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## **8 RECREATION AND TOURISM ON THE BEACH**

### **8.1 DESCRIPTION**

The Belgian beaches attract many tourists and offer a lot of possibilities for recreational activities (playing, sun bathing, swimming, dynamic water sports ... etc). This can be explained by the typical characteristics of the Belgian beaches:

- composed of mainly fine-grained sand
- usually interrupted by groins
- beaches are rather broad compared to other North Sea coasts
- softly sloping transition from shallow to deep water
- presence of rather large waves

The West coast (De Panne, Koksijde and Oostduinkerke) is characterized by very broad beaches, which are not interrupted by groins. Due to this characteristics and the permanent wind, the intensity of land yachting and speed sailing is much higher than on other beaches.

Tourists especially appreciate the fact that the different beaches are connected to each other, as this makes long walks possible (Westtoer 2002).

The coastal area is already one of the most famous and important tourist locations in Belgium, and the tourist-recreational use of this area is continuously getting more intense (PSEP 2003).

### **8.2 SUBUSES AND DESCRIPTION**

Different sub-uses can be distinguished under the use of 'tourism and recreation on the beach'.

- **Tourism:** this sub-use tries to give an idea of the global tourist pressure on the different Belgian beaches
- **Recreational fisheries on/from the beach:** next to angling at sea (see 'recreation and tourism at sea'), other forms of fisheries take place along the shoreline, namely beach fisheries (with standing nets), shrimp fisheries and beach angling (from dikes, groins ... etc).
- **Land yachting:** for this recreational activity a small vehicle is driven on the beach with the aid of wind, captured by a sail attached to it.
- **Sport animation:** sport animation events are recreational activities that are organised on the beach
- **Horseback riding:** occasionally horseback riding is executed on some beaches or dunes.
- **Other (unorganised) beach recreation:** in this category all unorganised beach activities are gathered: sunbathing, playing, walking ... etc.

## 8.3 TOURISM ON THE BEACH

### 8.3.1 Legislative framework

(update by Cliquet A.)

#### **Description**

Tourism and recreation can be undertaken on Belgian beaches. The delimitation of Belgian beaches is described in the Royal Decree of 5 October 1992. However, organizations or clubs that want to undertake activities on beaches, dikes or associated structures need a license granted by the Flemish Government.

Different spatial design plans (Flemish Regional plans, general and exceptional municipal design plans) determine the planning uses for land within the coastal zone (e.g. habitation, industrial, recreational, nature ... etc area). These plans are not available for the marine part of the coastal zone. Spatial plans for the coastal zone can require licences to be obtained for certain activities (e.g. building, changing the relief of the bottom ...).

No actual legislation exists concerning the maximum intensity or frequency of tourism that can take place on beaches, dikes or in the dunes. The only legislation applicable to tourism concerns tourist infrastructure and employment in the tourist sector.

#### **National and Regional Legislation:**

(Maes and Cliquet 2005)

Delimitation of beaches:

- Special Law of 8 August 1980 on the state reform, *BS* 15 August 1980, as amended: Article 2 describes the provincial boundary of West-Vlaanderen as the zero line of the coast or the low water line of the mean low water spring (MLLWS). This is also the boundary of the Flemish Region.
- Royal Decree of 5 October 1992 concerning the determination of a list of waterways and their associated structures authority transferred from the State to the Flemish Region, *BS* 6 November 1992: All beaches and sea defense structures that are passed onto the Flemish Region are delineated.

Legal status of beaches:

- Civil Law: Beaches and associated structures are described as public domain (art. 538).
- Law of 30 April 1958 concerning the granting of beach concessions, *BS* 30 May 1958: Beach concessions for the installation of infrastructure for sea and sun bathing, sports and animation should be granted in favour to the coastal towns.
- Decree of 18 December 1992 concerning the accompanying of the State Budget of 1993, *BS* 29 December 1992: The Flemish Government is vested with authority to grant beach concessions for the private use of public domain pursuant to the Royal Decree of 5 October 1992.
- Decision of the Flemish Executive of 26 April 1995 concerning beach concessions, *BS* 29 August 1995: This Decision sets out the conditions for the granting of concessions, the duties of concession holders and the beach management measures that have to be taken into account.

Infrastructure on beaches:

- Decree of 18 May 1999 on the organization of spatial planning, BS 8 June 1999, as amended: This decree orders the making of spatial structure plans, describing the desired spatial structure of a region. This decree also requires a building permit for building constructions.

