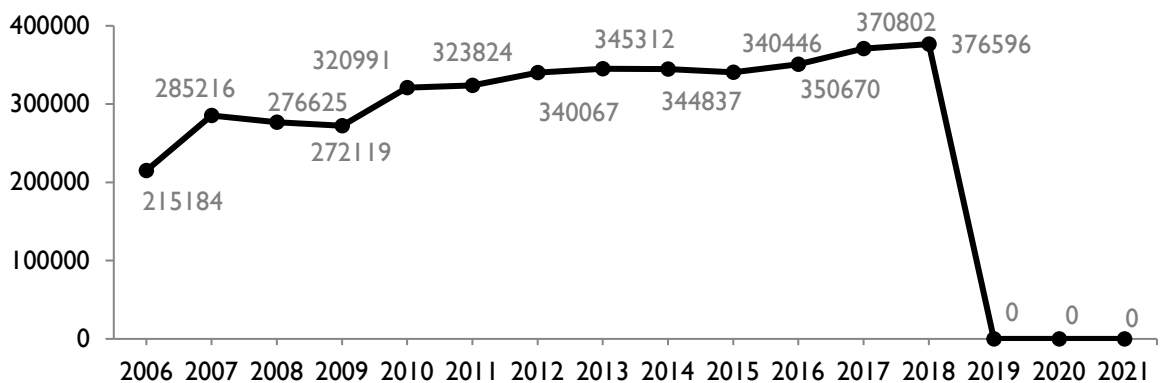
Cruise ships calls:



Cruise ships passengers:



International cruise and ferry passengers:

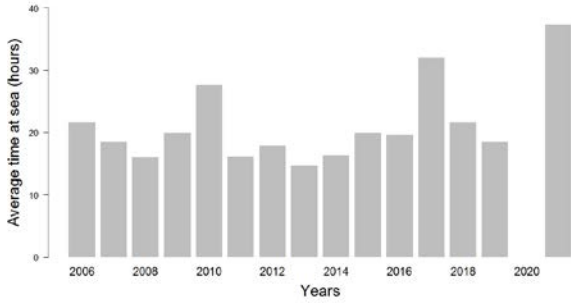




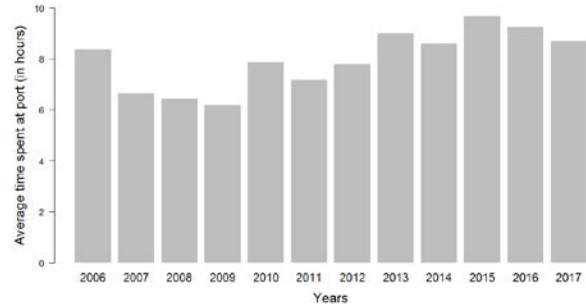
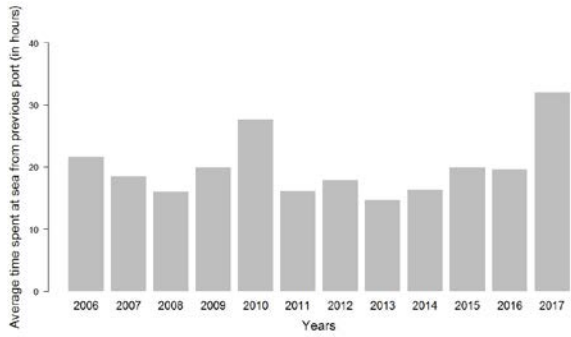
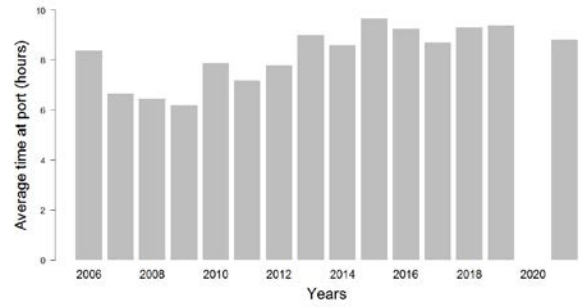
### 3. Cruise ship visits in Klaipeda

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

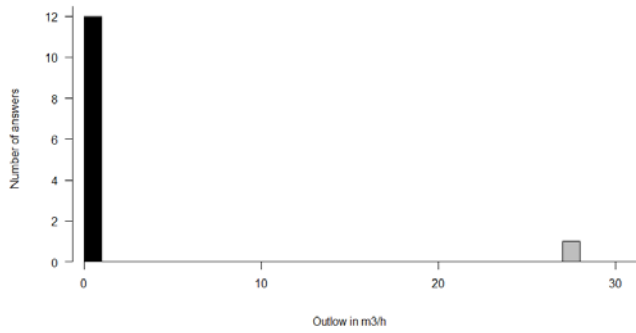


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

### 3.3. Sewage discharges

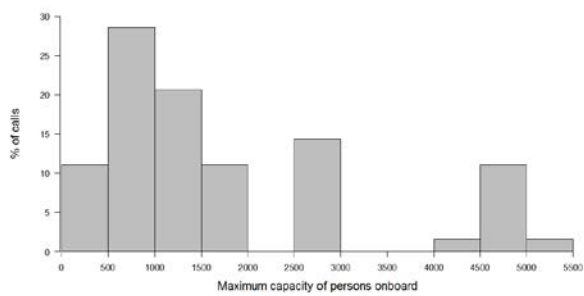


### 3.4. Comments from cruise ships on port facilities (2014)

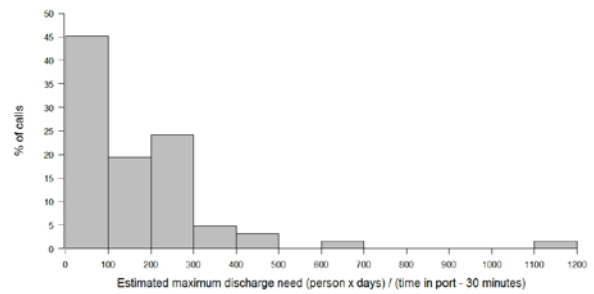
No information available.

### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Liepaja (Latvia)

<http://www.liepaja-sez.lv/en> UN LOCODE: LVLPX

## I. Sewage Port Reception Facilities (information from 2019)

The quays are served by mobile reception facilities – 3 tank trucks with capacity 30m<sup>3</sup> each and 1 barge with max capacity 250 m<sup>3</sup>.

No direct discharge to municipal sewage system available.

Sanitary fee charged from each ship includes delivery of sewage from passenger ships.

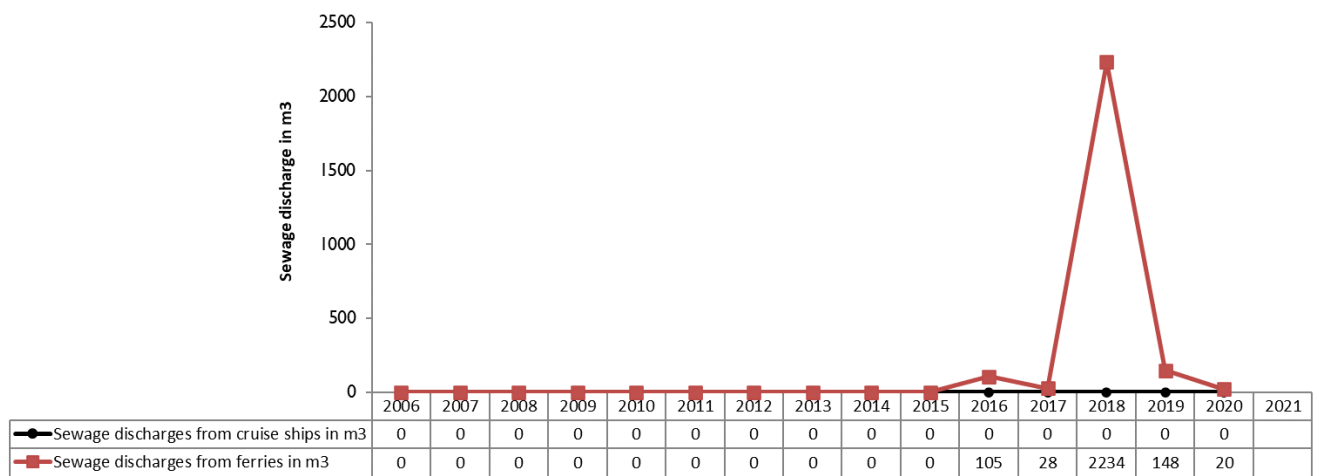
105 m<sup>3</sup> from ferries were discharged at port in 2016.

## Planned improvements

No plans for year of 2017.

## Additional information

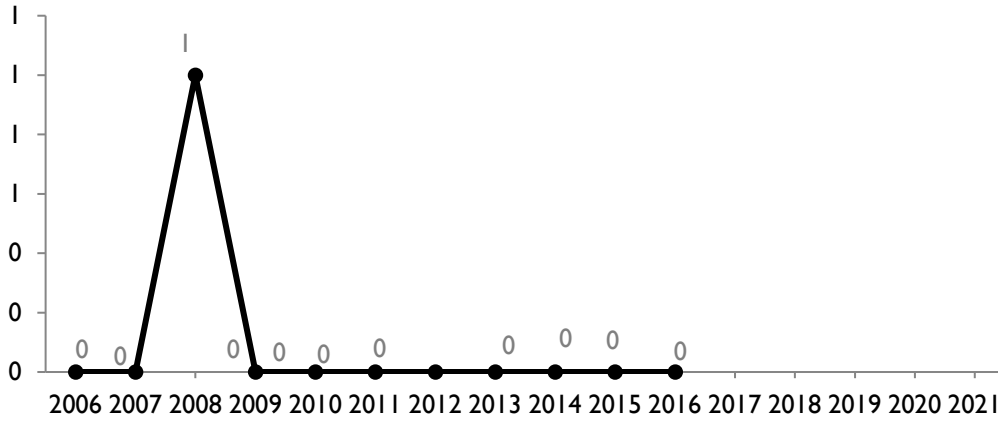
No information available.



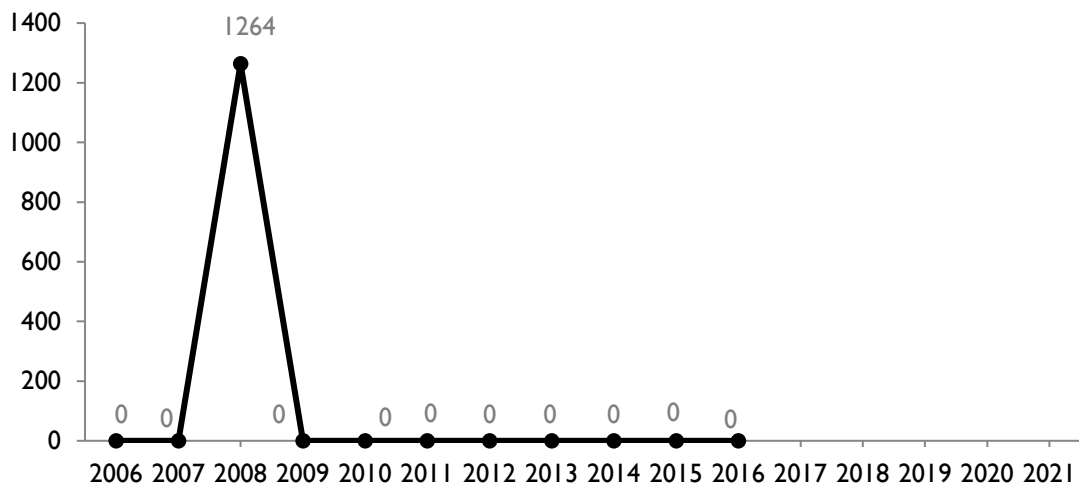
## 2. Passenger traffic trends in Liepaja

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

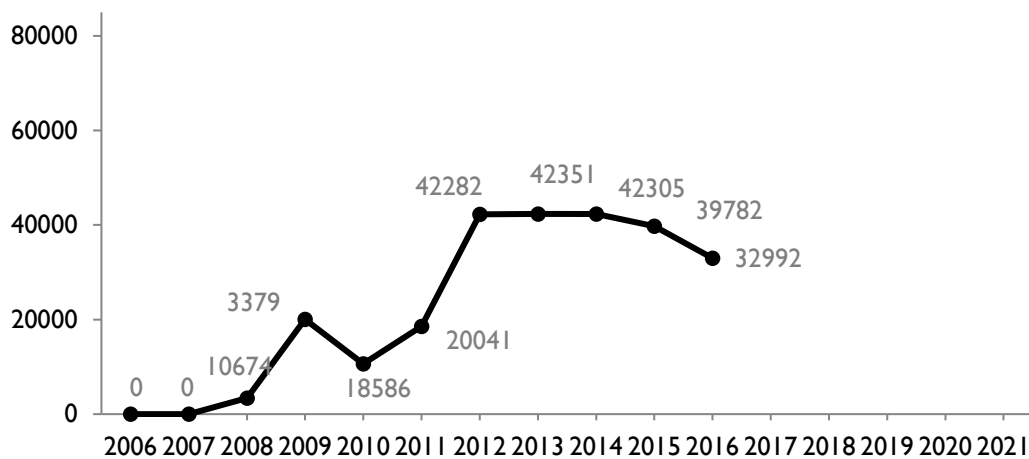
Cruise ships calls:



Cruise ships passengers:



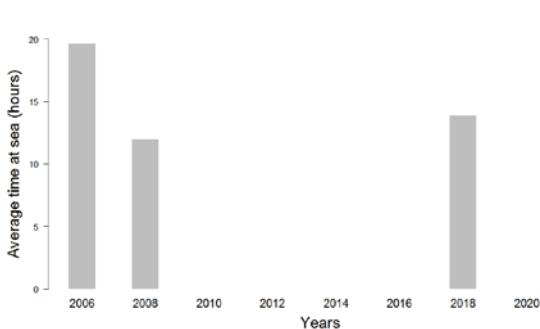
International passengers:



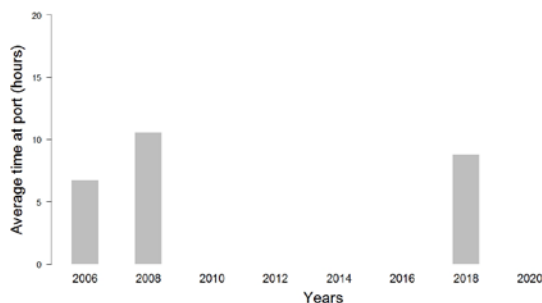
### 3. Cruise ship visits in Liepaja

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.


#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Luleå (Sweden)

UN LOCODE: SELLA

Location of the port of Luleå.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

Port of Luleå can receive cruise ships in both summer and winter at Svartön Quay. And Södra Hamn during summer.

Svartön Quay is adapted and open to cruise ships up to 220 m in length, 30 m in beam and with a maximum draught of 10.70 m (water depth 11.60 m). Special examination takes place for vessels exceeding any of these dimensions.

Södra hamn is adapted and open for cruise ships up to 180 m in length, 30 m in beam and with a maximum draught of 7.0 m (water depth 8.0 m). Special examination takes place for vessels exceeding any of these dimensions.

Liquid waste is collected by tanker. Maximum discharge rate is 5-10 m<sup>3</sup>/hr. Note that there is limited capacity to receive septic waste, 60 tonnes/day. If the need is greater, the port needs to be notified well in advance.

In 2021, there were 64 m<sup>3</sup> sewage discharges from cruise ships.

## Planned improvements

No changes in 2021

## Additional information

-

## 2. Passenger traffic trends in Luleå

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

Cruise ships calls:



Cruise ships passengers:



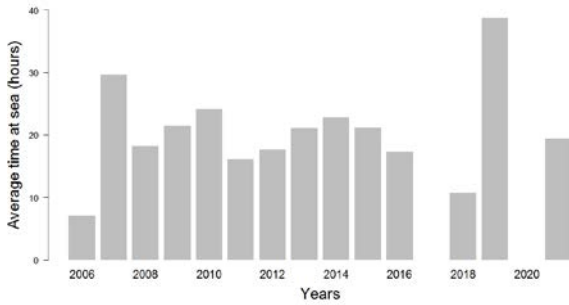
International passengers:

No information available.

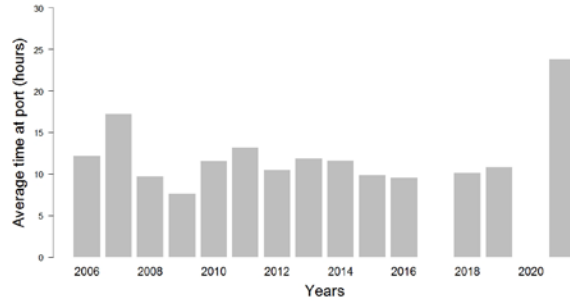
### 3. Cruise ship visits in Luleå

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

Time at sea from previous port 24

Time spent at port during the call 12

Maximum number of persons onboard 916

Only 1 call was reported during the joint HELCOM-CLIA survey.

#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

Estimated theoretical maximum discharge need<sup>1</sup> 76,3

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.



# Lübeck, including Travemünde (Germany)

UN LOCODE: DELBC

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

PRFs are available in all berths, since waste water is collected with Tank Trucks or barges.

At the port of Lübeck sewage can be collected by tank trucks or barges (private operators) and discharged at the central sewage treatment plant. No direct discharge to sewer system.

The “no-special-fee” contains a part of 0,001 €/GT for waste water (black water). On presentation of a receipt for disposal of waste water, this fee is paid back by the Port Operator.

## Planned improvements

A discharge-connection to the public sewer system for small Ships is considered to be installed in Travemünde (planned for 2022-2025)

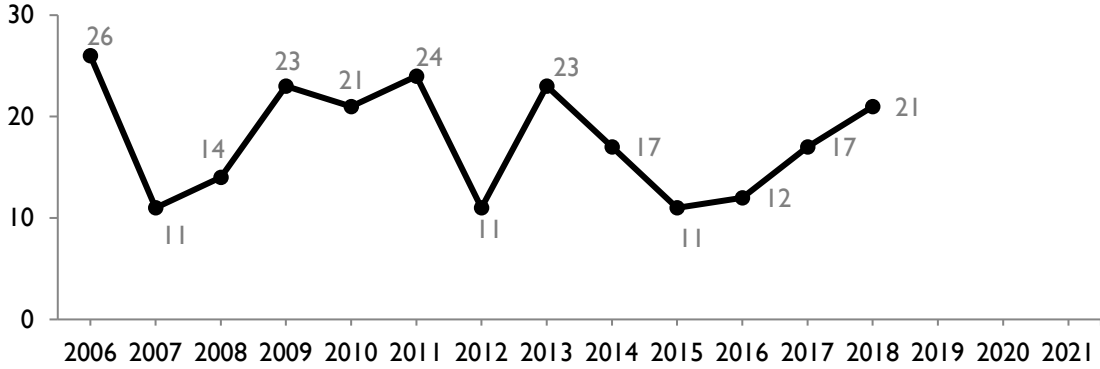
## Additional information

-

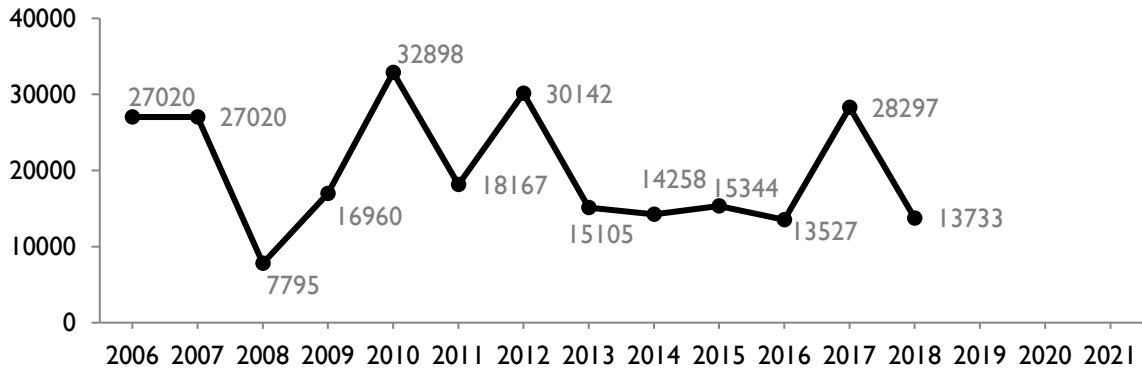
## 2. Passenger traffic trends in Lübeck (incl. Travemünde)

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

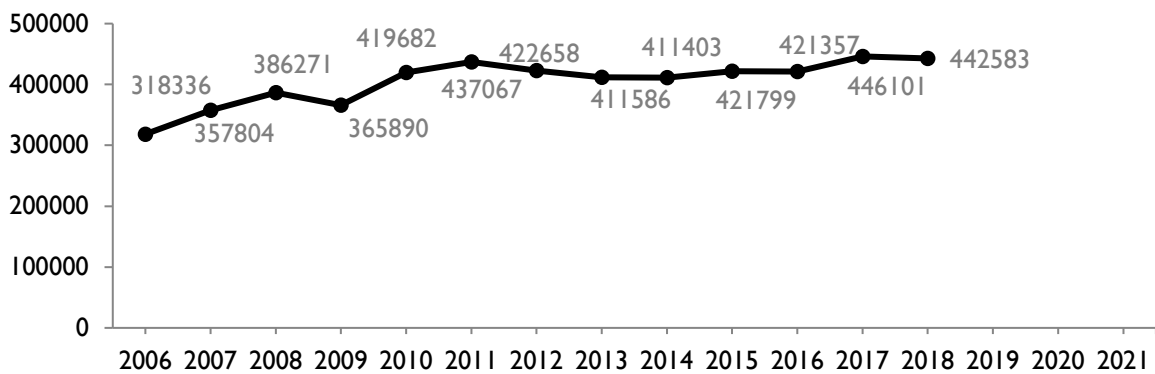
Cruise ships calls:



Cruise ships passengers:



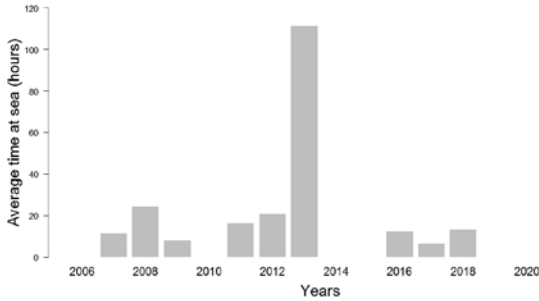
International cruise and ferry passengers:



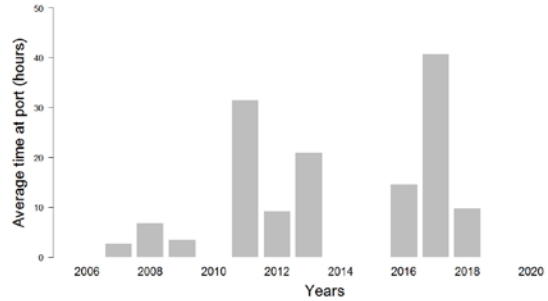
### 3. Cruise ship visits in Lübeck (including Travemünde)

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

The Lübeck port has not yet disposed of contaminated water from cruise ships by 2016.

#### 3.4. Comments from cruise ships on port facilities (2014)

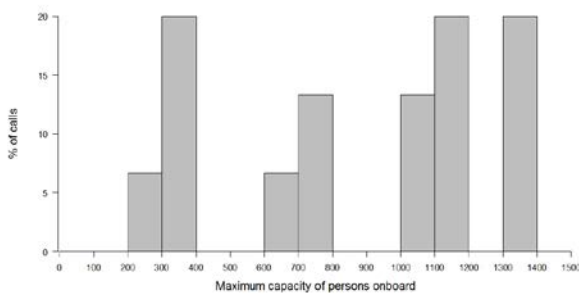
No information available.

#### Comments from ports on cruise ship visits (2014)

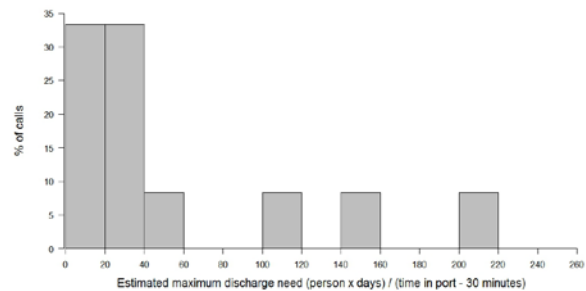
There is enough capacity, but little demand.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

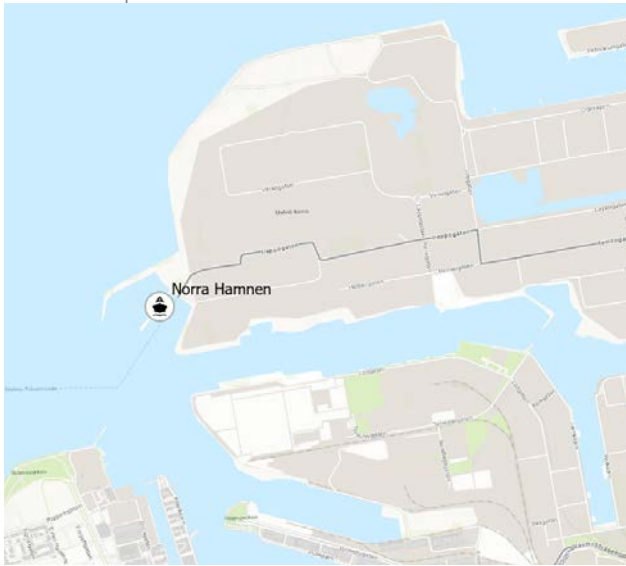


<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Malmö (Sweden)

<http://www.cmpport.com/> UN LOCODE: SEMMA.

Location of the port of Malmö.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

- All berth's available with PRF.
- Maximum discharge rate: 24 m<sup>3</sup>/h Fixed PRF berth available at berth "Norra Hamnen" for ferries, with coordinates 55°37'35.8"N 12°59'21.7"E. All other berths are available with mobile PRF (trucks) upon request from ships, with minimum notice time of 24 hours before ship arrival.
- Sewage/Treated wastewater pumped ashore must be free from contamination of other waste or products, such as oily waste, chemicals, or other substances that can be harmful to sewage treatment plant and the marine environment.
- No special-fee.
- There were 3383 m<sup>3</sup> and 3024 m<sup>3</sup> sewage discharges from ferries in 2020 and 2021, respectively.

## Planned improvements

Current waste reception facilities are sufficient to ensure legal requirements and arriving ships waste reception needs.

## Additional information

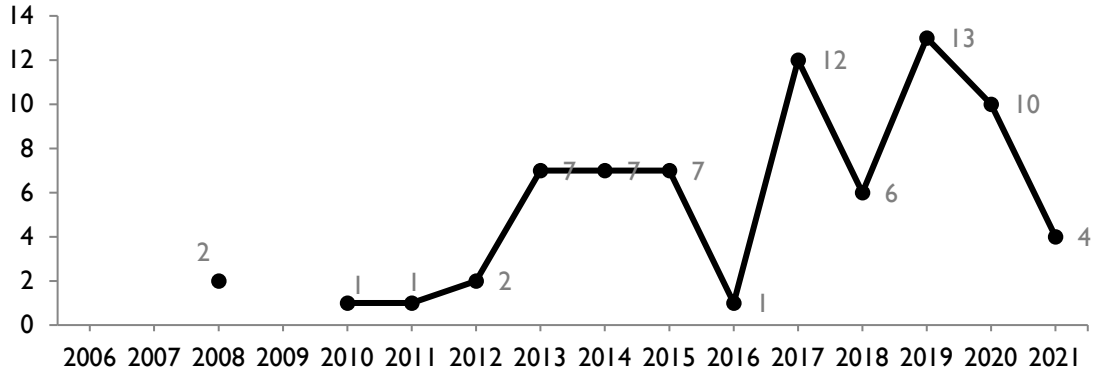
Hose flushing must be done from the ship.

If any problems call Port Office at Phone +45 35 46 11 38.

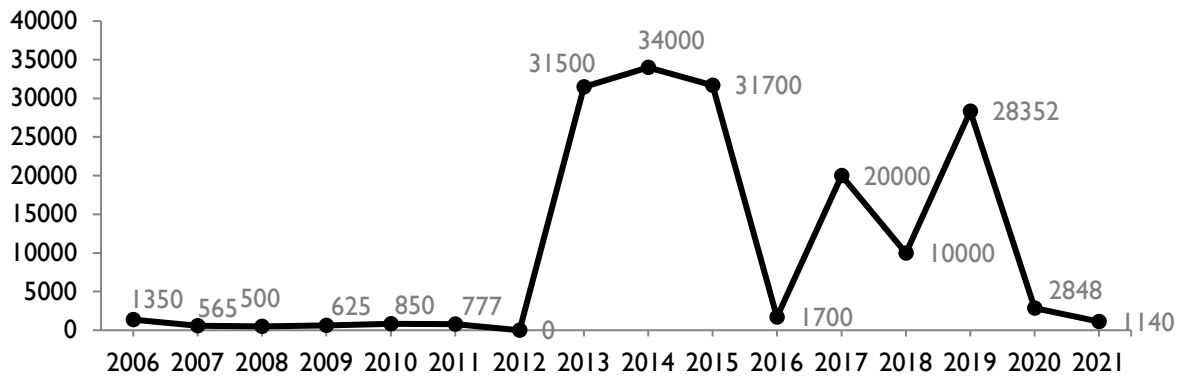
## 2. Passenger traffic trends in Malmö

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

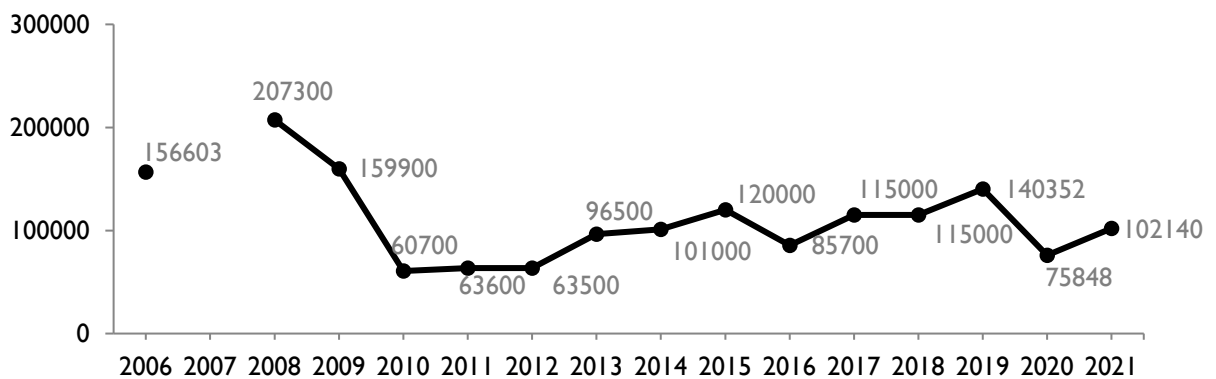
Cruise ships calls:



Cruise ships passengers:



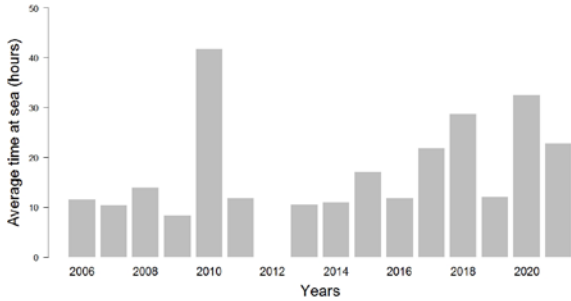
International cruise and ferry passengers:



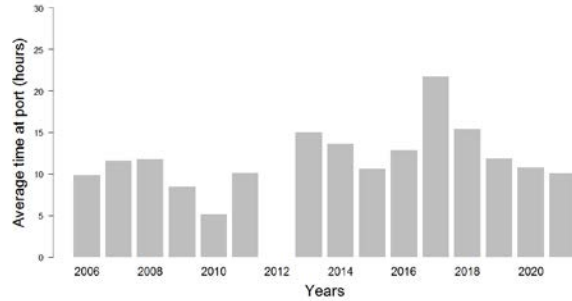
### 3. Cruise ship visits in Malmö

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

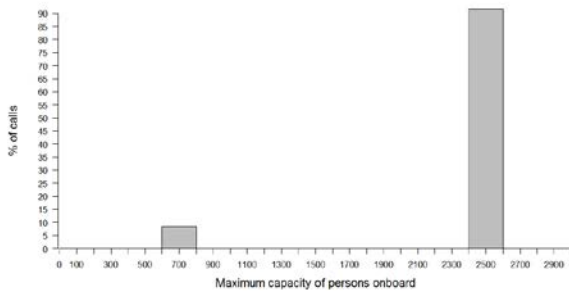
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

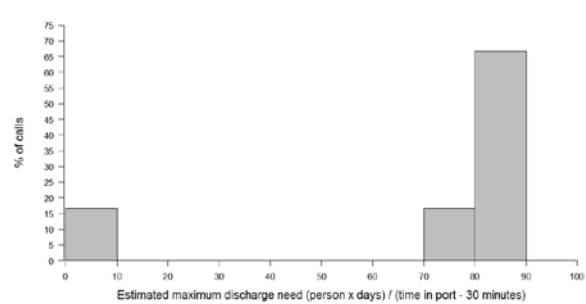
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Mariehamn (Finland)

<http://www.mariehamnshamn.ax/> UN LOCODE: FIMHQ

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

Sewage PRF facilities available and adequate with a pumping capacity of 30m<sup>3</sup>/h.

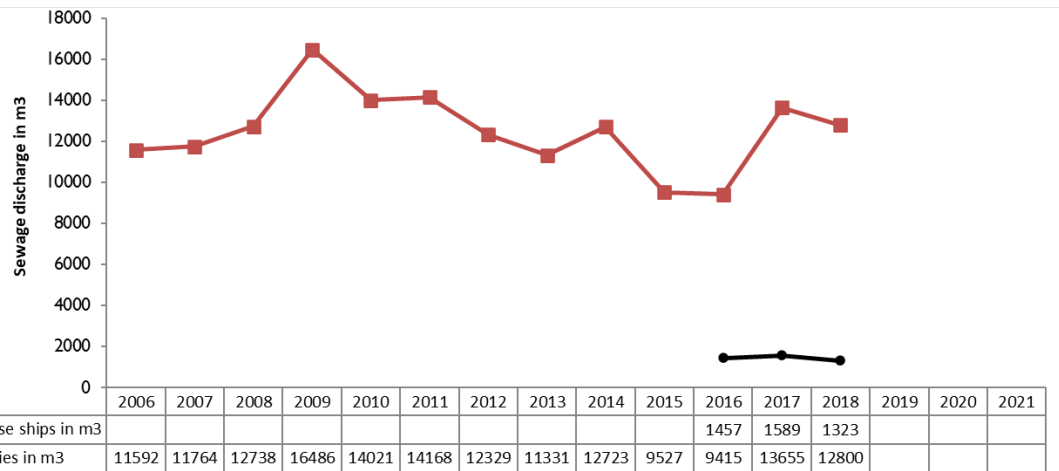
The use of the facilities is free.

## Planned improvements

Not in the near future.

## Additional information

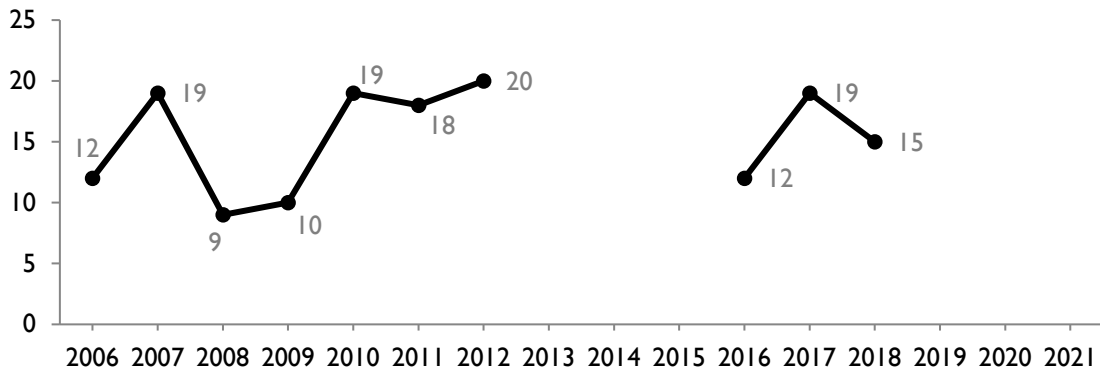
No information available.



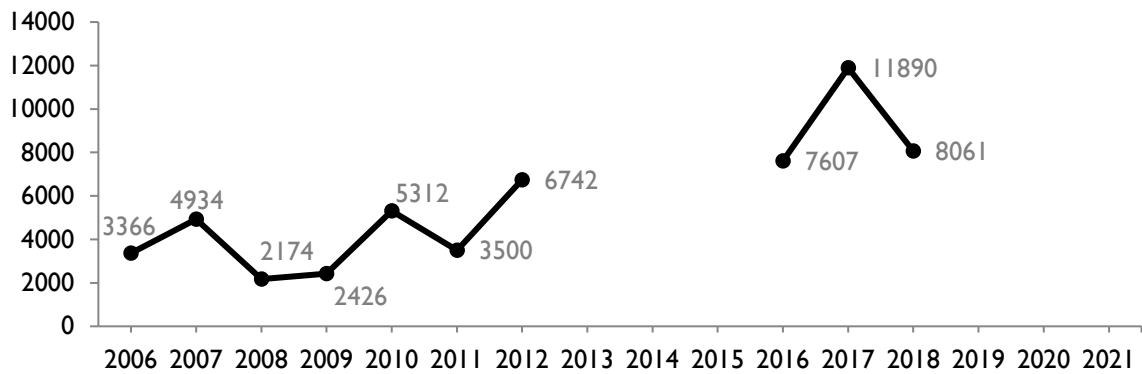
## 2. Passenger traffic trends in Mariehamn

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

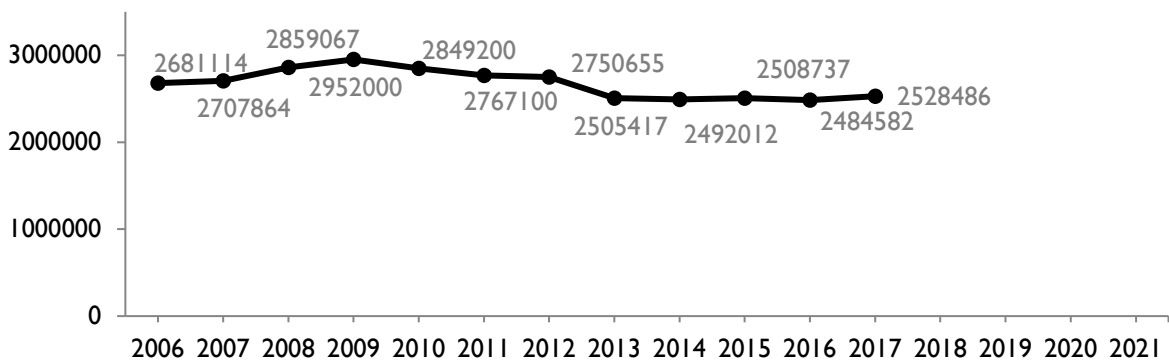
Cruise ships calls:



Cruise ships passengers:



International cruise and ferry passengers:

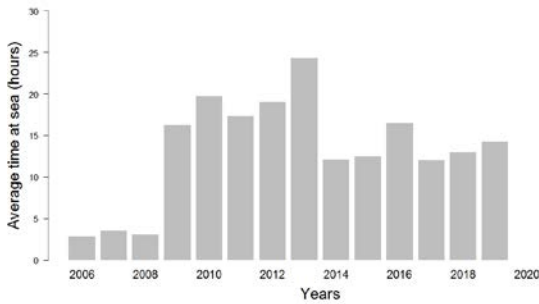




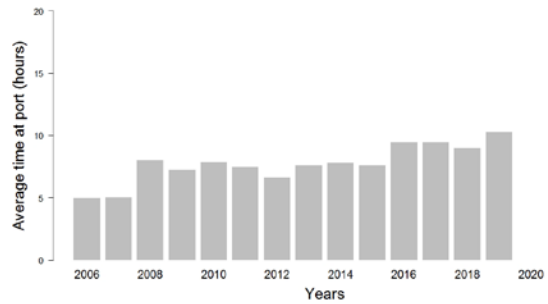
### 3. Cruise ship visits in Mariehamn

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

Cruise ships have so far not used Mariehamn sewage PRF facilities even if available according to port information reported to Nordic Council (Nordiska Rådet) in 2013.

#### 3.4. Comments from cruise ships on port facilities (2014)

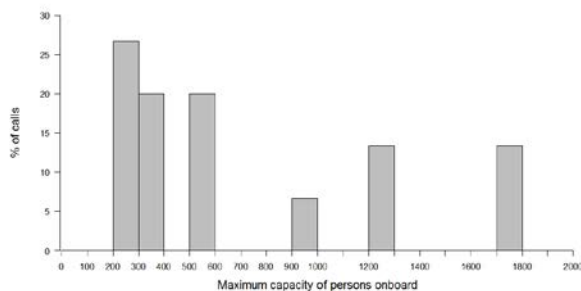
No information available.

#### Comments from ports on cruise ship visits (2018)

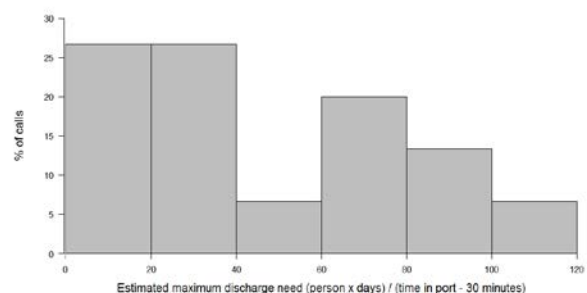
From 2015 the discharge of sewage has increased. At 2017 15 of 19 cruise vessels used the PRF. Most of the ships have short voyages before entering Mariehamn. Last port is often Stockholm or Helsinki.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Nynäshamn (Sweden)

UN LOCODE: SENYN



## I. Sewage Port Reception Facilities (information from 2019)

In the Port of Nynäshamn there are no fixed links. The treatment plant owned by the municipality of Nynäshamn does not accept the sewage because of lack of capacity and the content of the sewage.

The Port can provide tank trucks or a barge with a capacity of 550 m<sup>3</sup> to collect waste water if needed.

The cruise vessels have for many years anchored outside the port area. From 2016 the Port can offer the cruise vessels to anchor in the port area using a pier known as a Seawalk, a retractable, manoeuvrable floating pier. The pier is prepared for pipes for sewage.

The disposal of black- and greywater in port is included in the port fee. It is thus a general fee, based on the number of passengers, regardless of if the vessel offloads black- and grey water or not.

All the ferries have exemptions from the delivery of sewage given by the Swedish Transport Agency.

## Planned improvements

The Port investigates different options for receiving sewage and is also discussing with the municipality.

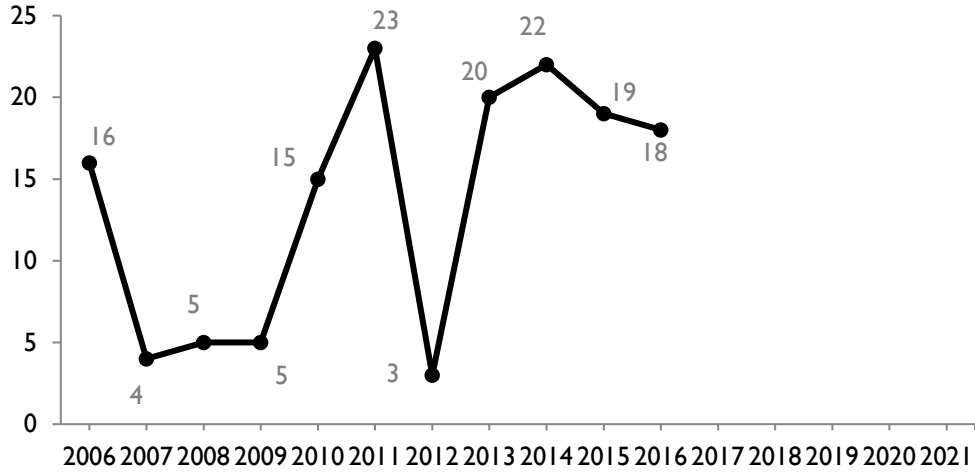
## Additional information

No information available.

## 2. Passenger traffic trends in Nynäshamn

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

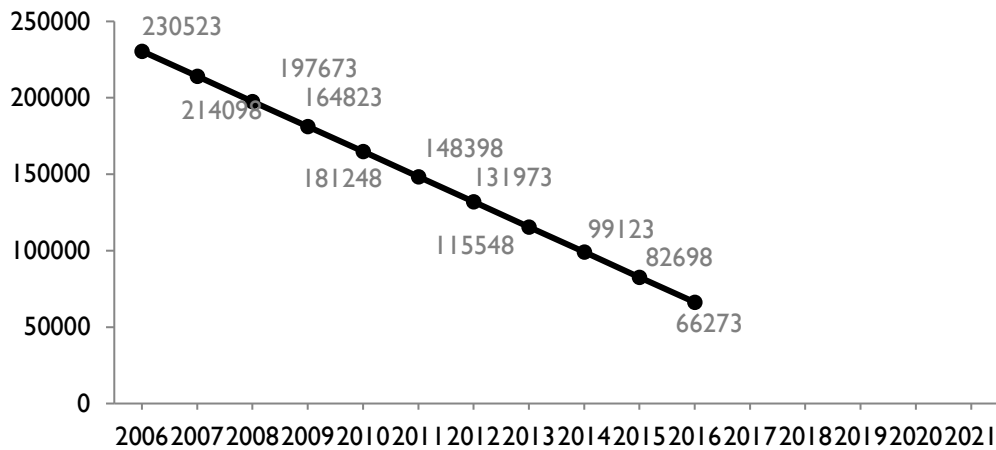
Cruise ships calls (anchoring):



Cruise ships passengers:



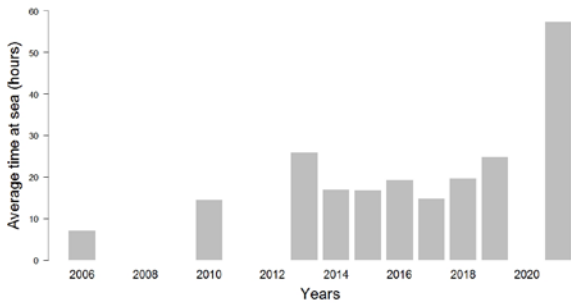
International passengers:



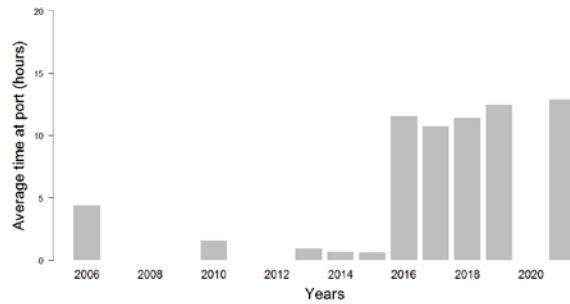
### 3. Cruise ship visits in Nynäshamn

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Riga (Latvia)

<http://www.rop.lv/en> UN LOCODE: LVRIX

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

Facilities' šādā redakcijā.

The quays are served by mobile reception facilities –truck with capacity 30m<sup>3</sup> and barge with max capacity 450 m<sup>3</sup>.

No direct discharge to municipal sewage system available.

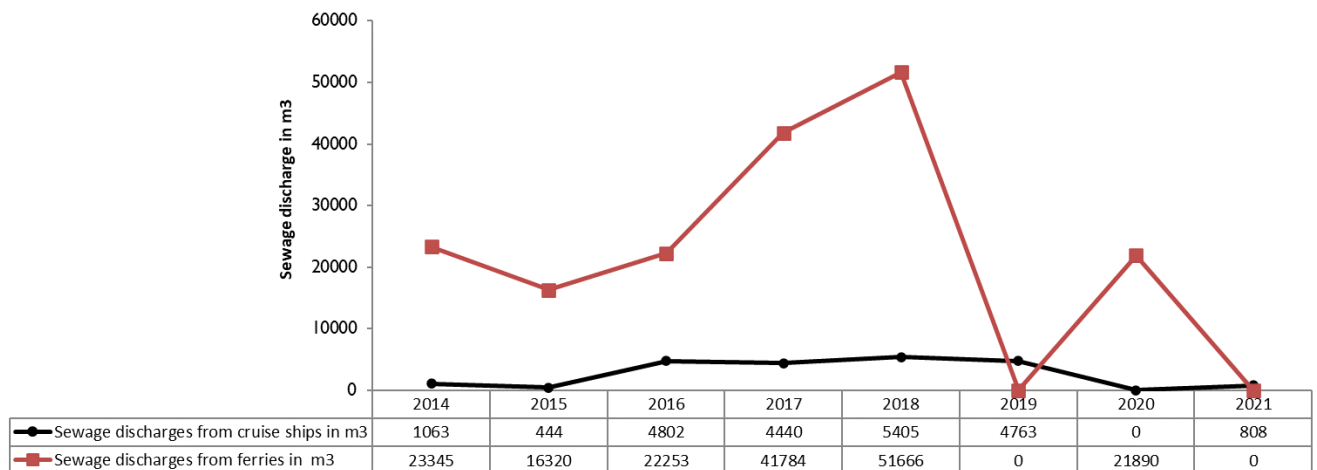
Sanitary fee charged from each ship includes delivery of sewage from passenger ships.