### 8.3.2 Existing situation

#### 8.3.2.1 Spatial delimitation

Tourism occurs on all Belgian beaches and associated dikes and dunes.

#### 8.3.2.2 Type and intensity

The Provincial Spatial Execution Plan (PSEP 2003) Beach and Dike (2003) made an inventory of **tourist pressure** on the different Belgian beaches. Tourist pressure was expressed by means of qualitative (descriptive) pressure classes. These pressure classes can also be translated into **pressure indices** which makes their representation easier.

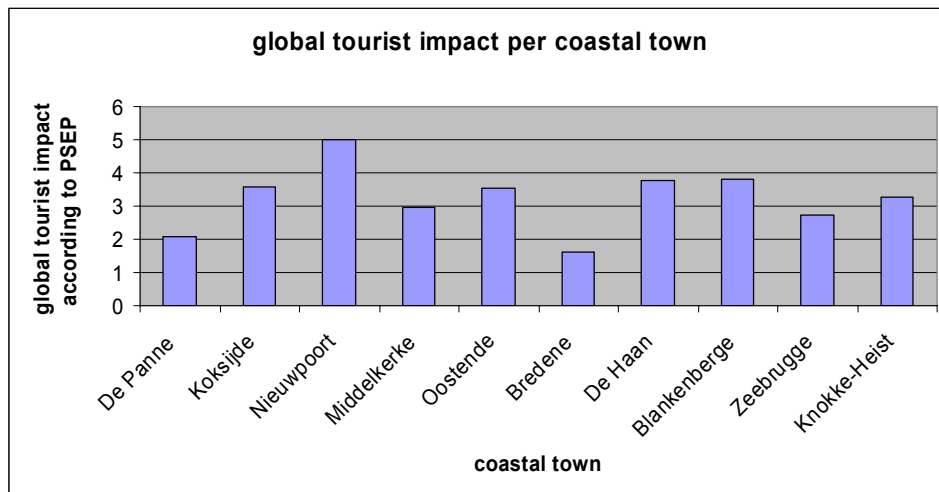
Qualitative pressure classes	Pressure index
Low pressure	1
Medium pressure	3
High pressure	5

The beaches were divided into small sections that give a more detailed picture of the tourist impact along the coastline (see digital document 'Tourist pressure PSEP' for details). The tourist impact of each sector was multiplied by a fraction, representing the estimated relative length of the sector in relation to the whole beach length of a coastal town. The sum of the multiplications of all sectors of a coastal town gives an idea of the global qualitative tourist impact in that coastal town (Table I.3.8a, Figure I.3.8a).

**Table I.3.8a: Global tourist impact on the beaches of the different coastal towns (PSEP 2003)**

Coastal town	Global tourist impact
De Panne	2.1
Koksijde	3.6
Nieuwpoort	5.0
Middelkerke	2.9
Oostende	3.5
Bredene	1.6
De Haan	3.8
Blankenberge	3.8
Zeebrugge	2.7
Knokke-Heist	3,3

**Figure I.3.8a: Global tourist impact per coastal town (PSEP 2003).**



PSEP (2003) also made an inventory of **all constructions on the beaches and dikes**. An increased range of water and beach sports, and commercial events, has consequently increased the demand for temporary and permanent structures on the beach, in the dunes and on the dikes. The major part of beaches lies outside the boundaries of the Flemish region's spatial plans, which classifies such areas as 'undefined territory'. The fact that the Flemish region has not defined these territories means that constructions and activities on certain parts of the beach, linked to tourism and recreation, are indeterminate both at law and in terms of planning.

The aim of the PSEP is to plan for tourist-recreational activities that require either permanent or temporary structures on beaches, dikes or accompanying constructions (irrespective of whether a building permit is required). Individual activities like sunbathing, walking, horseback riding and beach fisheries are not dealt with under the plan.

Table I.3.8b and Figure I.3.8b give an overview of all types of constructions on the beach. These can be separated into beach constructions (constructions for restaurants, bars, sports, public services and surfing clubs) and beach cabins. The total number of constructions on the beach could also give an idea of the tourist/recreational pressure on different beaches. Since the major part of beach constructions are tourist structures (restaurants, bars ...etc), the total number of beach constructions can be correlated to tourist pressure. Beach cabins are mostly used to store tourist beach and recreational equipment. Accordingly, beach cabins can also be correlated to recreational pressure on beaches (see below).

**Table I.3.8b: Overview of the numbers of the different types of constructions on the beach (PSEP 2003).**

	Number of constructions for restaurants/bar/sports/public services	Number of surf clubs	Total number of beach constructions	Number of beach cabins	Total number of beach constructions + cabins
De Panne	42	1	43	527	570
Koksijde	65	3	68	648	716
Nieuwpoort	74	0	74	240	314
Middelkerke	46	1	47	735	782
Oostende	67	1	68	890	958
Bredene	11	1	12	172	184
De Haan	51	1	52	1022	1074
Blankenberge	58	1	59	1243	1302
Zeebrugge	21	1	22	482	504
Knokke	139	5	144	2974	3118
Total	574	15	589	8933	9522

**Figure I.3.8b: Total number of beach constructions and beach cabins (PSEP 2003).**

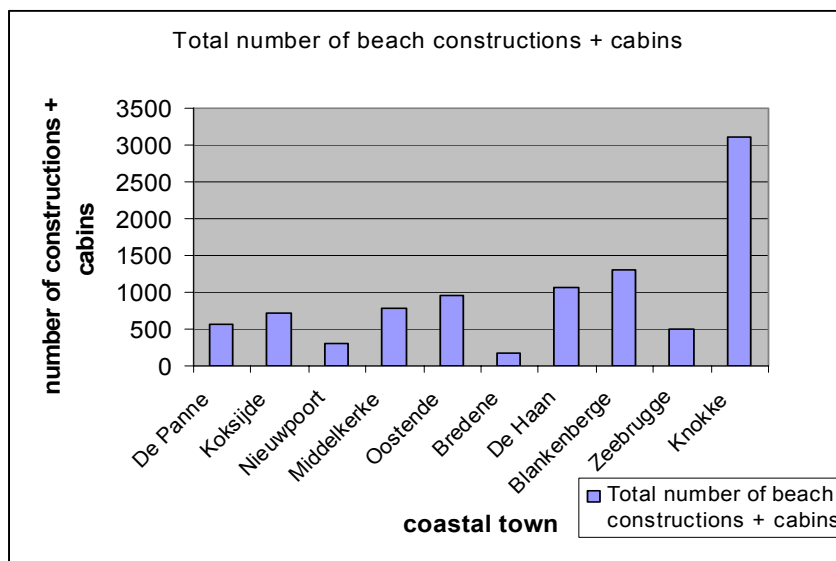
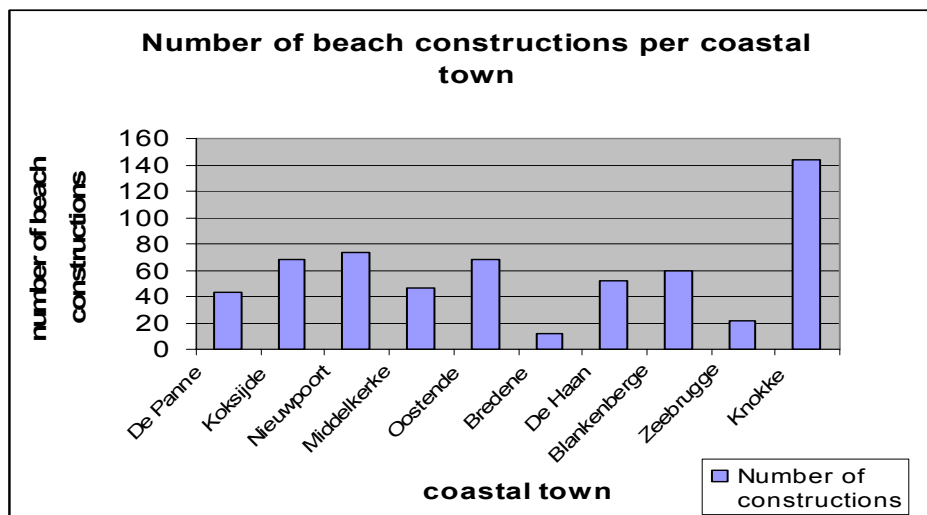


Table I.3.8c gives an overview of the total number of constructions on beaches and dikes in different coastal towns. This is represented graphically in Figure I.3.8c and Figure I.3.8d (division into temporary and permanent constructions).