## Planned improvements

-

## Additional information

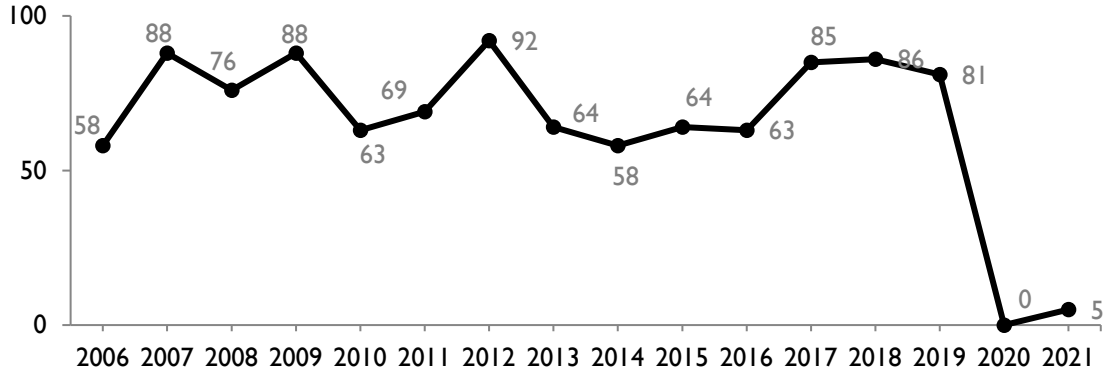
-



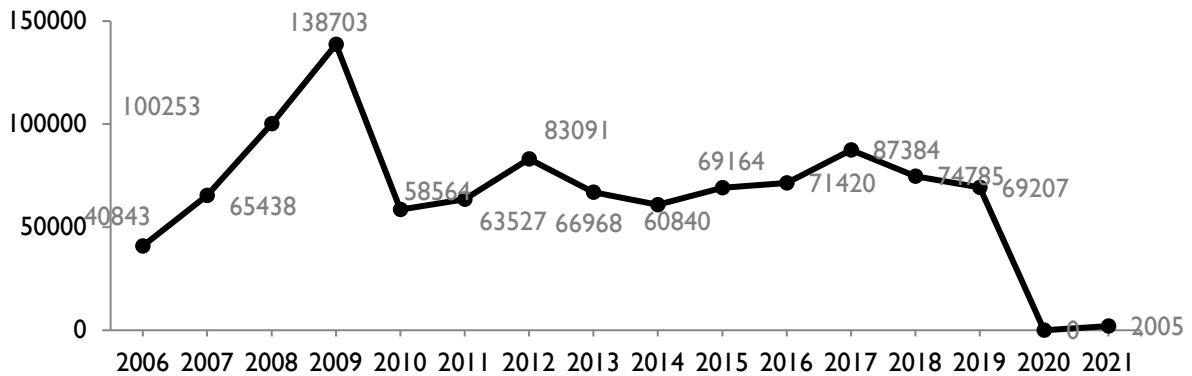
## 2. Passenger traffic trends in Riga

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

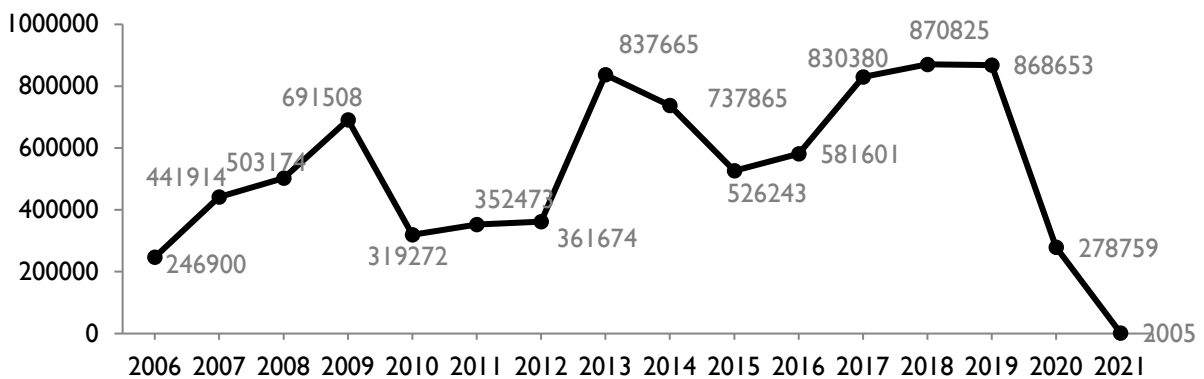
Cruise ships calls:



Cruise ships passengers:



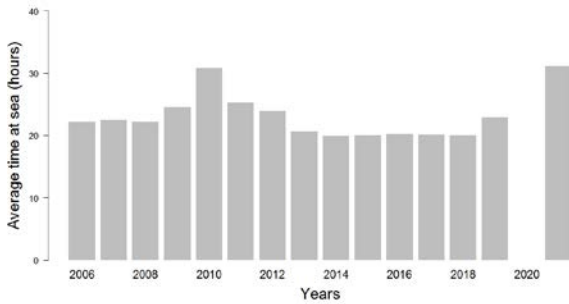
International passengers:



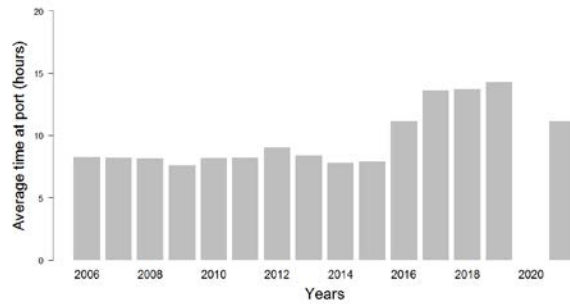
### 3. Cruise ship visits in Riga

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

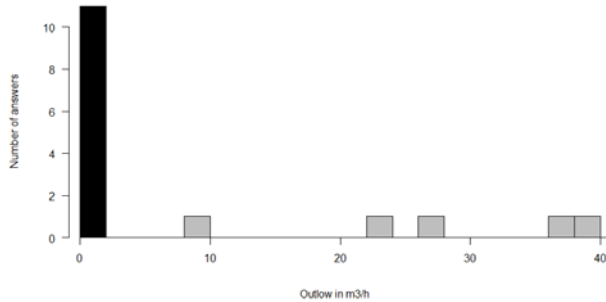


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

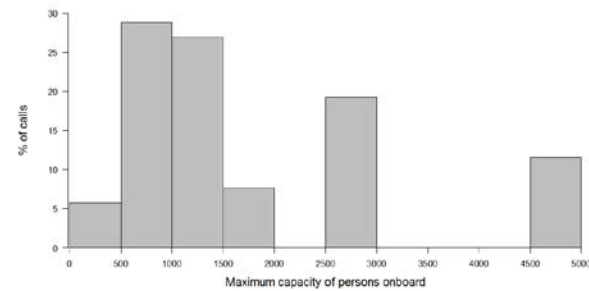


#### 3.4. Comments from cruise ships on port facilities (2014)

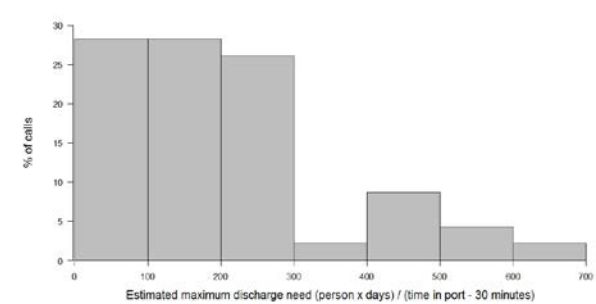
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

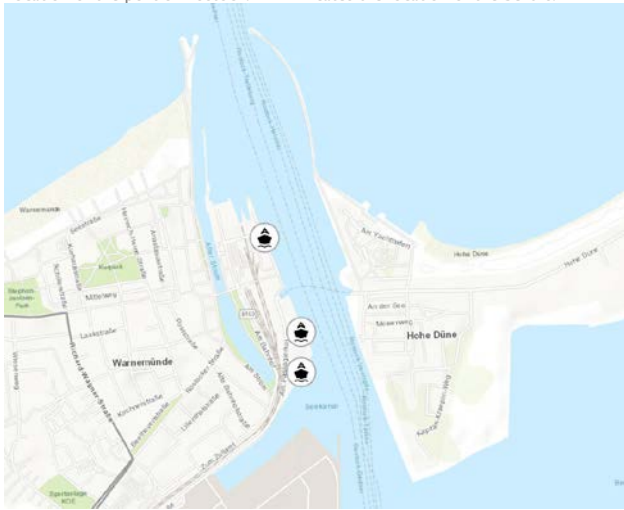


<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Rostock (Germany)

<http://www.rostock-port.de/> UN LOCODE: DERSK

Location of the port of Rostock.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

Cruise ships may dispose of their graywater at the Warnemünde passenger quay. Rostock port has a total of 3 reception stations for ships' waste water at its disposal and is able to receive up to 1,000 m<sup>3</sup> of graywater per day.

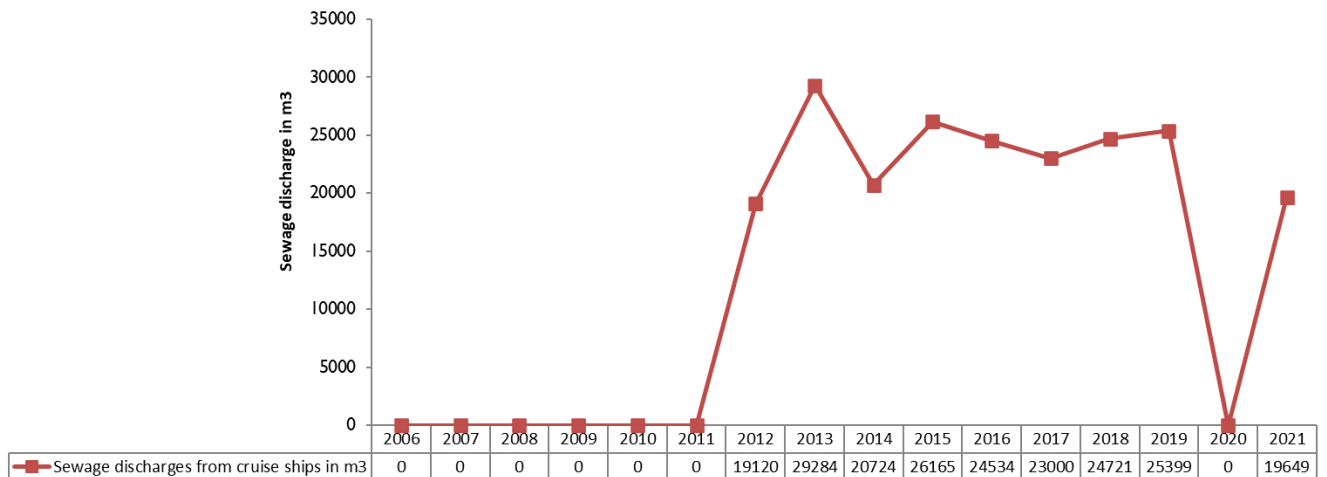
Up to 300 m<sup>3</sup> amount discharged per port call €0.00; for every additional m<sup>3</sup> of discharged amount €3.00 per m<sup>3</sup>.

## Planned improvements

-

## Additional information

Cruise ships must maintain a minimum pumping rate of 40 cubic metres per hour and a maximum pumping rate of 80 cubic metres per hour at berths P1 to P4 and a maximum pumping rate of 120 cubic metres per hour at berths P7 to P8.

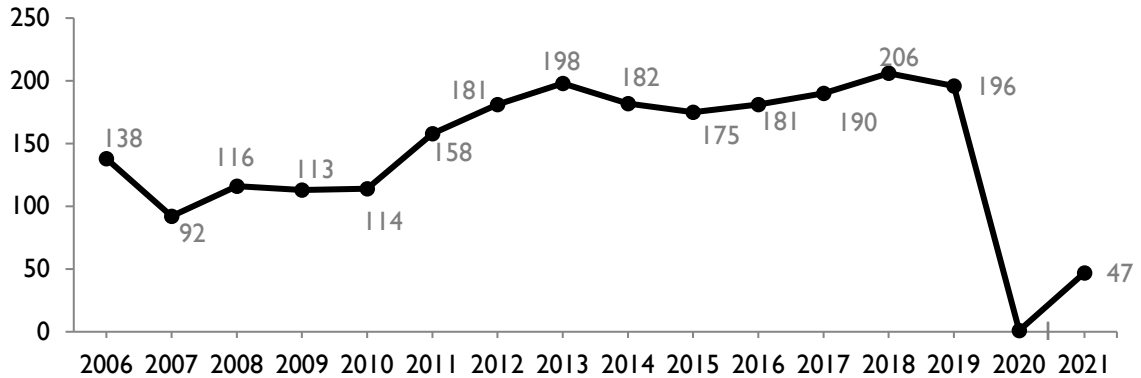




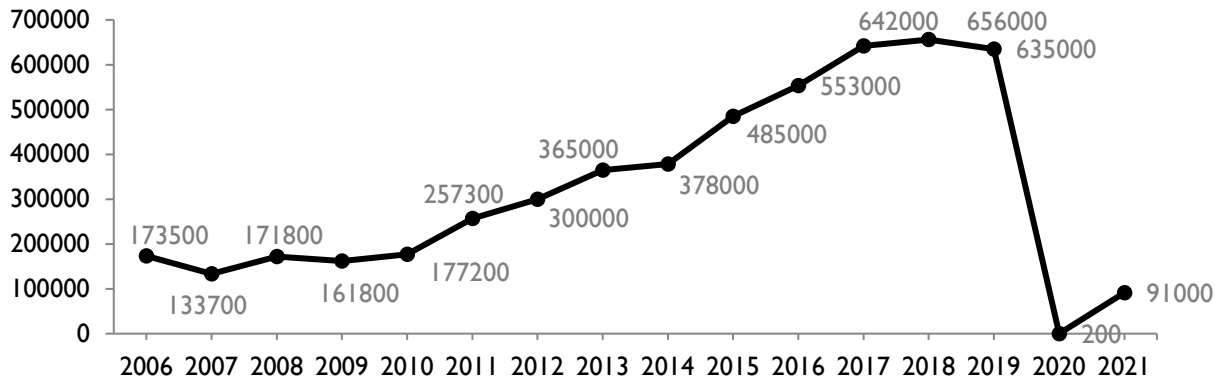
## 2. Passenger traffic trends in Rostock

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

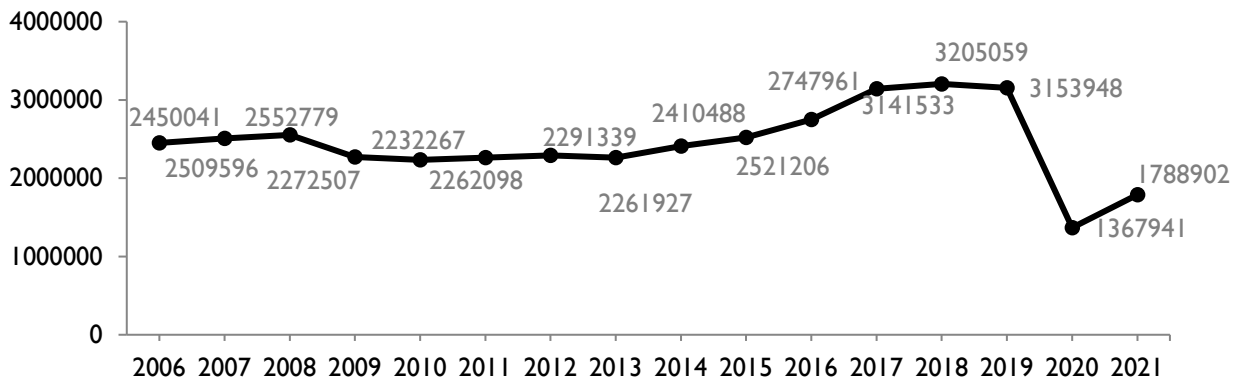
Cruise ships calls:



Cruise ships passengers:



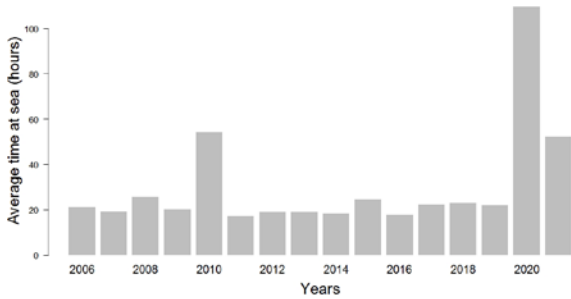
International cruise and ferry passengers:



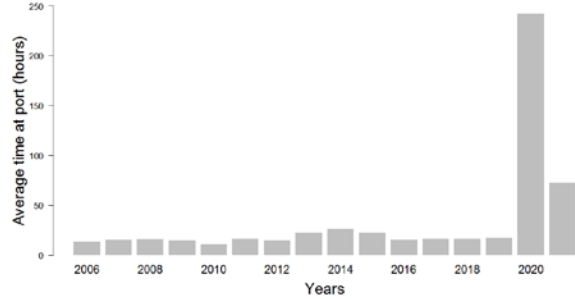
### 3. Cruise ship visits in Rostock

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

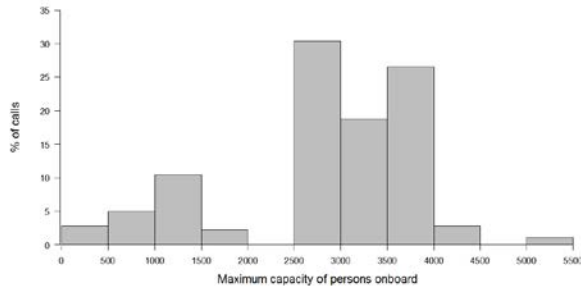
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

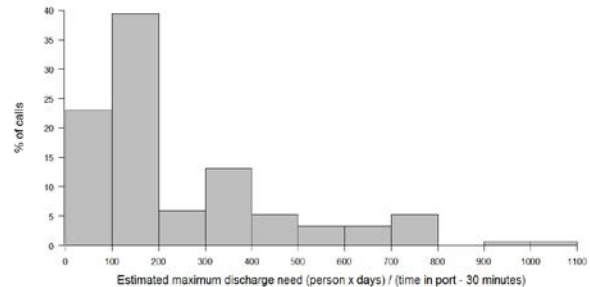
A ship can discharge 300m<sup>3</sup> for free per port of call.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Rønne - Bornholm (Denmark)

<http://www.roennehavn.dk/site/Frontsite/> UN LOCODE: DKRNN



## I. Sewage Port Reception Facilities

No information available.

## Planned improvements

No information available.

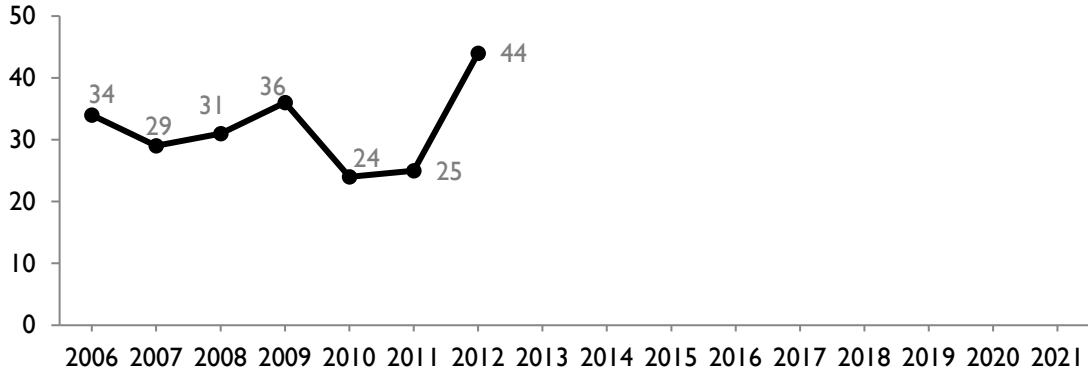
## Additional information

No information available.

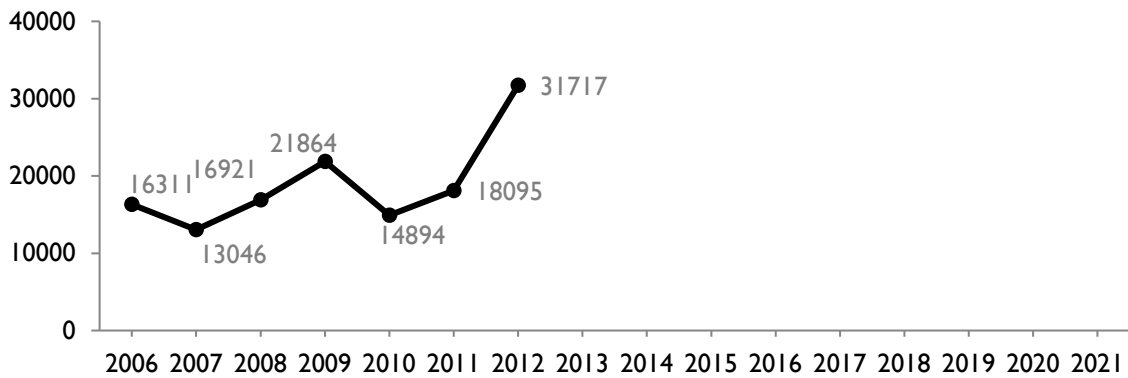
## 2. Passenger traffic trends in Rønne – Bornholm

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

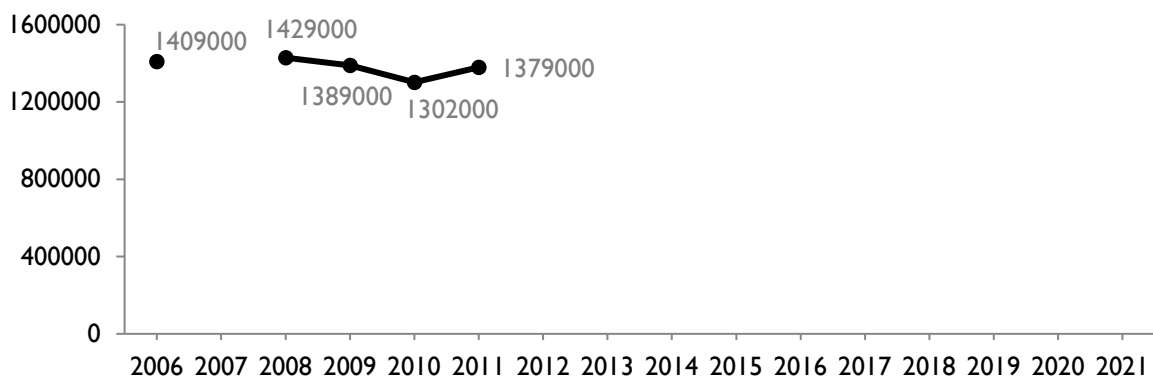
Cruise ships calls:



Cruise ships passengers:



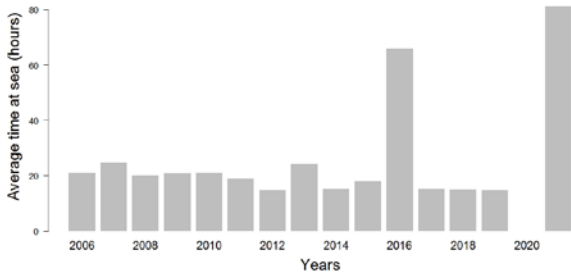
International passengers:



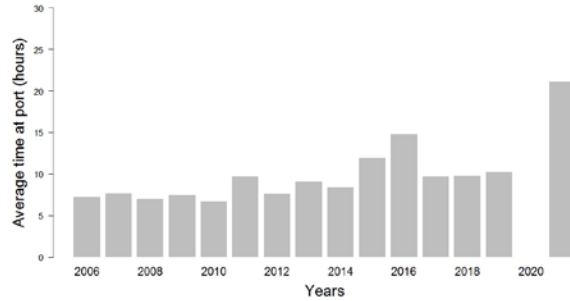
### 3. Cruise ship visits in Rönne - Bornholm

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

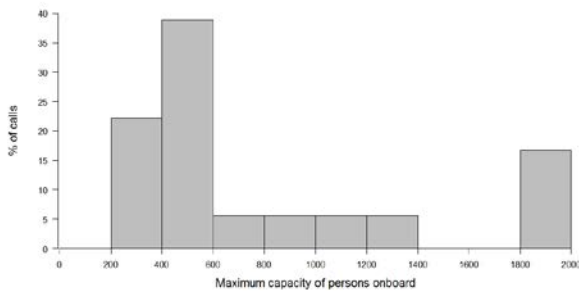
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

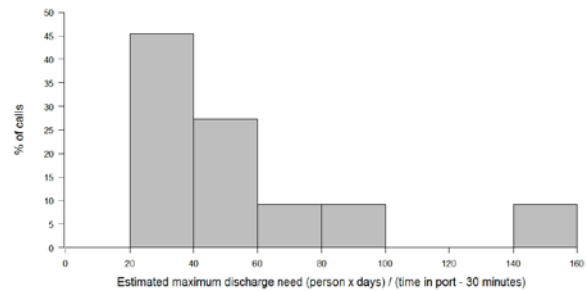
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

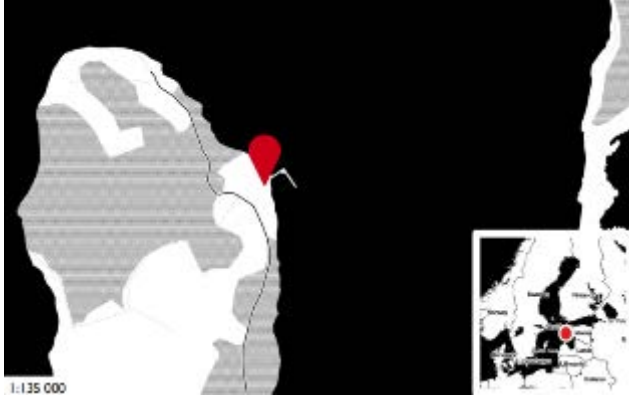
## Saaremaa (Estonia)

<http://www.portoftallinn.com/saaremaa-harbour> UN LOCODE: EESMA

A port on the North side of Saaremaa island (Küdema Bay). Operated by the Tallinn port authority.