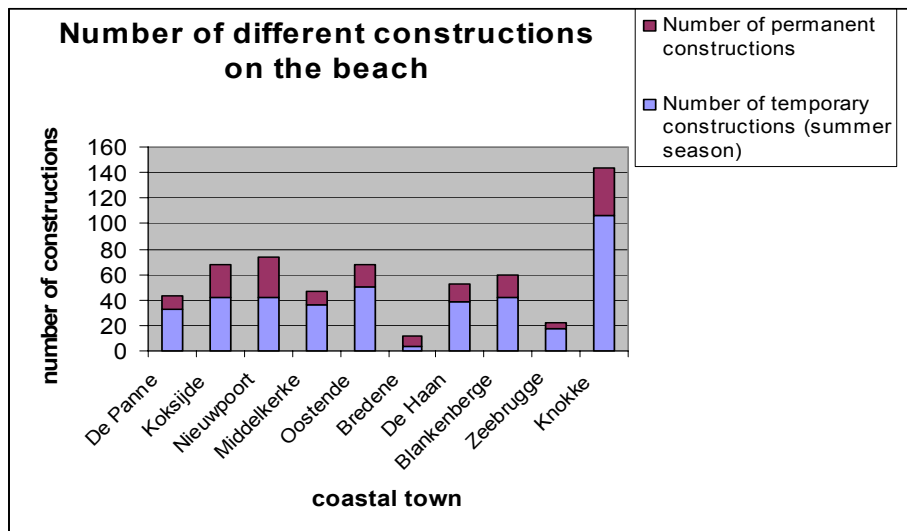
**Table I.3.8c: Constructions on beaches, dunes and dikes in the different coastal towns. A division is made between the number of temporary (mostly during the summer season) and permanent constructions (PSEP 2003).**

	Number of constructions	Number of temporary constructions (summer season)	Number of permanent constructions
De Panne	43	33	10
Koksijde	68	42	26
Nieuwpoort	74	42	32
Middelkerke	47	36	11
Oostende	68	50	18
Bredene	12	3	9
De Haan	52	39	13
Blankenberge	59	42	17
Zeebrugge	22	17	5
Knokke	144	106	38
Total	589	410	179

**Figure I.3.8c: Number of beach constructions per coastal town (PSEP 2003).**



**Figure I.3.8d: Visualization of the permanent and temporary constructions in the different coastal towns (PSEP 2003).**



The recently finished **MAREDASM project** (Maes et al. 2002) produced an overall assessment of the marine degradation of the North Sea and made some proposals for sustainable management. One chapter dealt with degradation due to tourism. Some socio-economical issues of tourism are reproduced in the following section.

One of the results of the project was the estimation of the tourist pressure in the different coastal towns. This was done by correlating 4 parameters to tourist pressure:

- The number of overnight stays in commercial accommodations (intensity 1)
- The number of individual holiday rental homes and second residencies (intensity 2)
- The number of one day tourists (intensity 3)
- The number of sold train tickets to the different coastal towns (intensity 4)

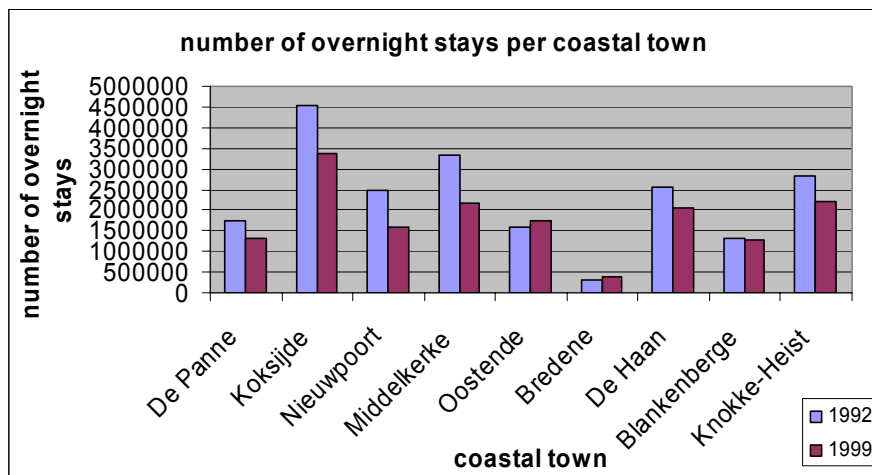
### **Intensity 1**

Table I.3.8d gives an overview of the estimated number of overnight stays in commercial accommodations per coastal town. Comparison between the years 1992 and 1999 gives an idea of the temporal changes in tourist pressure (Figure I.3.8e) (Westtoer 2002).

**Table I.3.8d: Number of overnight stays in commercial accommodations (Westtoer 2002).**

	1992	1999
De Panne	1732000	1312000
Koksijde	4548000	3385000
Nieuwpoort	2486000	1589000
Middelkerke	3319000	2187000
Oostende	1587000	1744000
Bredene	315000	393000
De Haan	2541000	2049000
Blankenberge	1309000	1272000
Knokke-Heist	2841000	2227000

**Figure I.3.8e: Evolution of the number of overnight stays in commercial accommodations (Westtoer 2002).**

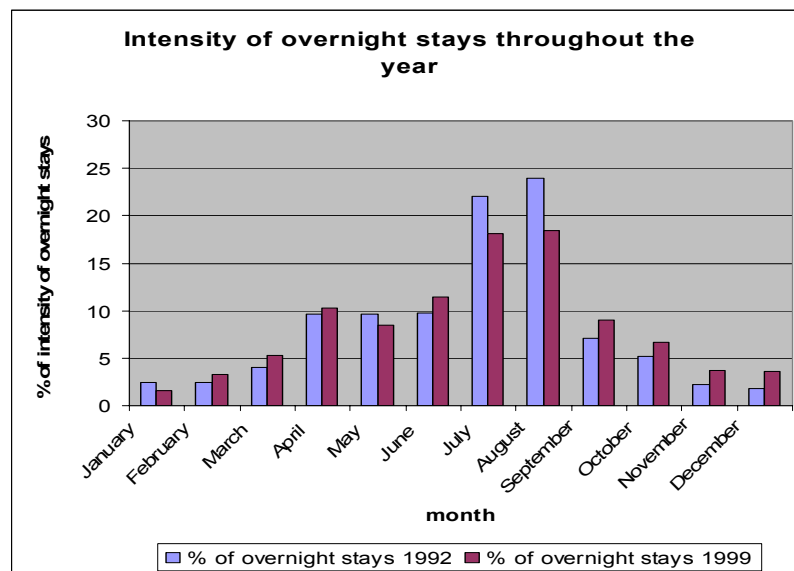


The **frequency** of overnight stays was not evenly spread over the year. The highest were in July and August (ca. 40 %) and lowest were in November and December (ca. 5 %) (Table I.3.8e, Figure I.3.8f).

**Table I.3.8e: The evolution of the percentage of overnight stays in commercial accommodations throughout the year (Westtoer 2002).**

	% of overnight stays	
	1992	1999
January	2.4	1.6
February	2.4	3.3
March	4	5.3
April	9.6	10.3
May	9.6	8.5
June	9.8	11.4
July	22	18.1
August	24	18.4
September	7.1	9
October	5.2	6.7
November	2.2	3.7
December	1.8	3.6

**Figure I.3.8f: The evolution of the percentage of overnight stays in commercial accommodations throughout the year (Westtoer 2002).**



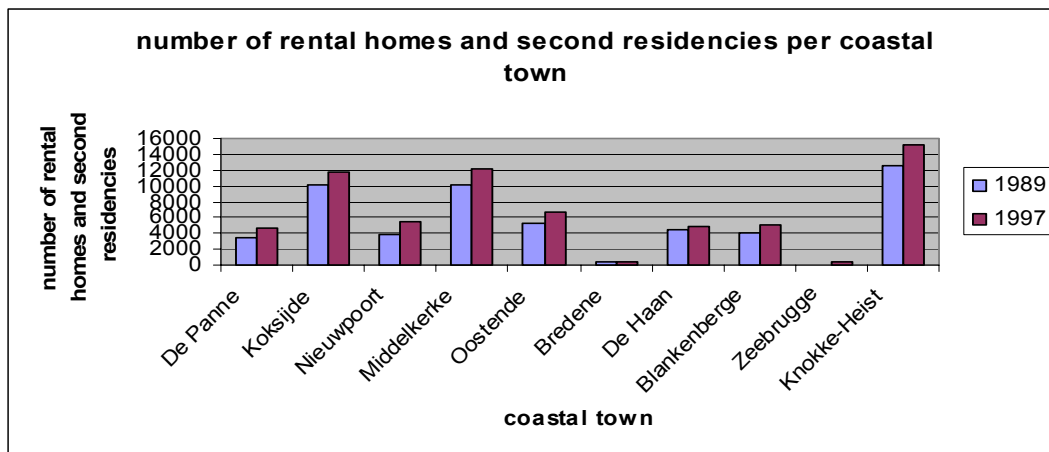
**Intensity 2**

Second residencies are not included in the above-mentioned 'number of overnight stays in commercial accommodations'. However, they are a substantial aspect of coastal tourism in Belgium. This form of tourism has significantly increased over the last years (Table I.3.8f, Figure I.3.8g).