There are mobile sewage PRF in all berths for international cruise ships

 Berth used by cruise ships according to AIS data during April - October 2014



### I. Sewage Port Reception Facilities

- Number of berths and information on which berths do have PRF availability – 2 berths.
- Capacity of PRF – 14m<sup>3</sup> per day due to remote location.
- Only mobile PRF are available and are only available upon request (at least 24 hours prior to arrival in the port).
- There are no limitations or requirements regarding sewage quality.
- Fee structure - no-special-fee, sewage exceeding 7m<sup>3</sup> is subject to extra payment.

### Planned improvements

-

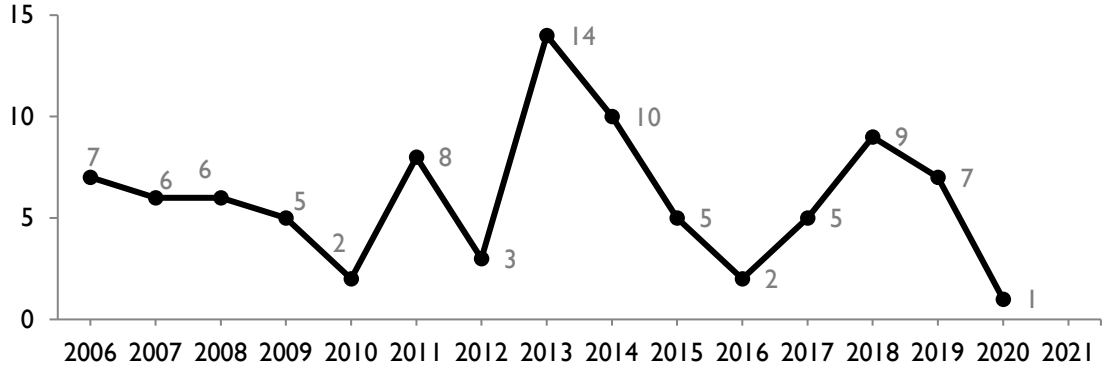
### Additional information

Ship waste reception and handling plan is available here: <https://www.ts.ee/en/rules-rates/>

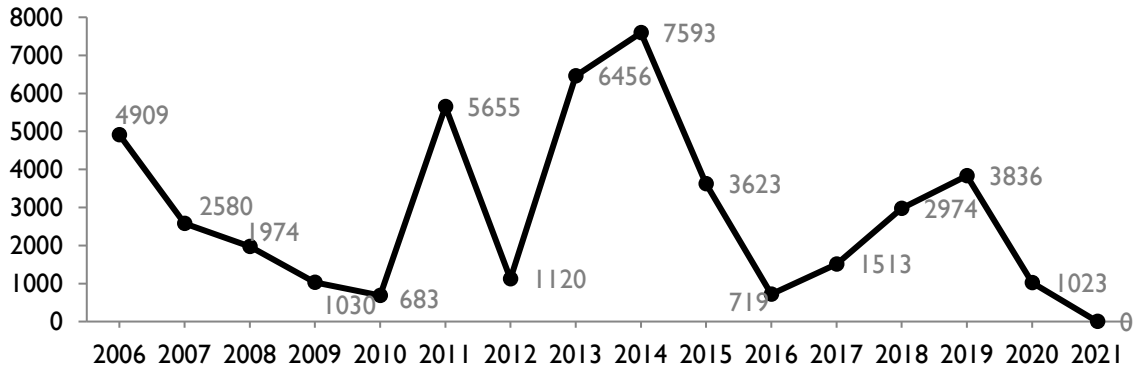
## 2. Passenger traffic trends in Saaremaa

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

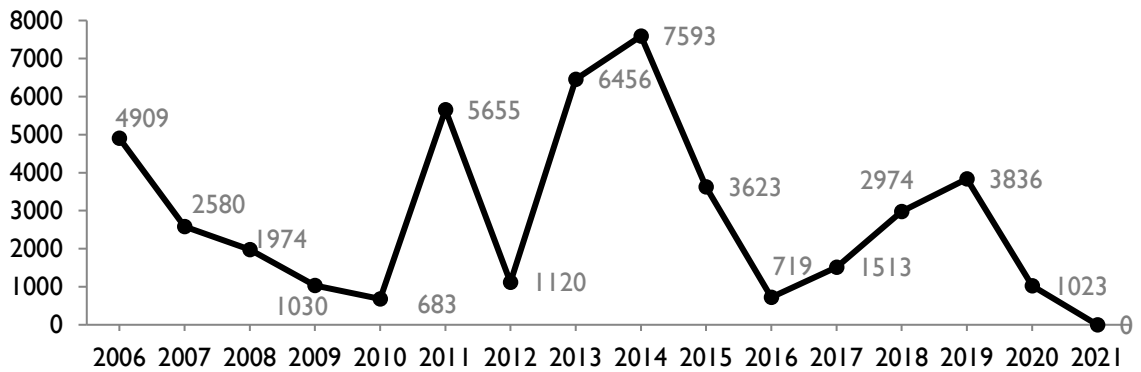
Cruise ships calls:



Cruise ships passengers:



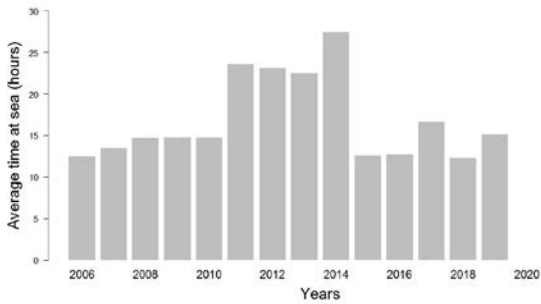
International cruise and ferry passengers:



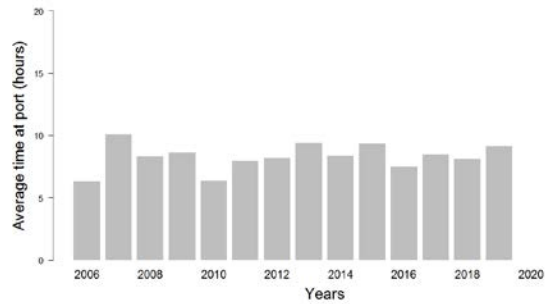
### 3. Cruise ship visits in Saaremaa

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

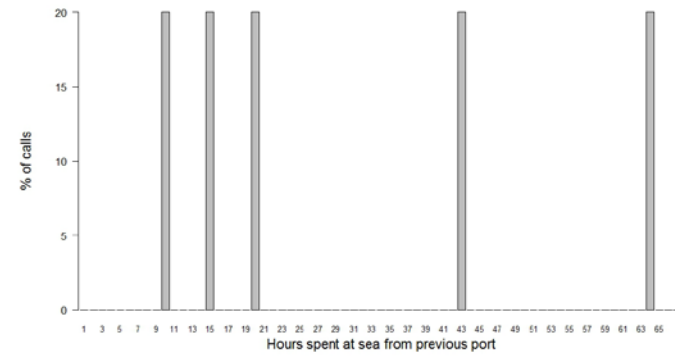


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

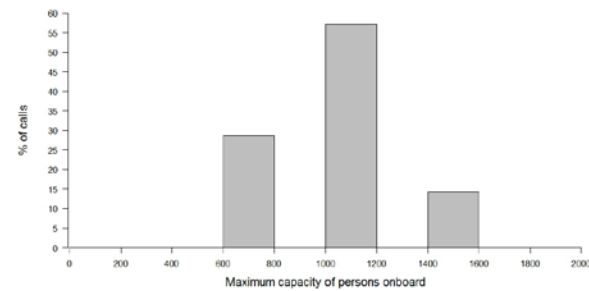


#### 3.4. Comments from cruise ships on port facilities (2014)

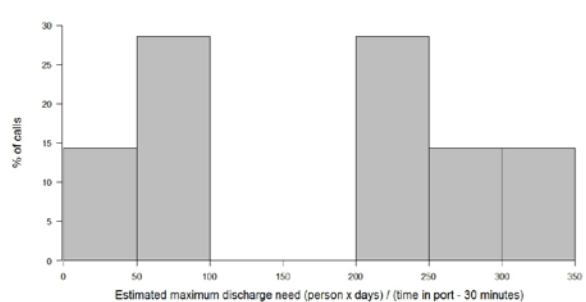
When the tank truck was not available, the ship had the authorization to off-load the sewage on the next day during the port of call in Tallinn with no extra cost. No ship delivered sewage to the port of Saaremaa.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



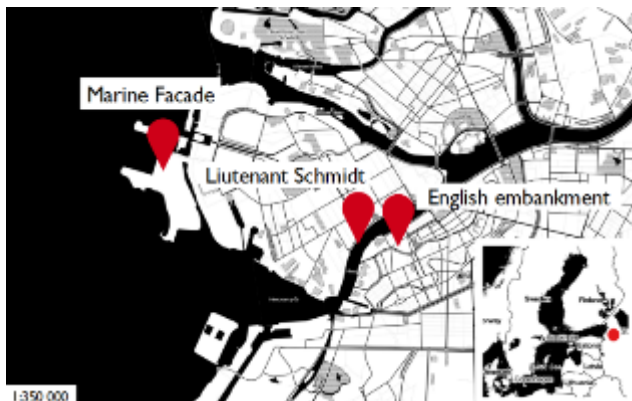
<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.



# Saint Petersburg (Russia)

<http://www.pasp.ru> UN LOCODE: RULED

Berth used by cruise ships according to AIS data during April - October 2014



## 1. Sewage Port Reception Facilities

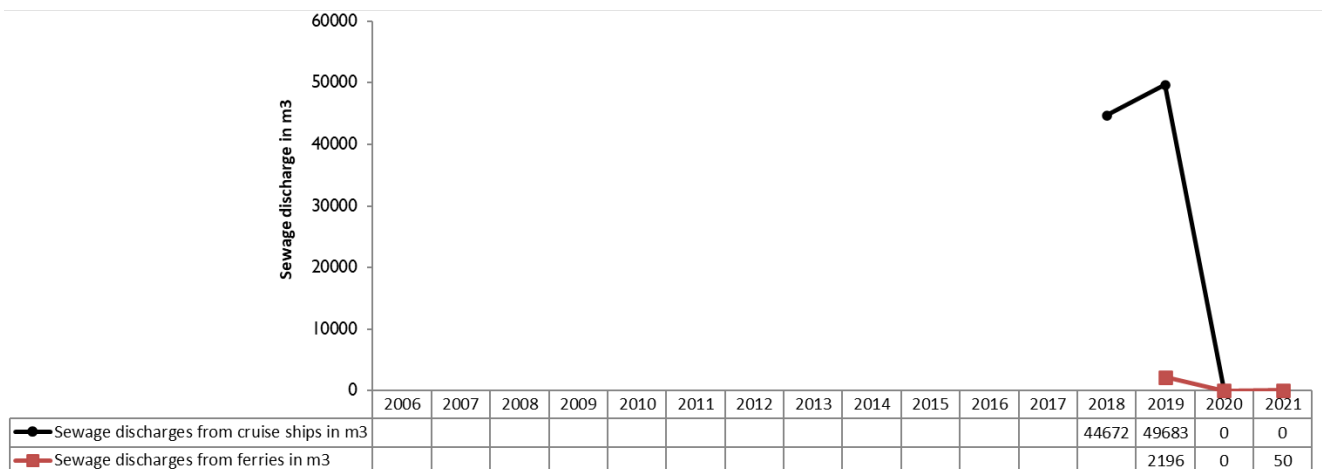
- The sewage from ships could be discharged in the passenger port “Marine Facade”, berths of Marine Station, Lieutenant Schmidt Embankment and English Embankment.
- There are 7 berths on the passenger port “Marine Facade” (59°55’N;030°00’E), all of them have fixed PRF.
- For passenger port “Marine Facade” it is necessary 2 hours notification before discharge sewage to PRF, which is available 24 hours a day 7 days per week. Fee structure – additional charges. Capacity of PRF- maximum quantity – 4740 m<sup>3</sup>/day, maximum discharge rate – 100 m<sup>3</sup>/h.
- In the berths of Marine Station (6 berths), Lieutenant Schmidt Embankment and English Embankment (59°53’N; 030°15’E) three companies-service providers are operated, which have mobile, namely 7 specialized vessels PRF for reception of sewage.
- Maximum quantity – 81; 400; 72,2; 185; 50; 50; 50 m<sup>3</sup> and maximum discharge rate – depends on ship’s pump, depends on ship’s pump; up 100 and for others 20 m<sup>3</sup>/h respectively. Fee structure- no-special-fee and additional charges.

## Planned improvements

No information.

## Additional information

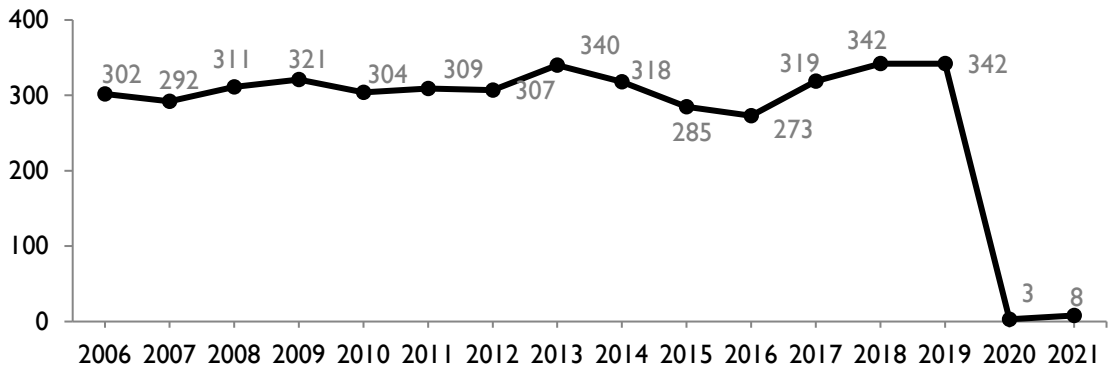
-



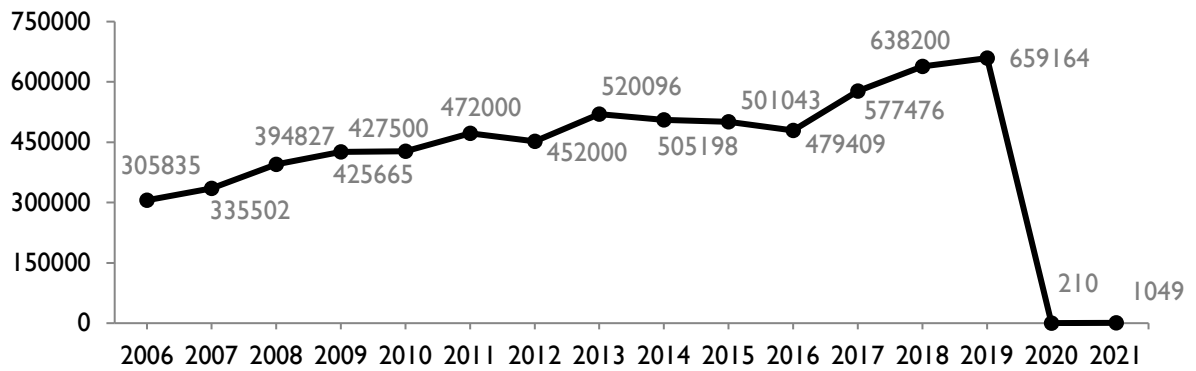
## 2. Passenger traffic trends in Saint Petersburg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication “Baltic Port List” and the Nordic Council of Ministers.

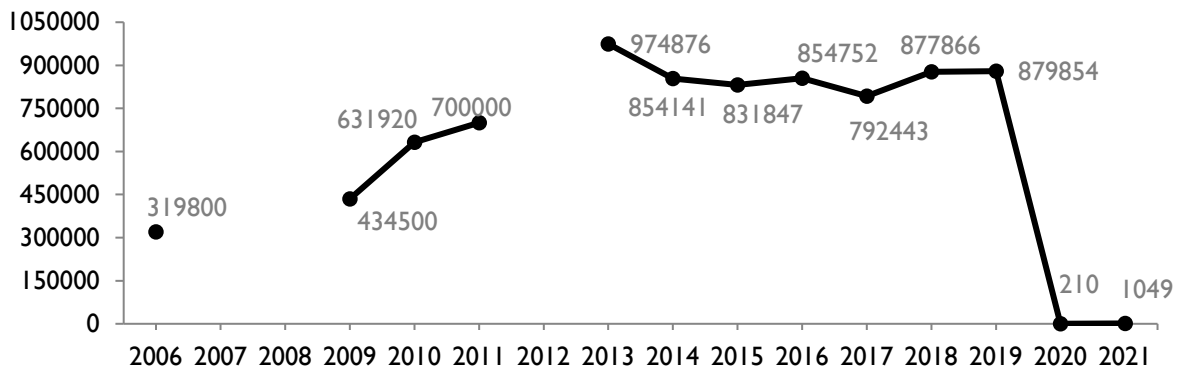
Cruise ships calls:



Cruise ships passengers:



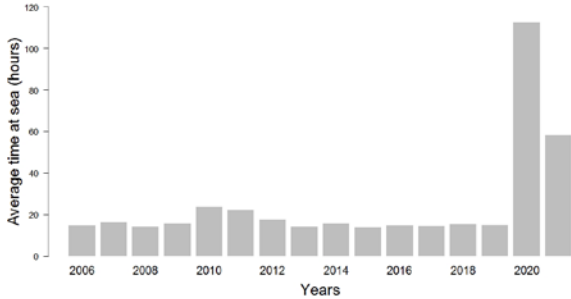
International cruise and ferry passengers:



### 3. Cruise ship visits in Saint Petersburg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call

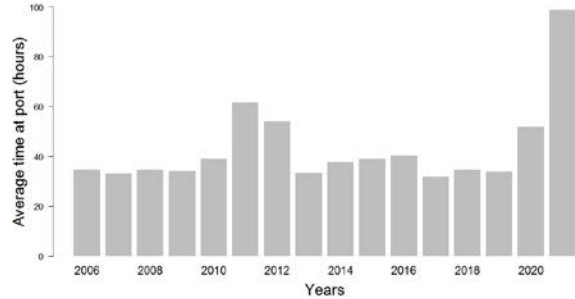
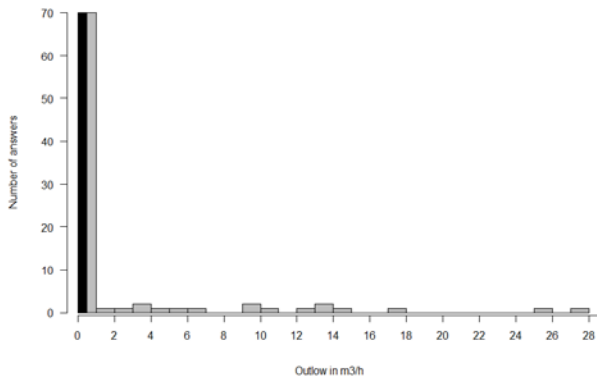


Figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

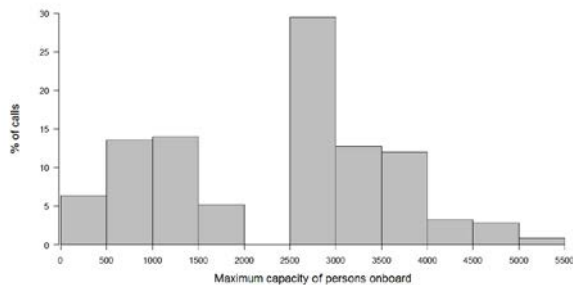


#### 3.4. Comments from cruise ships on port facilities (2014)

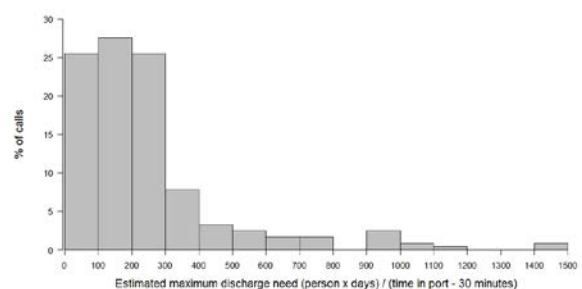
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Sassnitz, including Mukran (Germany)

<http://www.faebrhafen-sassnitz.de/en/> UN LOCODE: DESAS

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

No sewage from cruise ships was discharged in Mukran in 2017 nor 2018.

## Planned improvements

Sewage discharge and disposal facilities for future calls are currently being built.

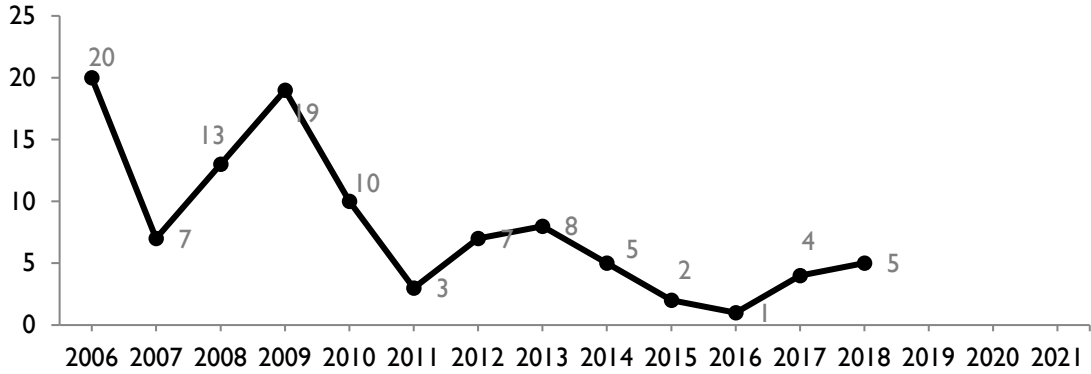
## Additional information

No information available.

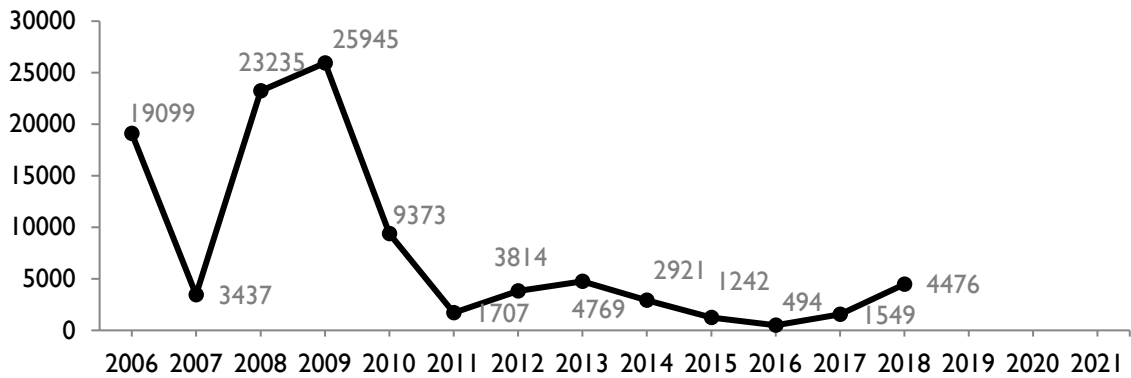
## 2. Passenger traffic trends in Sassnitz

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

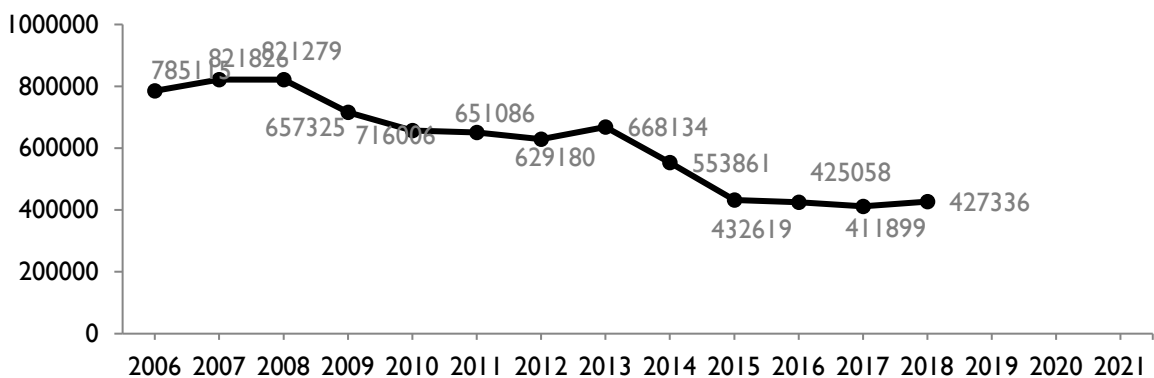
Cruise ships calls:



Cruise ships passengers:



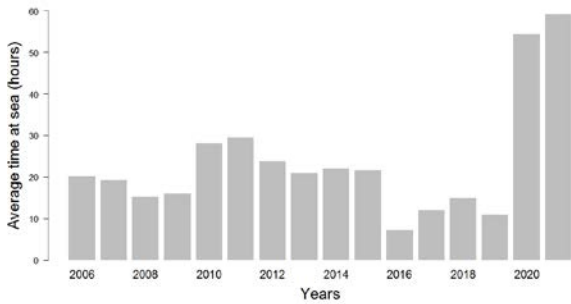
International cruise and ferry passengers:



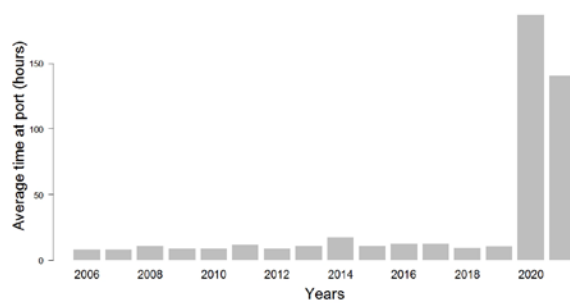
### 3. Cruise ship visits in Sassnitz, including Mukran

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

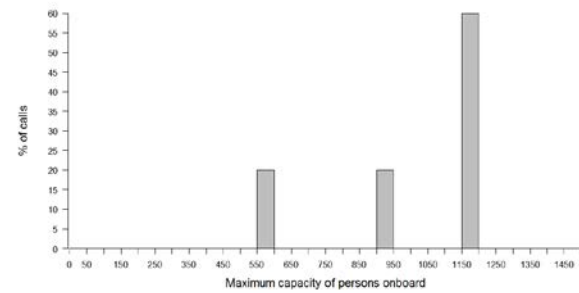
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

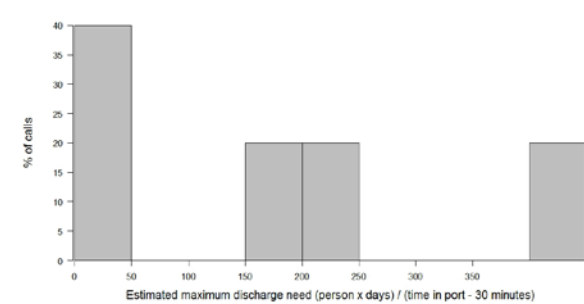
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

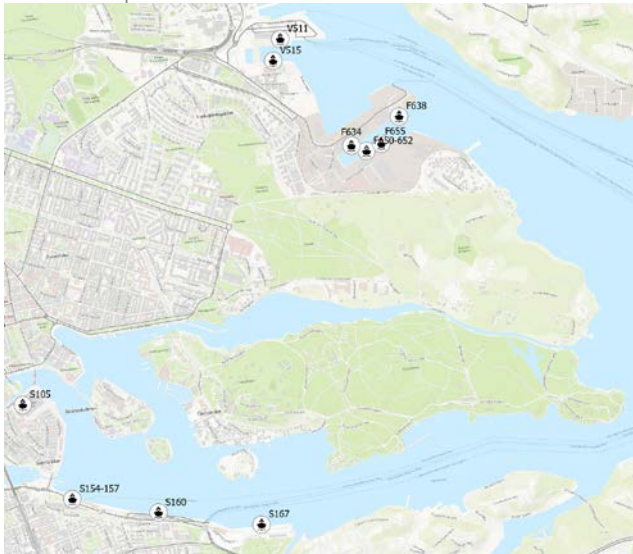


<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Stockholm (Sweden)

<http://www.stockholmshamn.se/> UN LOCODE: SESTO

Location of the port of Stockholm.  indicates the location of the berths.



## I. Sewage Port Reception Facilities

This year and many years back the fee structure was "no special fee". There is no information about fee structure for upcoming years, but changes in the coming years are foreseen.

Port reception sewage facilities - Maximum receiving capacity cruise quays:

Quay	Max. receiving capacity	Max. pressure permitted	Hose connection size	DN size
V515	75 m <sup>3</sup> /h	3 bars	4"	100-200
F650/F655	70 m <sup>3</sup> /h	3 bars	4"	100-200
F638	200 m <sup>3</sup> /h	3 bars	4"	100-200
F634	200 m <sup>3</sup> /h	3 bars	4"	100-200
V511	>400 m <sup>3</sup> /h	3 bars	4"	100-200
S167	200 m <sup>3</sup> /h	3 bars	4"	100-200
S105	30 m <sup>3</sup> /h	1,5 bars	2,5"	100-150
S155	200 m <sup>3</sup> /h	3 bars	4"	100-150
S160	75 m <sup>3</sup> /h	3 bars	2,5"	100-150
Bojl	N/A	N/A	N/A	N/A
Seawalk	N/A	N/A	N/A	N/A

The following flanges are available shore side for connecting to the direct flow sewer system ashore:

- DN 100, 4 inches – 4 holes;
- DN 100, 4 inches – 8 holes;
- DN 125, 5 inch - 8 holes;
- DN 150, 6 inch - 8 holes; and
- DN 200, 8 inch - 8 holes.

Please note that the vessels own flange is to be used to connect to the ports hose. The distance from the vessel to a shore connection point is never longer than 60 meters on all quays.

Availability of PRF per quay (always available, prior request is required):

- Värtahamnen 511: 2 fixed connections for sewage,
- Värtahamnen 515: 1 connection for sewage.
- Frihamnen F634: 4 connections for sewage.
- Frihamnen F638: 10 connections for sewage.
- Skeppsbron S105: 1 connection for sewage.
- Stadsgården S160: 1 connection for sewage.
- Stadsgården S167: 5 connections for sewage.

Värtahamnen: is one of the largest port areas in Stockholm and serves ferry traffic to Helsinki and Tallinn. During the summer international cruise vessels moor here. Quay facts:

- The Värta Pier:
- 510: Length 90 m, charted depth 7.8 m. Service quay.
- 511: Length 265 m, charted depth 9.9 m. Movable RoRo ramp, width 26 m.
- 512: Length 222 m, charted depth 11.0 m. Movable RoRo ramp, width 29 m.
- 513: Length 245 m, charted depth 8.9 m. Movable RoRo ramp, width 29 m.
- 514: Length 255 m, charted depth 7.9 m. Movable RoRo ramp, width 29 m.
- 515: Length 255 m, charted depth 6.9 m. Movable RoRo ramp, width 29 m.

Frihamnen: approximately half of the cruise liners visiting Stockholm each year call at Frihamnen.

There is a large, modern cruise passenger terminal at the port which enables Stockholm to accommodate several turnarounds. Quay facts:

- Quay 1: 610-611 • Length 130 m, charted depth 6.0 m.
- Quay 2: 620-625: Length 412 m, charted depth 7.4-8.3 m. Permanent RoRo ramp in angle between quays 1 and 2 and at berth 625. Passenger terminal in warehouse 2.
- Quay 3: 630-631: Length 135 m, charted depth 8.4-8.9 m. Permanent ro-ro berth in angle between quays 4 and 3. 631-634: Length 211 m, charted depth 8.9-9.9 m. At berths 631-632 there are three grain silos with a loading facility. Special restrictions on vessel size. 634-638: Length 400 m, charted depth 9.9 m.
- Quay 4: 640-641 • Length 110 m, charted depth 7.4 m.
- Quay 5: 650-652: Length 222 m, charted depth 8.9 m. Permanent RoRo berth in angle between quays 4 and 5.

Stadsgården and Masthamnen are one of Stockholm's largest ports with extensive ferry traffic to Finland. During the summer international cruise vessels moor here. Quay facts:

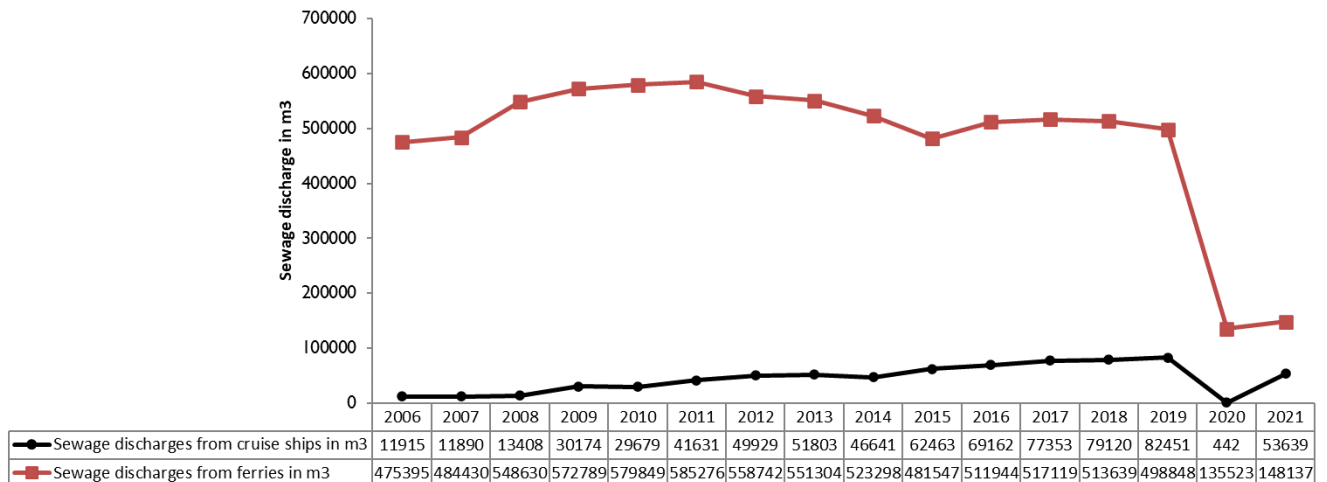
- 154-157 • Length 325 m, charted depth 7.4 m. Terminal building.
- 158: Length 70 m, charted depth 5.0-6.4 m. Boat stop and tender pontoon.
- 159-161: Length 270 m, charted depth 7.3 m. Quay used for cruise vessels.
- 162-163: Length 200 m, charted depth 7.8 m. Ferry terminal with Ro Ro ramp - Viking Line.
- 164: Length 200 m, charted depth 7.6 m. Ferry terminal with Ro Ro ramp - Viking Line.
- 165-167: Length 414 m, charted depth 9.3 m. Berths for cruise vessels.

## Planned improvements

F650/F655 is currently under development to increase capacity. The berth will be used for cruise vessels. The berth is equipped with sewage port reception facilities.

## Additional information

At all berths where ferries calls, there is possible to dispose sewage.

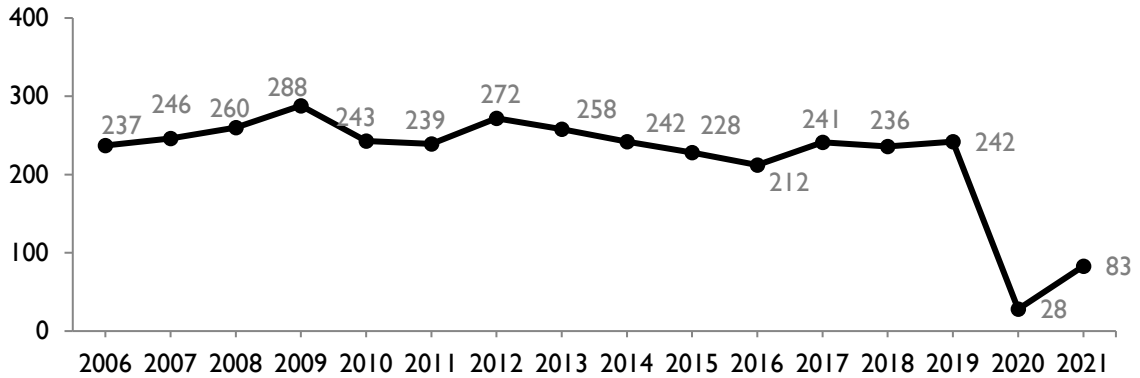




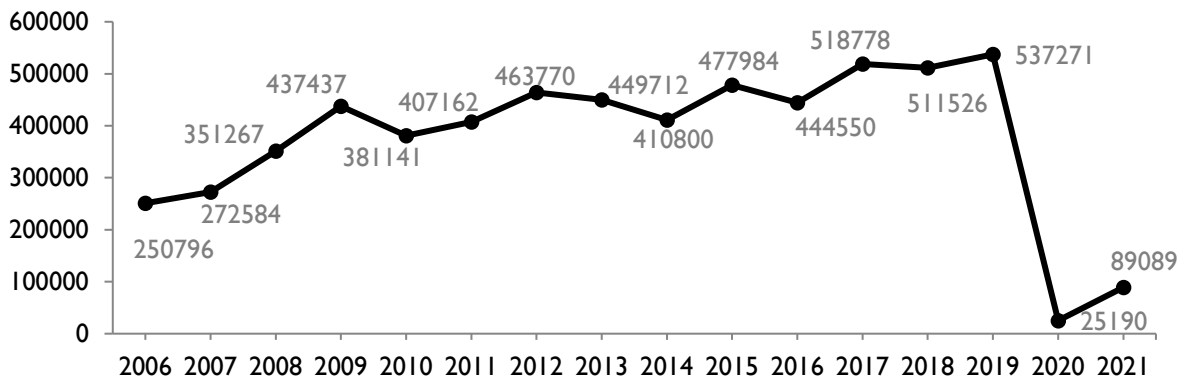
## 2. Passenger traffic trends in Stockholm

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

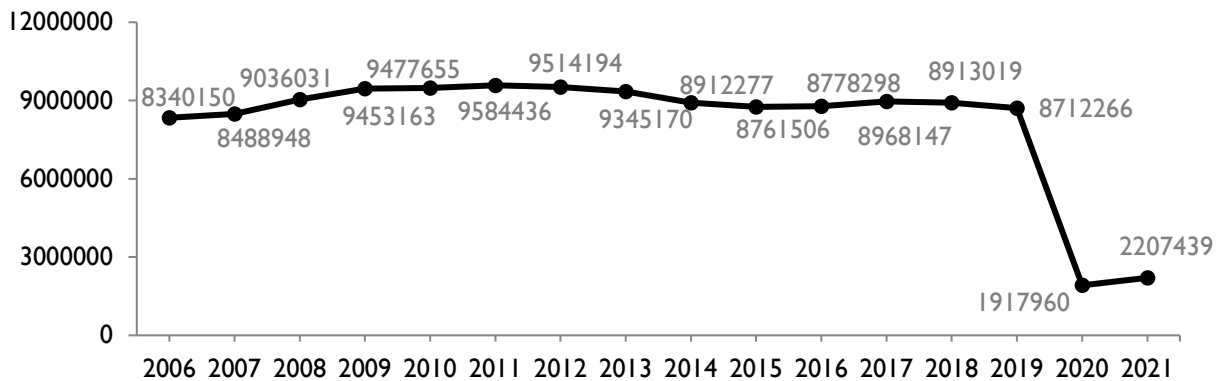
Cruise ships calls:



Cruise ships passengers:



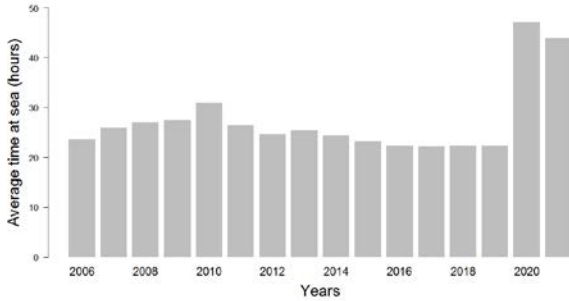
International cruise and ferry passengers:



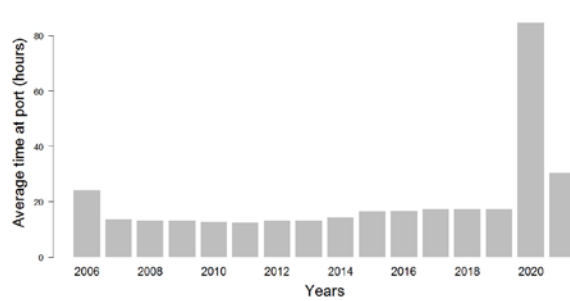
### 3. Cruise ship visits in Stockholm

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

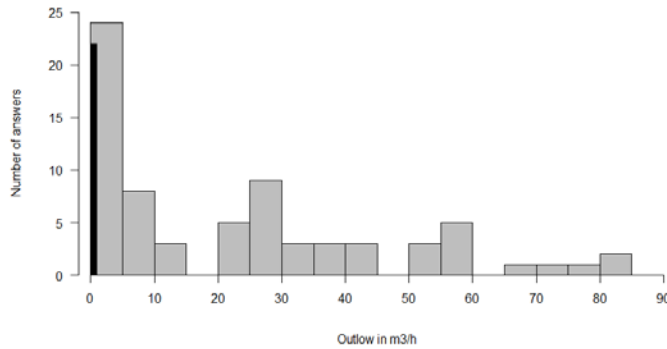


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges



#### 3.4. Comments from cruise ships on port facilities (2014)

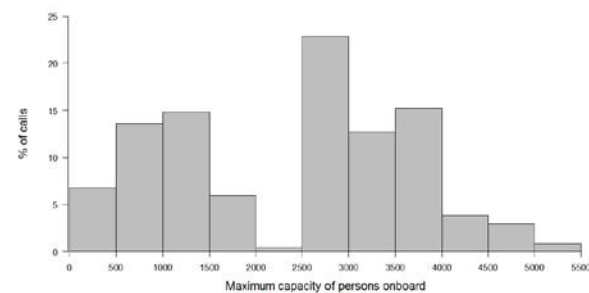
The distance to PRF depends on which side and berth the ship berths. The distance to the PRF can generate back pressure due to the length of the hose which reduces the discharge flow rate. The discharge can take time because the pumping rate is too low.

#### Comments from ports on cruise ship visits (2014)

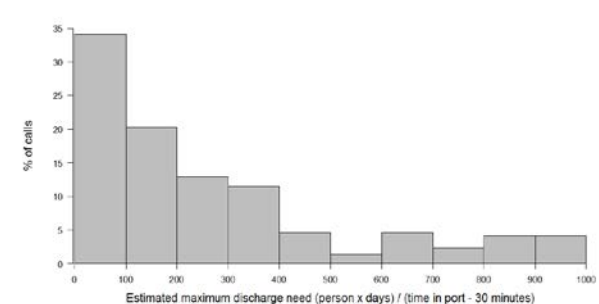
Vessels normally deliver with flow rates 60 -100 m<sup>3</sup> /h which during an average stay of 8 hours is enough. No need for stipulated 300 m<sup>3</sup>/h.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>/h<sup>1</sup>. More information is available in the Annex I.

# Stralsund (Germany)

<http://www.seehafen-stralsund.de/> UN LOCODE: DESTL

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

- Mobile PRF are operated exclusively, therefore availability is given on all berths at the port (berths 01 to 36).
- Capacity varies because of different operated mobile disposal cars.
- Prior request is necessary: 24 hours before arrival.
- No limitations or special requirements regarding the sewage quality.
- No special fee up to 1.5 m<sup>3</sup> per call; more than 1.5 m<sup>3</sup> special fee will be charged.

## Planned improvements

Reconstruction of berths for passengers is planned, one option is the installation of fixed PRF (pending at the moment).

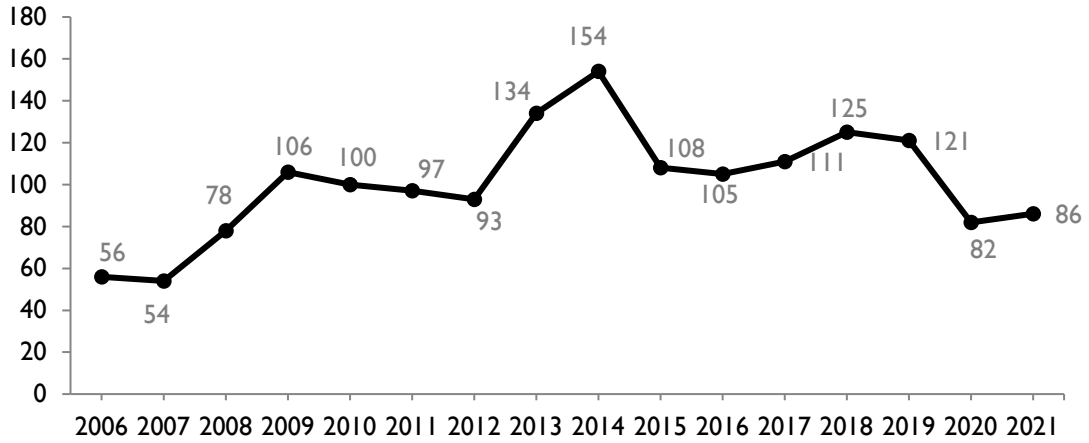
## Additional information

-

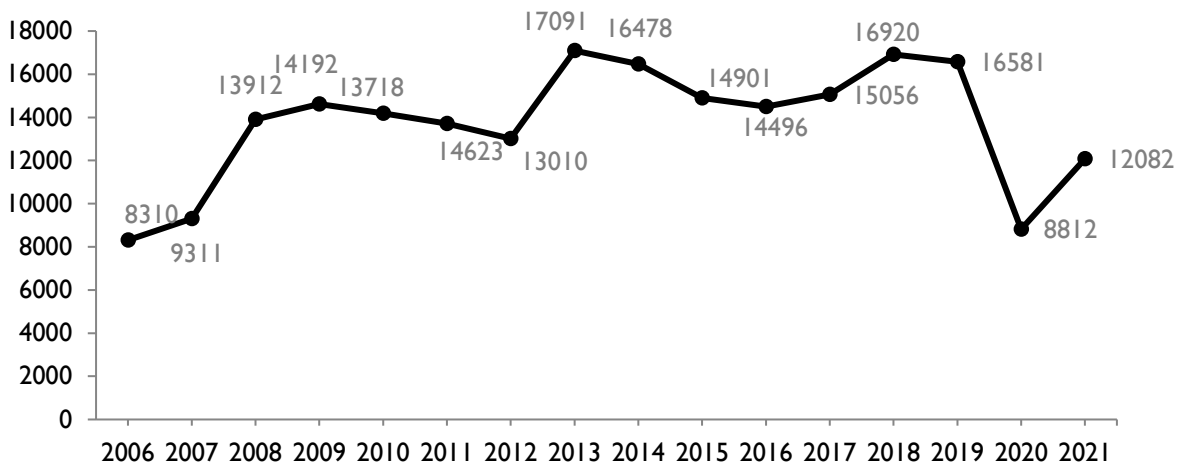
## 2. Passenger traffic trends in Stralsund

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

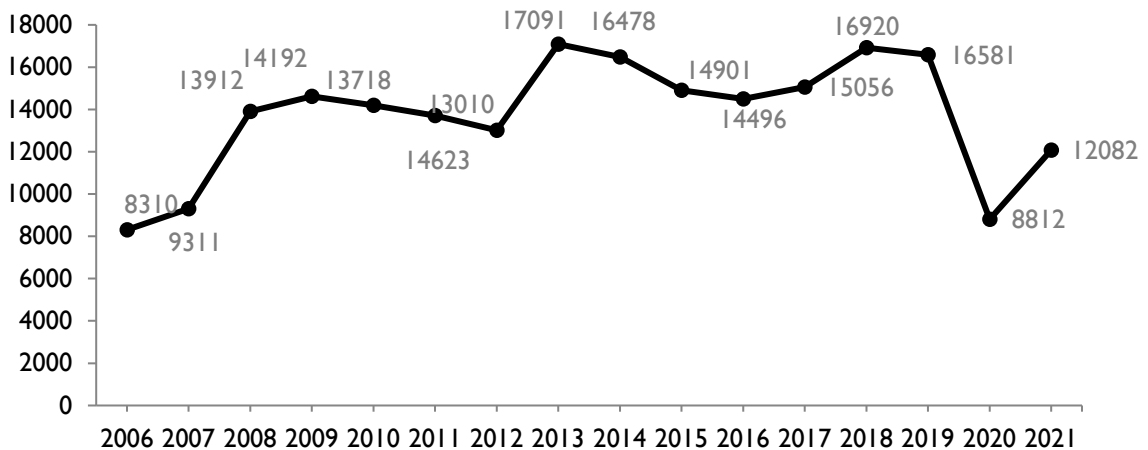
Cruise ships calls:



Cruise ships passengers:



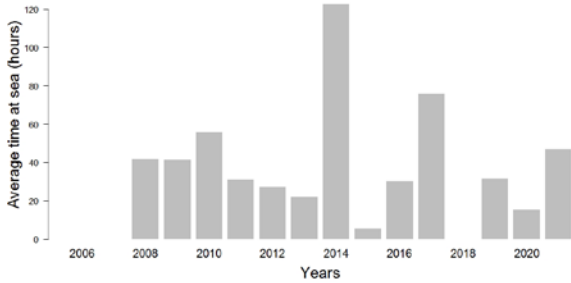
International cruise and ferry passengers:



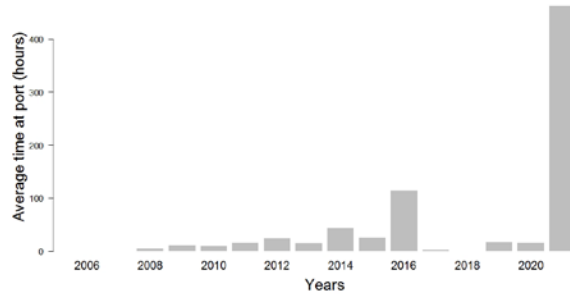
### 3. Cruise ship visits in Stralsund

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

Time at sea from previous port	10
Time spent at port during the call	10
Maximum number of persons onboard	372

Only 1 call was reported during the joint HELCOM-CLIA survey.

#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>

Estimated theoretical maximum discharge need<sup>1</sup> 20,2

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Szczecin, including Świnoujście (Poland)

<https://www.port.szczecin.pl> <http://www.sft.pl> UN LOCODE: PLSZZ

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

Reception of sewage from cruise ships or ferries is currently carried by the tank trucks which transport sewage to municipal WWTP (15 tank trucks with capacities: 7,5 m<sup>3</sup>, 12 m<sup>3</sup>, 12 m<sup>3</sup>, 12 m<sup>3</sup>, 13,5 m<sup>3</sup>, 15 m<sup>3</sup>, 15,2 m<sup>3</sup>, 15,2 m<sup>3</sup>, 15,2 m<sup>3</sup>, 15,2 m<sup>3</sup>, 18 m<sup>3</sup>, 20 m<sup>3</sup>, 20 m<sup>3</sup>, 20 m<sup>3</sup>, 29,1 m<sup>3</sup>). Sewage reception is also possible from the water side with 2 barges of capacity of 50 m<sup>3</sup> each. More trucks or tanks for sewage as well as barges with larger capacities can also be arranged by the port if needed.

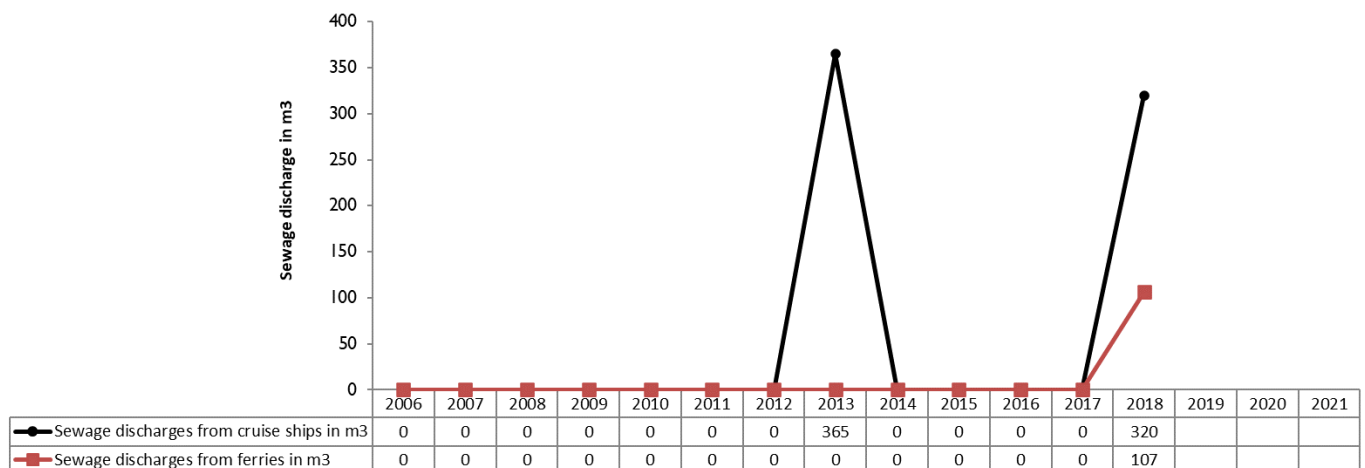
In 2018 one cruise ship delivered sewage at the Port of Szczecin.

## Planned improvements

-

## Additional information

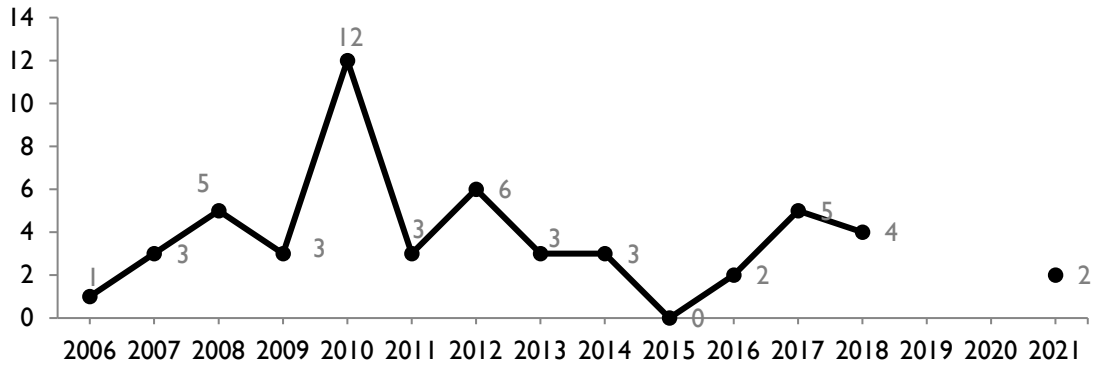
No information available.



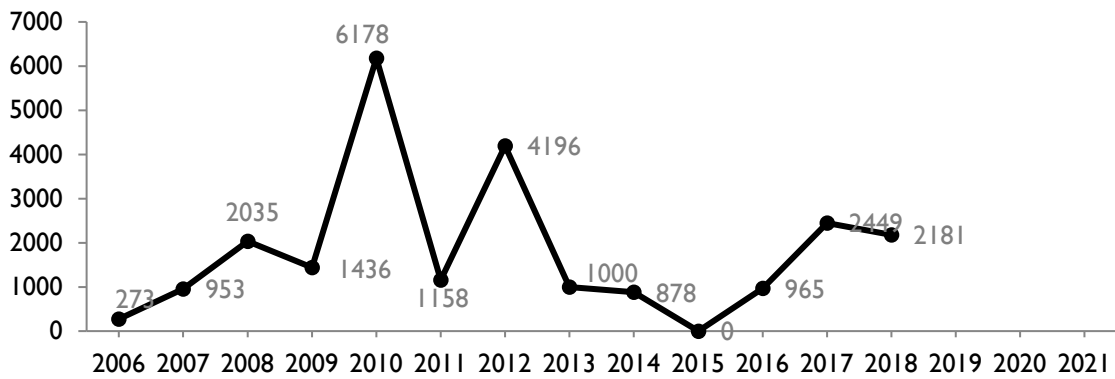
## 2. Passenger traffic trends in Szczecin, including Świnoujście

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

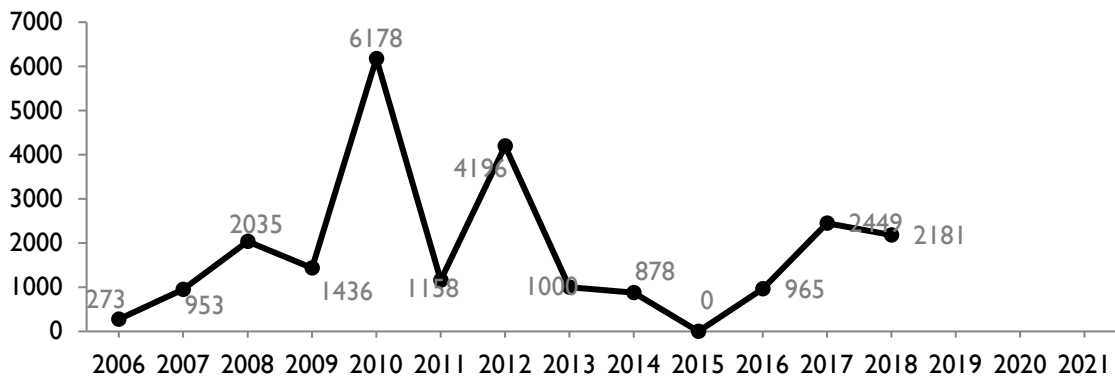
Cruise ships calls:



Cruise ships passengers:



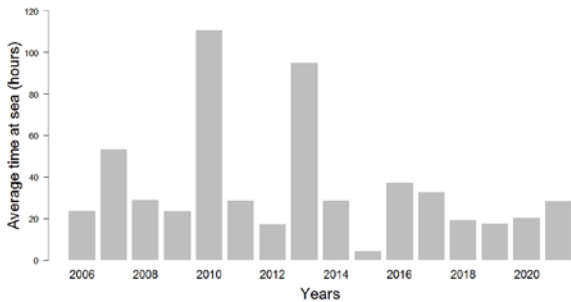
International cruise and ferry passengers:



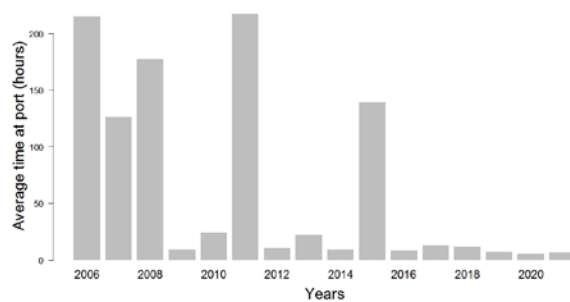
### 3. Cruise ship visits in Szczecin, including Świnoujście

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

In 2017 fixed route ferry lines have delivered 76,6 m<sup>3</sup> sewage at the port of Świnoujście.

Total quantity from cruise ships and ferry passengers:

- In 2019 – 540,5 m<sup>3</sup>;
- In 2020 – 200,5 m<sup>3</sup>;
- In 2021 – 3486 m<sup>3</sup>

#### 3.4. Comments from cruise ships on port facilities (2014)

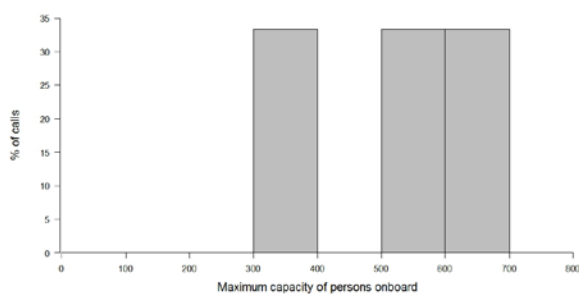
No information available.

#### Comments from ports on cruise ship visits (2017)

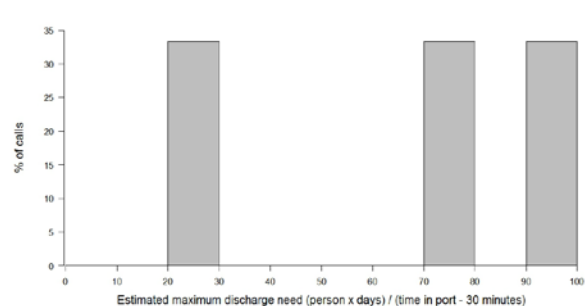
In 2017 there were 5 cruise ships calls in Port of Szczecin. The cruise ships have not delivered any sewage at the ports. Port of Świnoujście operates 12 fixed route ferry lines.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>




<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.



# Tallinn (Estonia)

<http://www.portoftallinn.com> UN LOCODE: EETLL

There are fixed sewage PRF in all berths for international cruise ships.

 Berth used by cruise ships.



## I. Sewage Port Reception Facilities

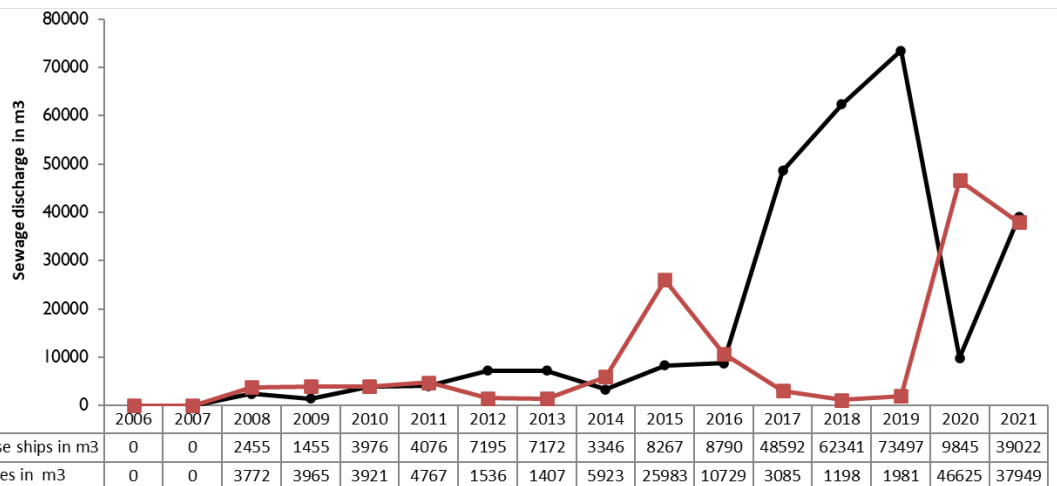
- Number of berths and information on which berths do PRF availability – 6 berths
- Capacity of PRF – up to 200 m<sup>3</sup>/h
- Fixed PRF
- The pollutant concentration values in the discharged sewage shall not exceed the limit values set by the local water undertaking
- The ship has to state that:
  - Black- or greywater pumped ashore does not contain contamination of other waste or products such as oily waste, chemicals or other substances that can be harmful to sewage treatment plants;
  - Prior to pumping blackwater ashore, the ship mixes the pumped blackwater and graywater in a ratio of 1:5 or, if there is no technical capability on board, the ship will first pump the blackwater and then the graywater in a ratio of 1 : 5;
  - Hose flushing shall be done from ship side.
- Undiluted blackwater and sewage sludge (bio-residuals) shall not be pumped into sewerage system, but shall be transferred to a tank vehicle
- Fee structure - no-special-fee.

## Planned improvements

-

## Additional information

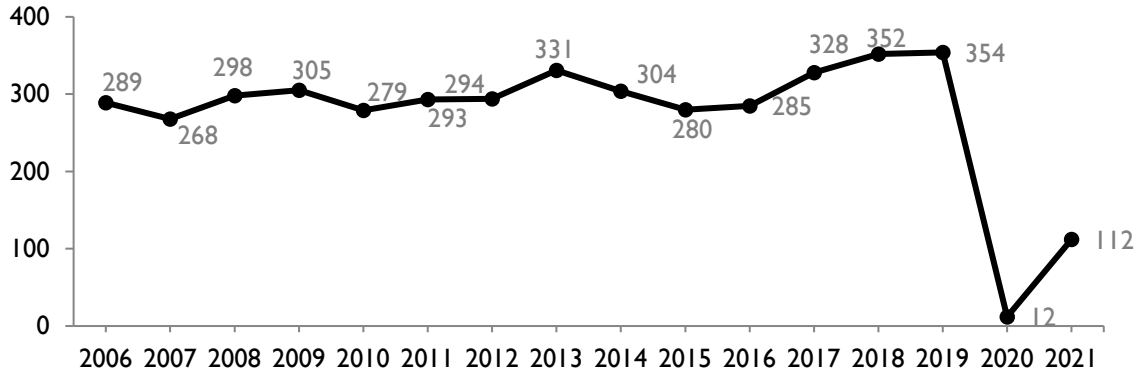
Ship waste reception and handling plan is available here: <https://www.ts.ee/en/rules-rates/>



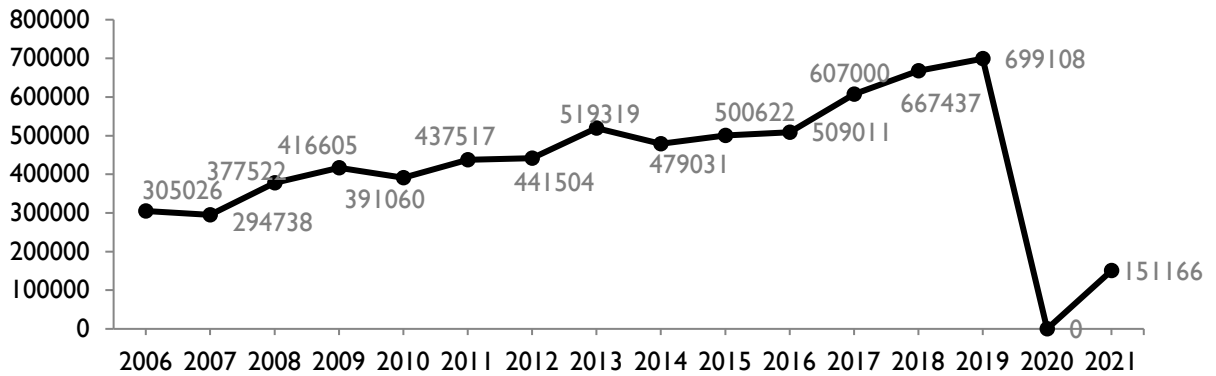
## 2. Passenger traffic trends in Tallinn

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

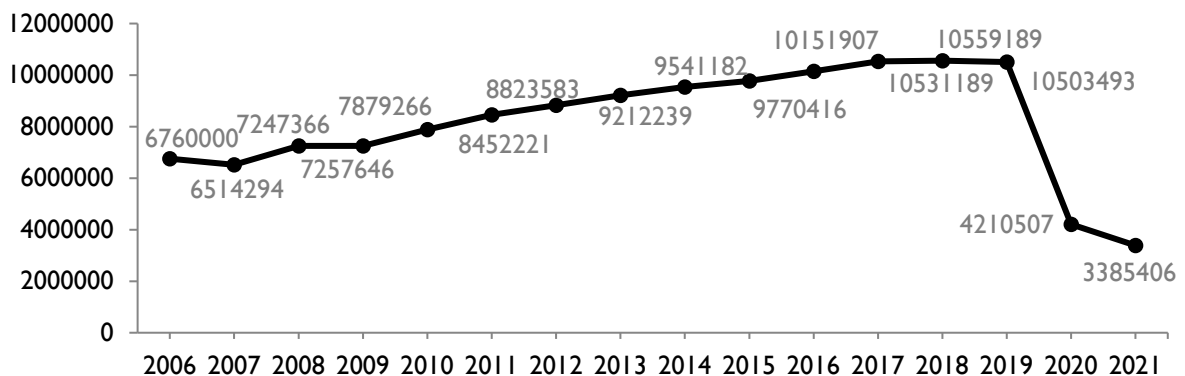
Cruise ships calls:



Cruise ships passengers:



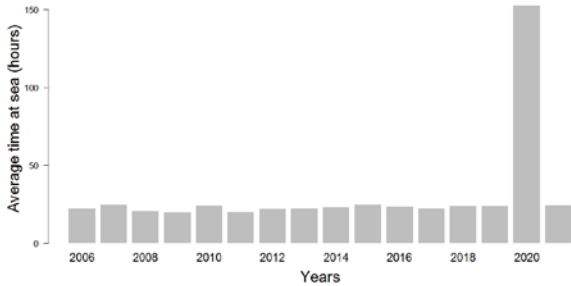
International cruise and ferry passengers:



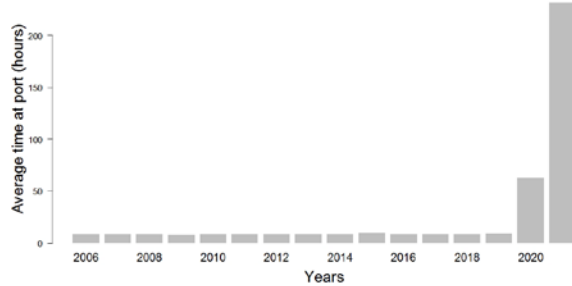
### 3. Cruise ship visits in Tallinn

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port

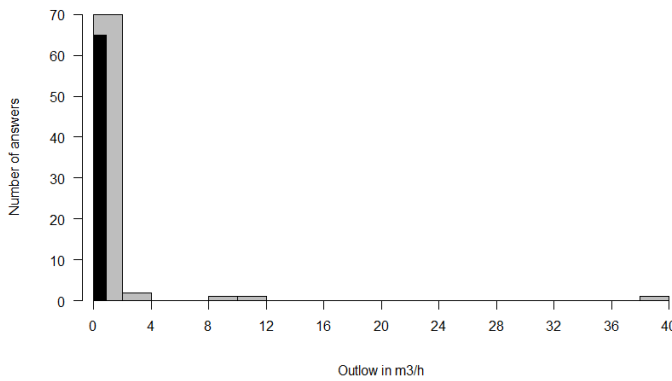


#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

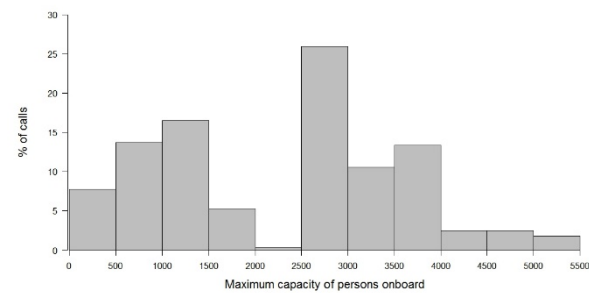


#### 3.4. Comments from cruise ships on port facilities (2014)

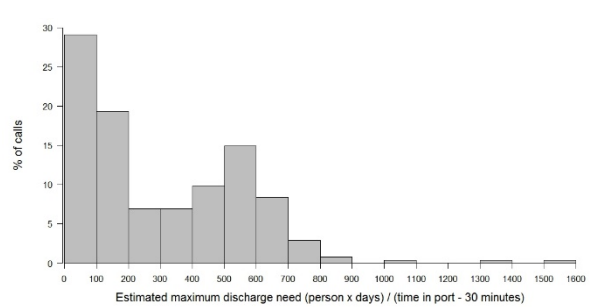
The transfer of 7m³ is included in the port fee. After this amount, the use of the PRF for sewage is not free. The tank trucks have a small capacity (12m³)."

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m³ sewage per person per day would give you the estimated total discharge need in m³·h<sup>-1</sup>. More information is available in the Annex I.

# Turku (Finland)

<http://www.portofturku.fi> UN LOCODE: FITKU



## 1. Sewage Port Reception Facilities

Grey and black water can be discharged from the vessels directly to the fixed waste water reception facilities in Passenger Harbour, Linnanaukko and West Harbour areas. The vessel must use its own pump for discharging. Fixed reception points are connected to municipal sewer system.

**Passenger Harbour:** Discharge points for fixed route ferry lines are located at berth number VI (used by Viking Line) and berth number S2 (used by Tallink Silja). Capacity is approx. 200 m<sup>3</sup>/h.

**Linnanaukko:** Discharge point is located at berth number 23. Planning capacity of the PRF is approx. 83 m<sup>3</sup>/h. PRF can be used by both cruise and cargo ships.

**West Harbour:** Discharge points are located at berth number 35 and 38. Planning capacity of the PRF is approx. 83 m<sup>3</sup>/h. PRF can be used by both cruise and cargo ships.

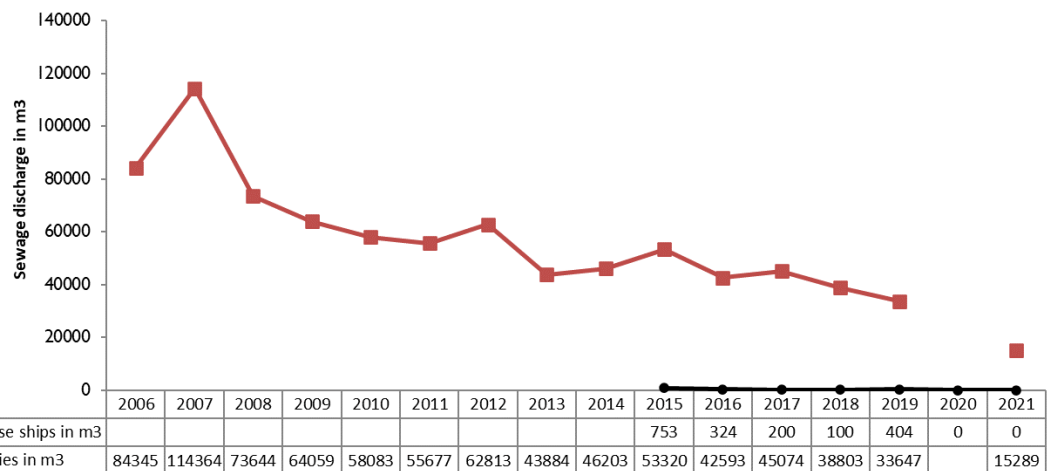
Where fixed waste water reception facilities are not available, the Port can provide tank trucks with a capacity of 24 m<sup>3</sup>/h to collect waste water if needed.

The disposal of sewage in port is included to the waste disposal charges (no-special-fee).

## Planned improvements

No planned improvements related sewage reception facilities.

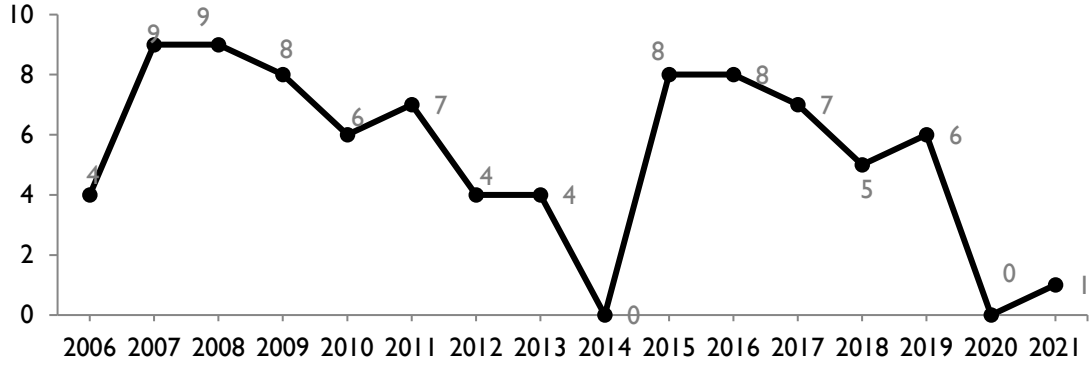
## Additional information



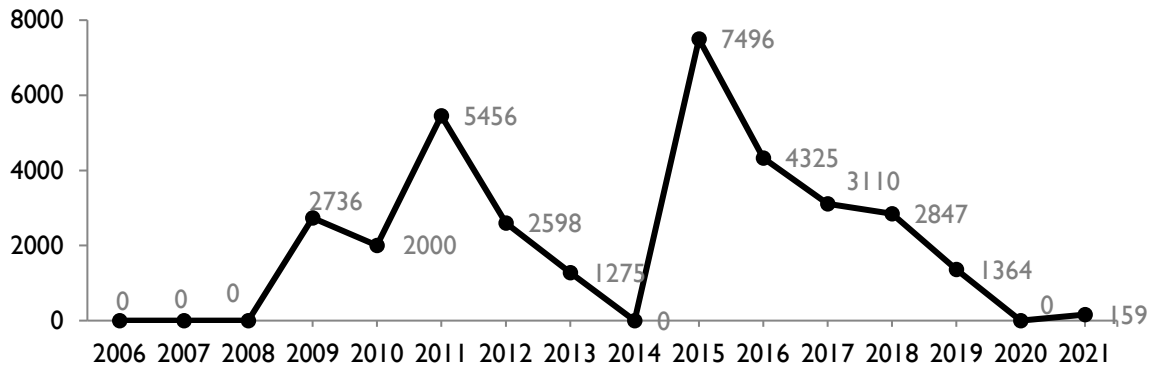
## 2. Passenger traffic trends in Turku

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

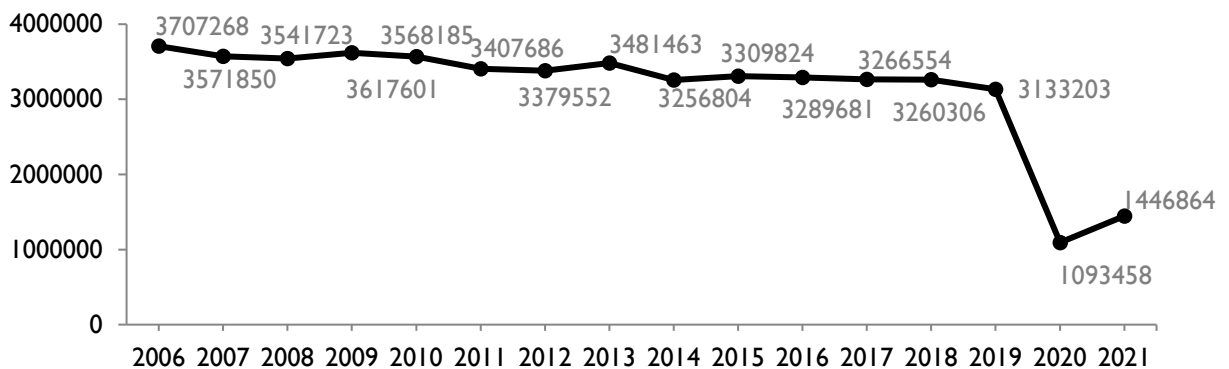
Cruise ships calls:



Cruise ships passengers:



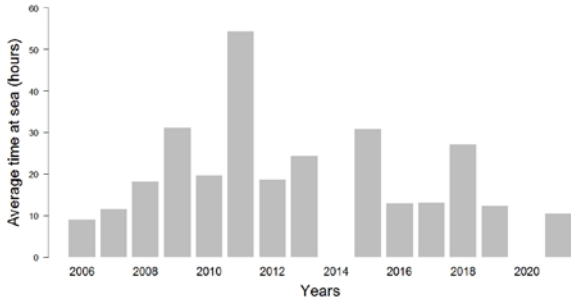
International cruise and ferry passengers:



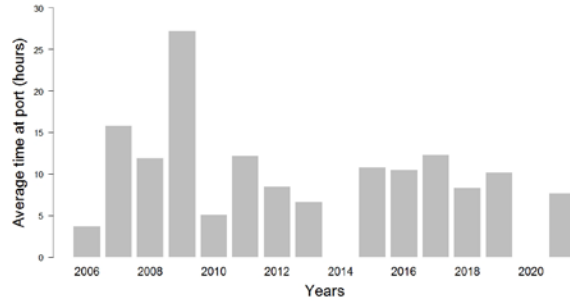
### 3. Cruise ship visits in Turku

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Trelleborg (Sweden)

<http://www.trelleborgshamn.se/> UN LOCODE: SETRG

Fixed Port Reception Facilities for sewage water are available in all berths in the Port of Trelleborg.

## I. Sewage Port Reception Facilities

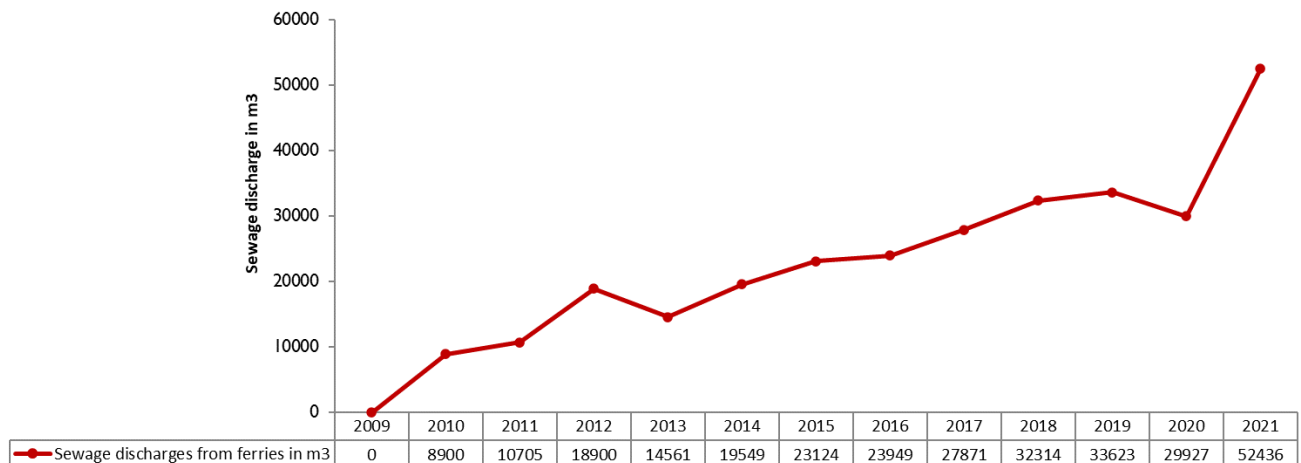
- All berths in the Port of Trelleborg are equipped with port reception facilities.
- The capacity of the PRFs is 90-120 m<sup>3</sup>/h.
- Vessels must submit request to discharge sewage accumulated since the last port call at least 12 hours prior to arrival.
- Sewage must be sampled and results provided to the port upon submitting a request to discharge.

## Planned improvements

The Port of Trelleborg is looking to establish a port treatment facility for sewage.

## Additional information

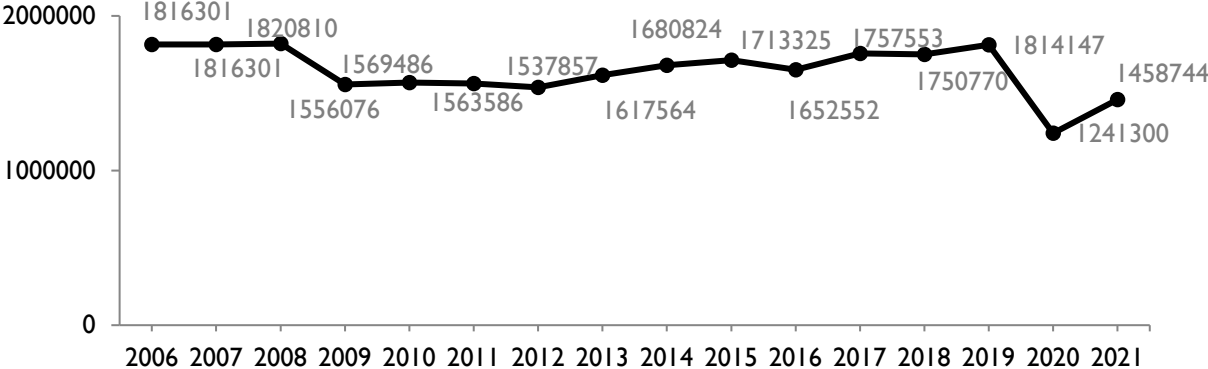
As the sewage received in port is treated at the municipal sewage treatment plant the port is required to submit sampling results for all vessels discharging sewage. For further information on required sampling parameters etc. please contact [jennie.folkunger@port.trelleborg.se](mailto:jennie.folkunger@port.trelleborg.se).



## 2. Passenger traffic trends in Trelleborg

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

International passengers:

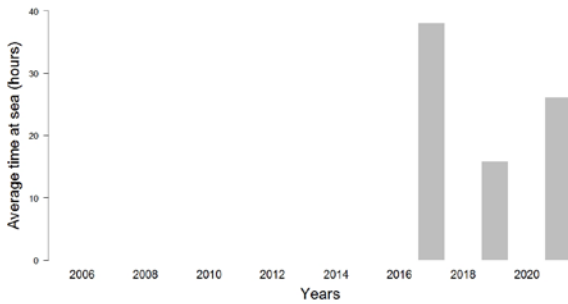




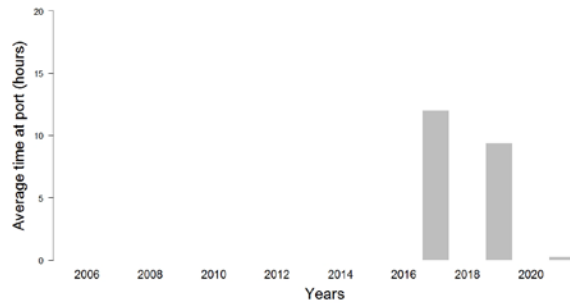
### 3. Cruise ship visits in Trelleborg

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

## Vaasa (Finland)

UN LOCODE: FIVAA



### I. Sewage Port Reception Facilities

-

### Planned improvements

The plan is to evaluate different options in the near future for further develop the sewage reception facilities in Kvarken Ports ltd and Port of Vaasa.

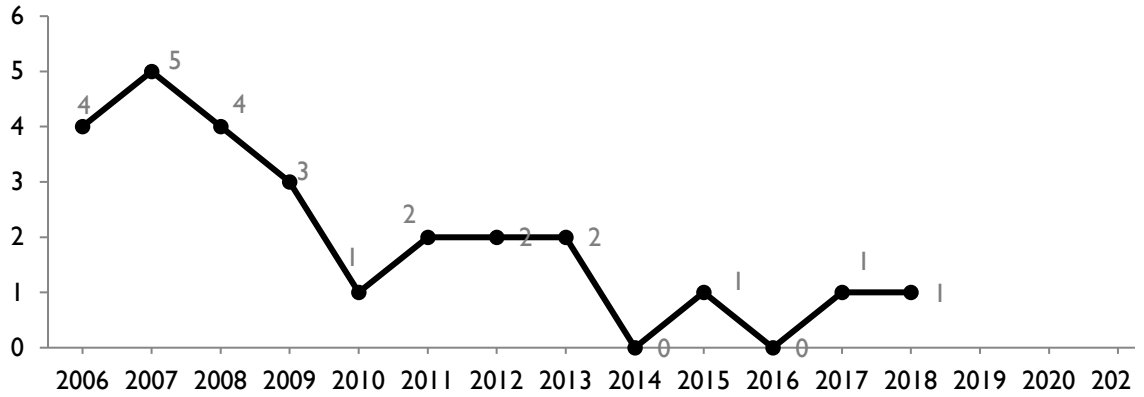
### Additional information

No information available.

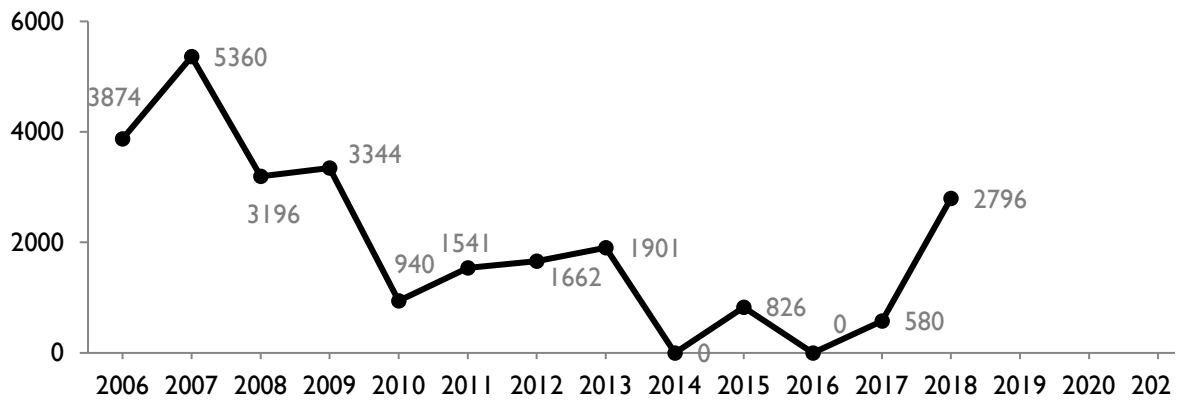
## 2. Passenger traffic trends in Port of Vaasa

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

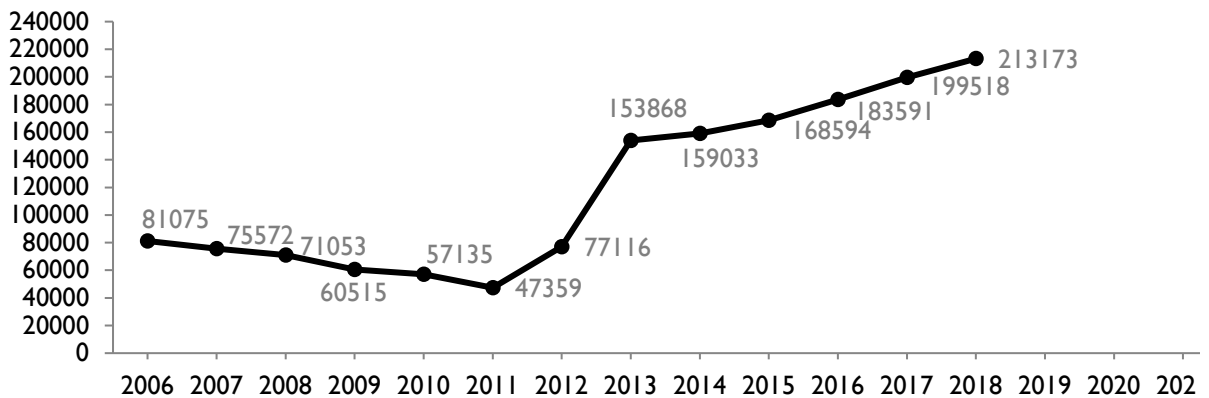
Cruise ships calls:



Cruise ships passengers:



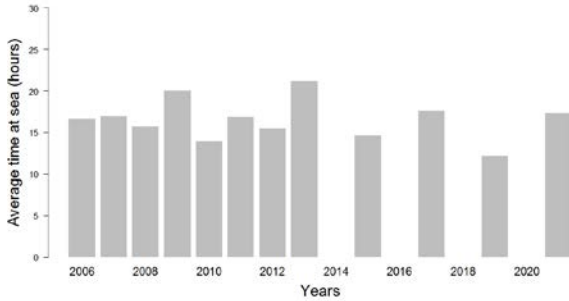
International passengers:



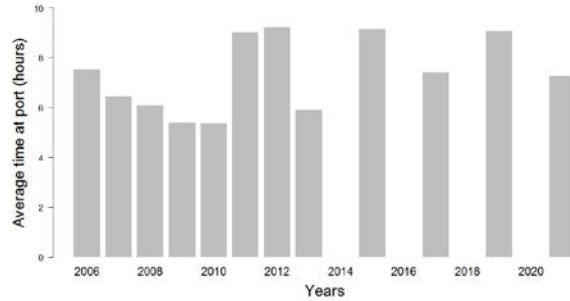
### 3. Cruise ship visits in Vaasa

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>

No information available.

<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Ventspils (Latvia)

<http://www.portofventsipils.lv/> UN LOCODE: LVVNT

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (information from 2019)

One barge with a maximum discharge rate of 70 m<sup>3</sup>/h, maximum quantity of sewage that can be delivered by a ship – 86 m<sup>3</sup>. No direct sewage discharge connection available.

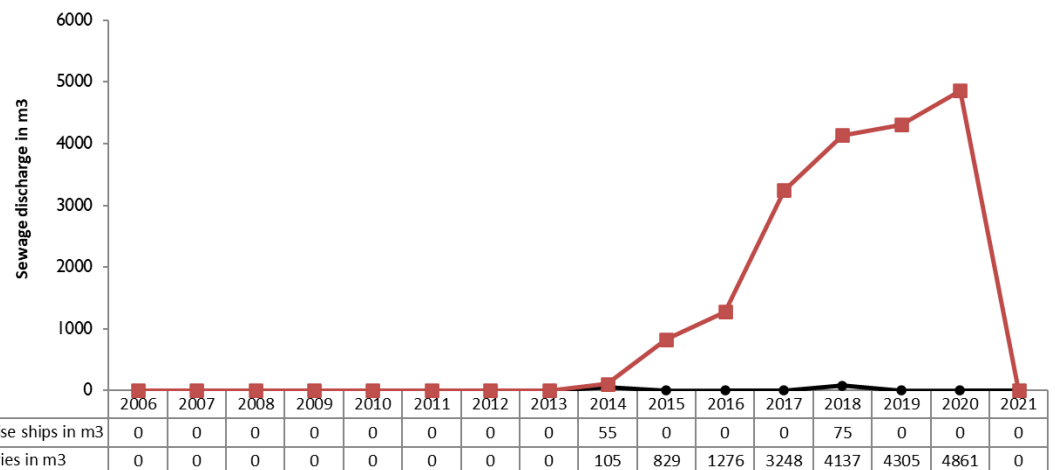
Sewage from ships is delivered and treated in Ventspils municipality wastewater treatment plant. Sewage discharge time at port per call is 2 hours. The time spent at port per call: 4h and 12h.

## Planned improvements

No information available.

## Additional information

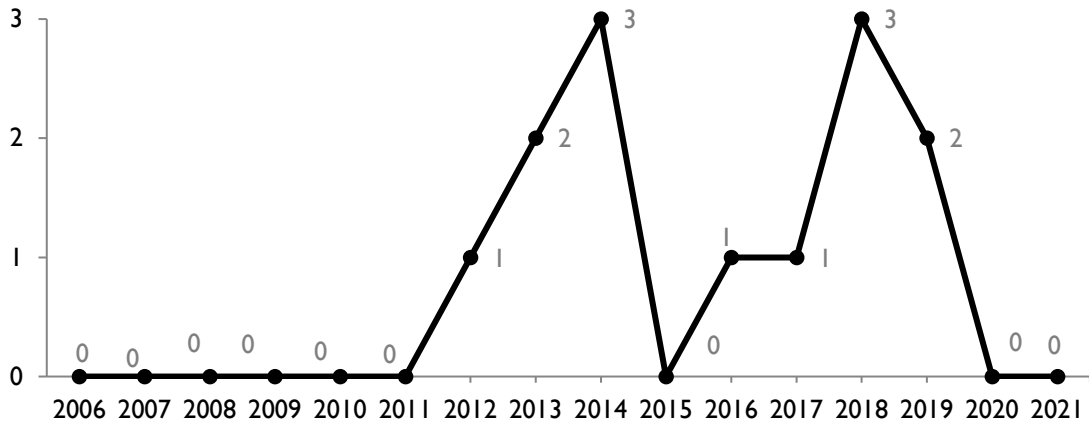
Tank trucks are used. One tank 30m<sup>3</sup>. Barges are also used. One tank 86m<sup>3</sup>. Capacity 20m<sup>3</sup>/h. From trucks and barges sewage are discharged to municipal treatment facilities.



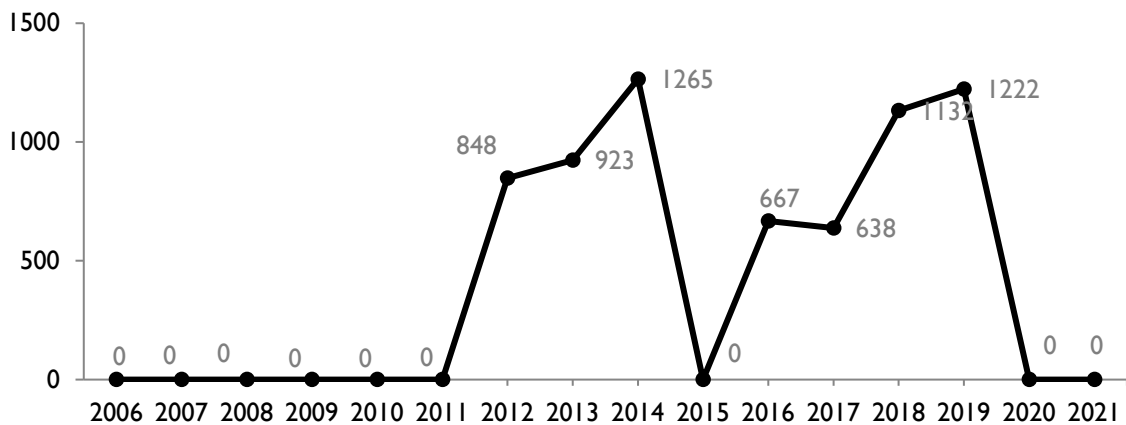
## 2. Passenger traffic trends in Ventspils

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

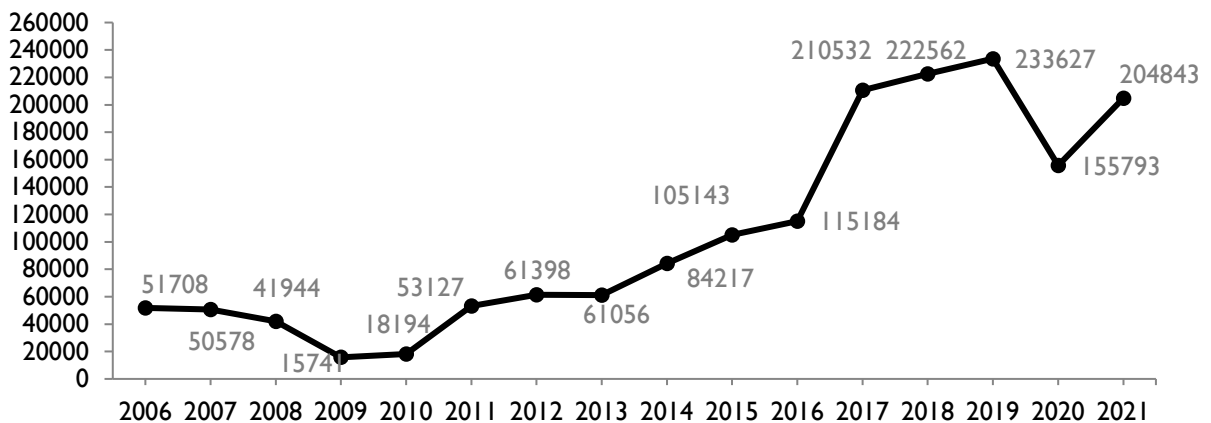
Cruise ships calls:



Cruise ships passengers:



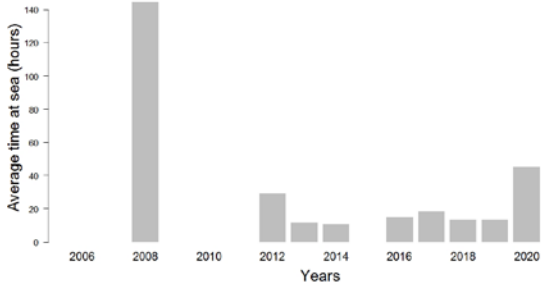
International cruise and ferry passengers:



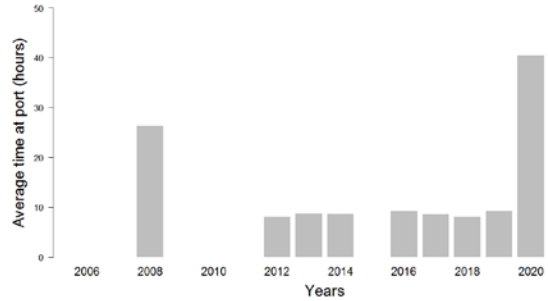
### 3. Cruise ship visits in Ventspils

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

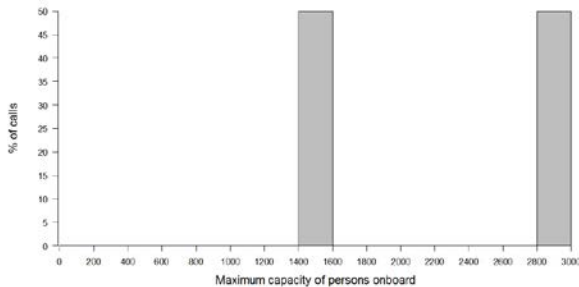
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

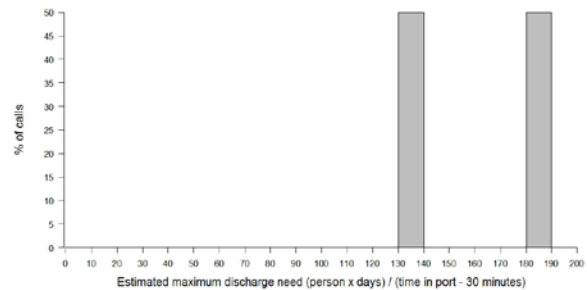
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Visby (Sweden)

<http://www.gotland.se/portofvisby> UN LOCODE: SEVBY

Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities (from 2019)

At all the main berths (4, 5, 6, 7), PRF facilities connected to the municipal sewage system are available with a capacity of ca 16-20 m<sup>3</sup> per hour. The new quay for cruise ships (berth 14 & 15) has the capacity to receive 300 m<sup>3</sup> per hour.

General waste fee of 0,40 SEK/GT, included in the vessel fee.

There is no statistics on all international passengers but regular ferry traffic to Oskarshamn and Nynäshamn carries around 1 500 000 passengers/ year (they use berth 5 and 6, the cruise ships 4 and 7).

## Planned improvements

No planned improvements.

## Additional information

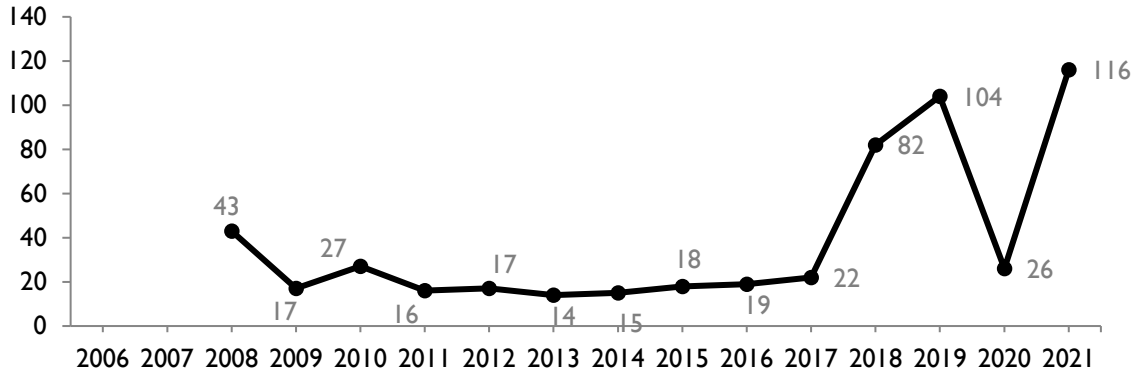
Visby was listed as having adequate PRF for sewage in the 2010 HELCOM Roadmap for upgrading PRF for sewage in passenger ports of the Baltic Sea area.



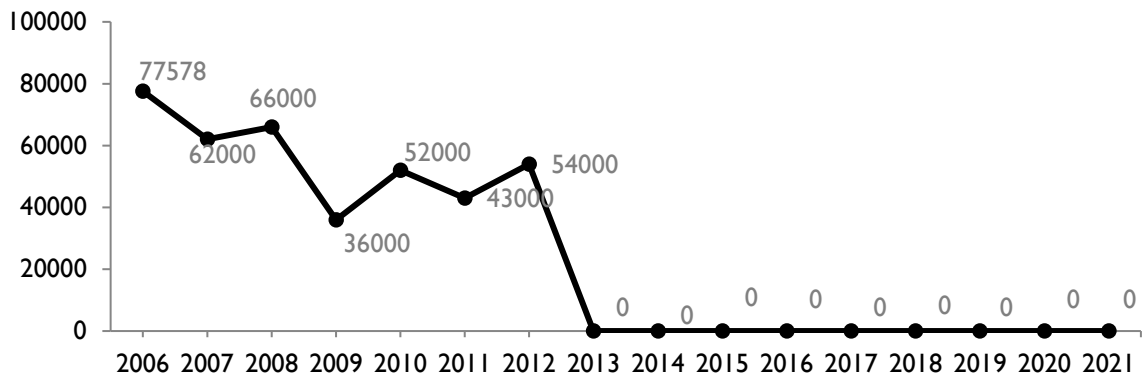
## 2. Passenger traffic trends in Visby

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

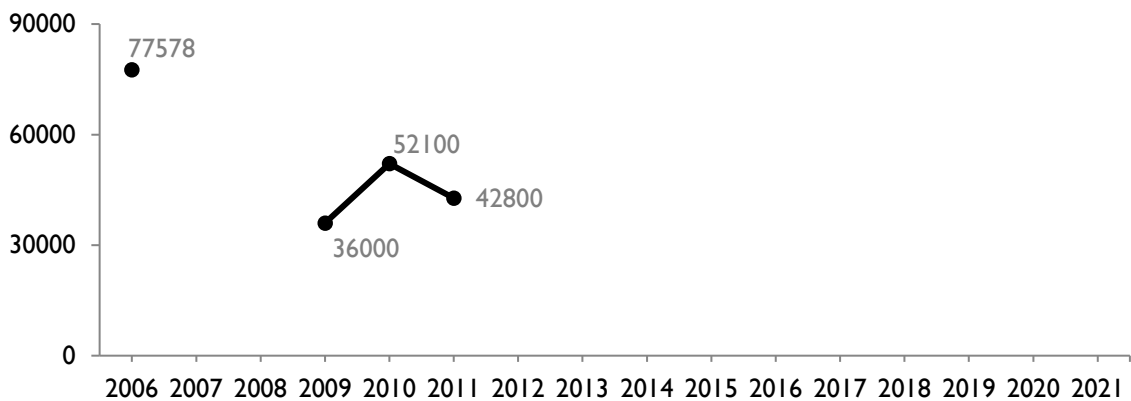
Cruise ships calls:



Cruise ships passengers:



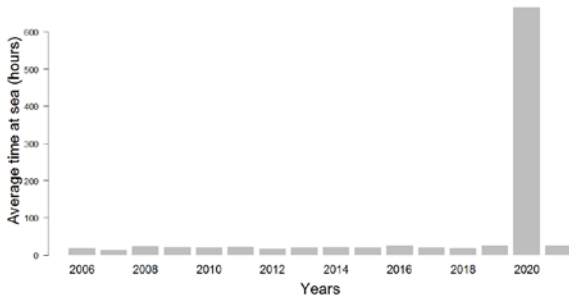
International cruise and ferry passengers:



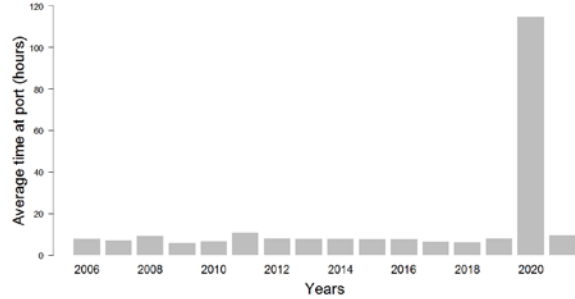
### 3. Cruise ship visits in Visby

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

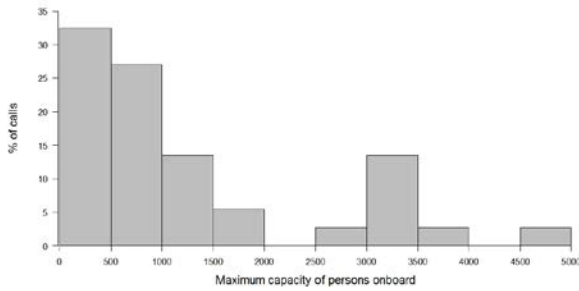
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

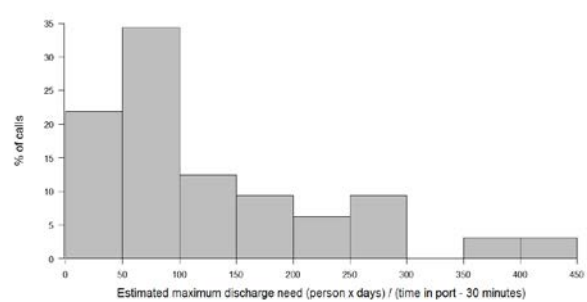
Several ships were at anchor when visiting Visby. None of them discharged sewage to the port.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew




#### 3.6. Estimated theoretical max. discharge need <sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>·h<sup>-1</sup>. More information is available in the Annex I.

# Wismar (Germany)

<http://www.hafen-wismar.de/> UN LOCODE: DEWIS All berths are available for the ships.

 Berth used by cruise ships according to AIS data during April - October 2014



## I. Sewage Port Reception Facilities

The Port Administration or the shipping agent has contract with the operator which collects sewage from ships by trucks. That is why sewage PRF are available on all berths. The ship needs to notify the port 24h in advance, if they need sewage PRF. Two m<sup>3</sup> are free of charge, after that additional amounts are charged.

## Planned improvements

Current waste reception facilities are sufficient to ensure arriving ship waste reception needs.

## Additional information

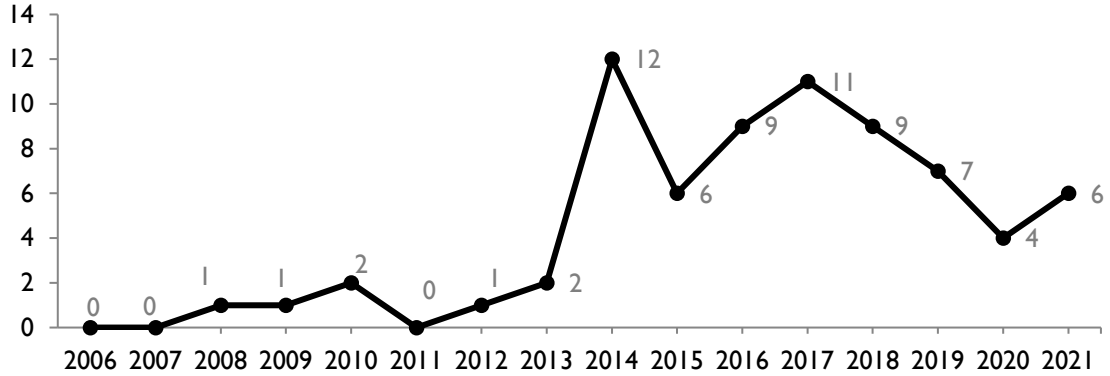
The ships need to meet following regulations:

- standardized connection flange (MARPOL I, ANNEX I9)
- the ships need to pump the waste by itself
  - >the output should be:
    - under 500 GRT: at least 1 m<sup>3</sup>/hour
    - over 500 GRT: 2 at least m<sup>3</sup>/hour

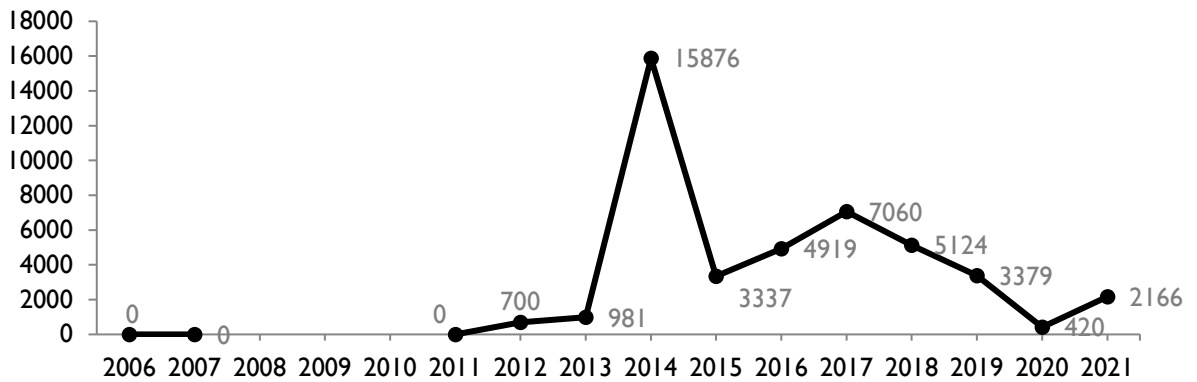
## 2. Passenger traffic trends in Wismar

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication "Baltic Port List" and the Nordic Council of Ministers.

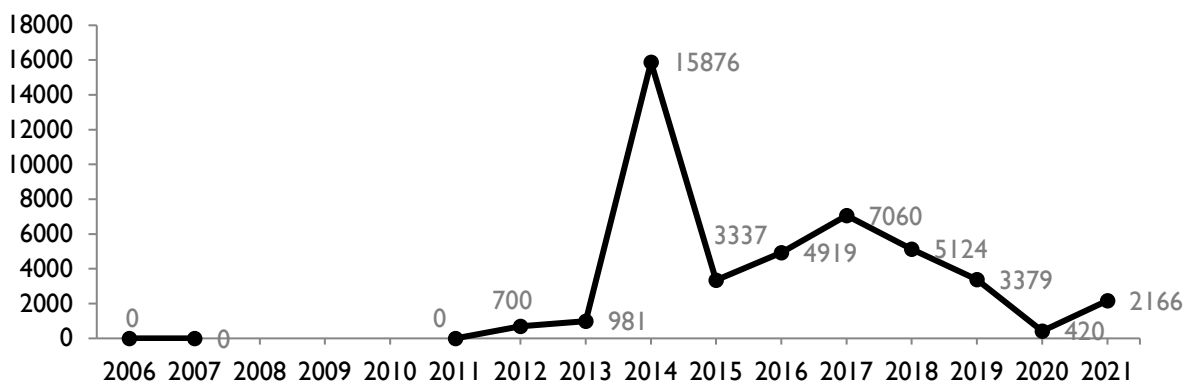
Cruise ships calls:



Cruise ships passengers:



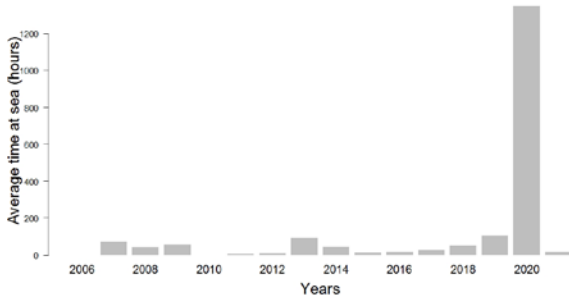
International cruise and ferry passengers:



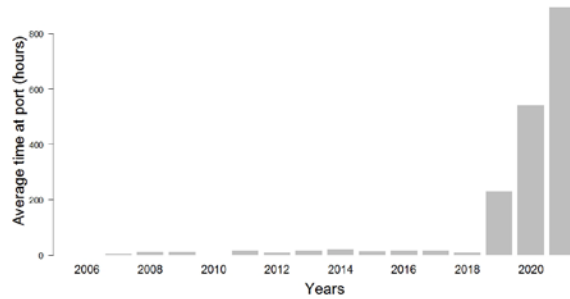
### 3. Cruise ship visits in Wismar

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

#### 3.1. Time at sea from previous port



#### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

#### 3.3. Sewage discharges

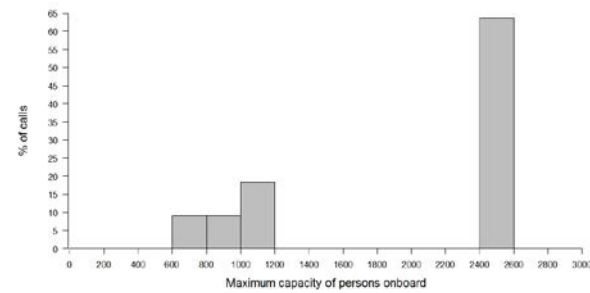
No information available.

#### 3.4. Comments from cruise ships on port facilities (2014)

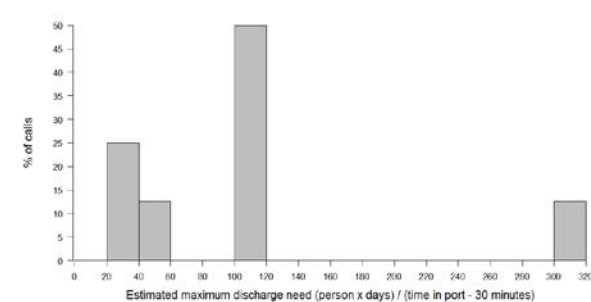
No information available.

#### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew



#### 3.6. Estimated theoretical max. discharge need<sup>1</sup>



<sup>1</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.

# Ystad (Sweden)

UN LOCODE: SEKPS

(map to be added)

## I. Sewage Port Reception Facilities

There were 751 m<sup>3</sup> and 16748 m<sup>3</sup> sewage discharges from ferries in 2020 and 2021, respectively. In 2021, there were 1512 m<sup>3</sup> sewage discharges from cruise ships.

## Planned improvements

No information available.

## Additional information

No information available.

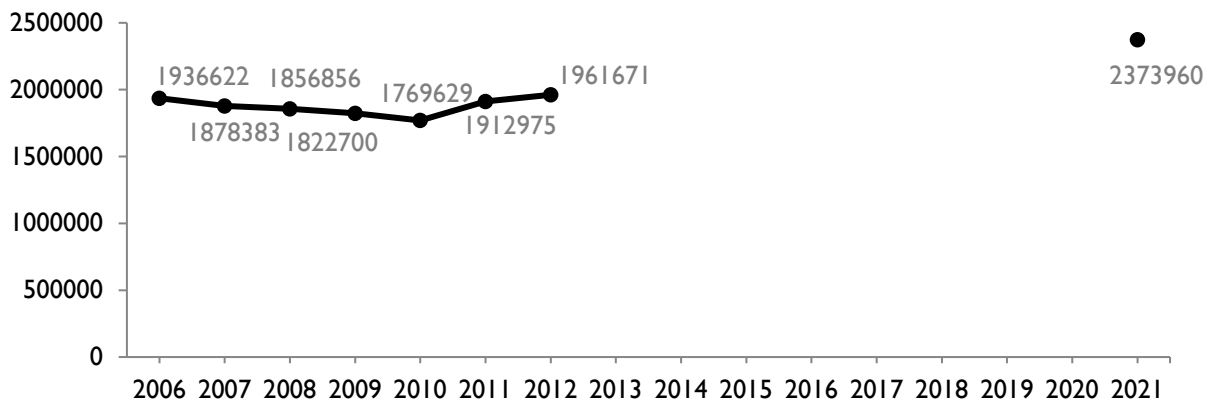
## 2. Passenger traffic trends in Port of Ystad

A compilation based on statistics from the Baltic Sea coastal countries national Administrations, regional ports organizations (BPO, ESPO), the publication “Baltic Port List” and the Nordic Council of Ministers.

Cruise ships calls : there were 10 calls in 2021.

Cruise ships passengers: there were 22116 calls in 2021.

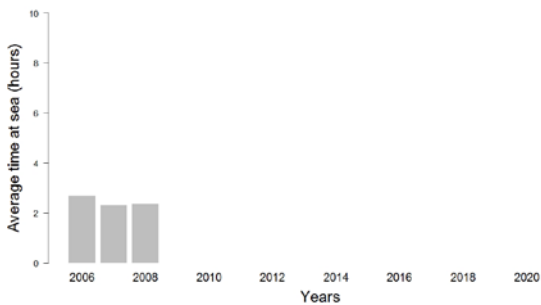
International passengers



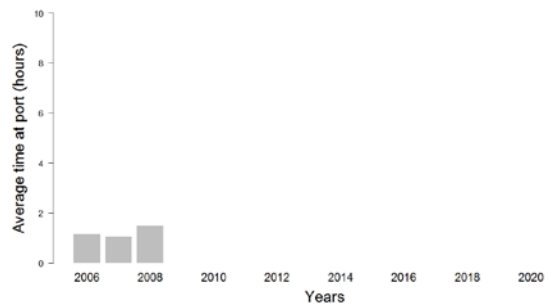
## 3. Cruise ship visits in Ystad

The figures 3.1 and 3.2 are generated from the HELCOM AIS data. The dataset covers the period from 2006 to 2021.

### 3.1. Time at sea from previous port



### 3.2. Time spent at port per call



The figure 3.3 shows discharges reported by cruise industry. The black bar shows the number of ships that did not use the sewage PRF for sewage even if available. It is based on information from 29 CLIA-affiliated cruise ships, received by HELCOM Secretariat as a reply to a joint HELCOM –CLIA survey. The dataset covers the whole cruising season (April to October 2014).

### 3.3. Sewage discharges

No information available.

### 3.4. Comments from cruise ships on port facilities (2014)

No information available.

### 3.5. Maximum number of persons on board per call

Maximum capacity of persons onboard including passengers and crew

No information available.

### 3.6. Estimated theoretical max. discharge need <sup>43</sup>

No information available.

---

<sup>43</sup> Estimated total discharge capacity needs of cruise ship calls during summer 2014, assuming all wastewater generated after leaving last port of call will be discharged in the port. The presented figures are based the following calculation:  $\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port - 30 minutes)}}$ . Multiplying this figure with a waste water production estimation in m<sup>3</sup> sewage per person per day would give you the estimated total discharge need in m<sup>3</sup>h<sup>-1</sup>. More information is available in the Annex I.



# Annex I - Estimated maximum theoretical discharge need of cruise ships

## Estimated maximum theoretical discharge need of cruise ships

This report provides estimated port-wise maximum theoretical sewage discharge needs of cruise ship calls. This is useful to have an overview of the needs of cruise ships in terms of sewage PRFs when MARPOL Annex IV special area is enforced in the Baltic Sea region.

Such a theoretical discharge need of cruise ship calls can be estimated by calculating person × days from previous port in the Baltic Sea. This figure can be divided by time (in hours) at berth in current port to estimate the capacity need per hour at berth. For such estimates one needs to know the time from previous port, the maximum number of passengers and crew on board and time spent at berth:

$$\frac{\text{Days at sea (days from previous port)} \times \text{Persons (maximum capacity of ship)}}{\text{Time (hours spent at port – 30 minutes)}}$$

## Assumptions

It should be noted that the above estimation assumes:

### *Completely full ships*

Cruise ships are always filled to 100% capacity both in terms of passengers and crew.

### *Sewage discharge time = berth time – 30 minutes*

Thirty minutes were deducted from total berth time to give the available time for sewage PRF discharges, in order to account for arrival and departure preparations.

### *100% sewage discharged to port*

The calculations assume the ships will discharge all their sewage, both black and grey, to the port.

### *No route planning*

No route planning, such as doing more stops to avoid long legs or extending the time in port to accommodate for sewage discharge, is assumed.

### *Short technical visits not included*

Port calls less than five hours were not used for sewage discharge need calculations. Short calls have been assumed to be technical stops (e.g. refueling), not regular cruise visits.

## Discharge needs in m<sup>3</sup>/h

In order to use the above calculated values to get estimations of theoretical discharge needs of cruise ships in volume per time unit, such as m<sup>3</sup> of sewage/hour, one needs to have an estimation of the generation of sewage per person per travelled day.

This is less straightforward as such estimates of sewage generation on board a ship depend on various factors including the technology used on board a given ship (e.g. vacuum or gravitation toilets or the waste water treatment system in use) (Huhta *et al.*, 2007).

For instance, on board the overnight ferries between Helsinki and Stockholm in the Baltic Sea the total sewage generation has been observed as around 0,1 m<sup>3</sup> sewage per person per day.<sup>2</sup> The results of the HELCOM-CLIA

survey results indicate an average calculated total production of sewage around 0,17 m<sup>3</sup> sewage per person per day. The Port of Copenhagen considers sewage volumes exceeding 0,13 m<sup>3</sup> per person per travelled day from previous port as disproportionately large.

Due to the large variation of such sewage production estimations this report does not include ready calculated figures of discharge needs in m<sup>3</sup>/hour.

Instead, the estimations are presented as a value which gives the reader estimated total discharge need in volume per time unit, if multiplied with a sewage generation estimation of choice such as those listed above.

## References

HELCOM (2018): HELCOM Assessment on maritime activities in the Baltic Sea 2018. Baltic Sea Environment Proceedings No.152. Helsinki Commission, Helsinki. 253pp.

(URL: <http://www.helcom.fi/Lists/Publications/BSEP152.pdf>)

Huhta, H-K, Rytönen, J., & Sassi, J. (2007): Estimated Nutrient Load from Waste Waters Originating from Ships in the Baltic Sea area. 58 Pp. ISBN 978-951-38-6899-4 (URL: <https://www.vtt.fi/inf/pdf/tiedotteet/2007/T2370.pdf>).

VTT