**Table I.3.8f: Estimated number of individual holiday rental homes and second residences (De Keyser and Handsaeme 1998).**

	1989	1997
De Panne	3457	4751
Koksijde	10062	11746
Nieuwpoort	3920	5397
Middelkerke	10061	12081
Oostende	5219	6613
Bredene	327	457
De Haan	4439	4898
Blankenberge	3980	5143
Zeebrugge		333
Knokke-Heist	12559	15224

**Figure I.3.8g: Estimated number of individual holiday rental homes and second residences (De Keyser and Handsaeme 1998).**



The average occupation of these homes is rather low (**25 %** of the year) and the coastal towns can be separated in three groups when considering the occupation of rental homes and second residences:

- occupation is lower than the average: De Haan, Nieuwpoort, De Panne
- occupation equals average: Koksijde, Middelkerke, Blankenberge, Zeebrugge
- occupation is higher than the average: Bredene, Oostende, Knokke-Heist

On average 38 % of the individual holiday rental homes and second residences are offered for rent by the owners. Since the occupation percentage only considers occupation by the owner, the actual occupation percentage could be much higher and could also give another spreading pattern over the different coastal towns.

### **Intensity 3**

One-day tourism can be defined as follows:

'Trips with a duration of one day that do not include an overnight stay. Lunch is taken outside the home, the stay has a recreational goal (no family visits) and is usually situated more than 20 km from the home'

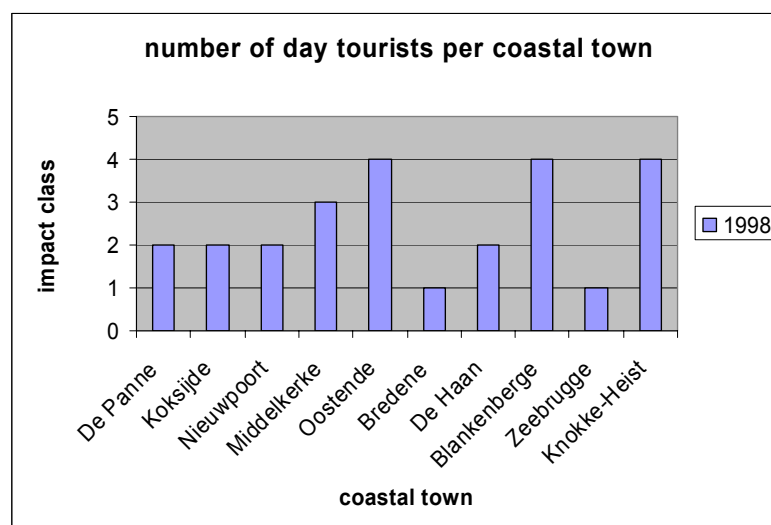
This type of tourism is very important in the Belgian coastal zone, but until recently no accurate system existed to measure the intensity of the activity. Therefore the conclusions on one-day tourism are mainly based on rough assessments of the number of day tourists coming to the coast. Westtoer has developed a methodology for a permanent measurement system for one-day tourism (considering number of tourists coming to the coast by car and by train/bus), but this tool has just become operative and only preliminary results are available (which do not give measurements for the different coastal towns) (Westtoer 2003). A recent declaration of the Flemish Ministry of Employment and Tourism (2004) stated that, according to the permanent measurement system, 19.4 million tourists visited the coastal area in 2003. The statement also indicates that this represents an increase of 13 % in comparison to 2002 (14.9 million day tourists). Earlier Westtoer estimates on the number of day tourists were 28.3 million in 1992 and 30.6 million in 2000.

WES estimated the number of day tourists to the coastal area in 1998 at 17.2 million, which is considerably lower than the estimates made by Westtoer (Verhaeghe 2000). Table I.3.8g gives the WES-estimated number of day tourists to each coastal town for the year 1998 (represented graphically in Figure I.3.8h).

**Table I.3.8g: Number of day tourists to the different coastal towns (Verhaeghe 2000).**

1998	
De Panne	1200000
Koksijde	1500000
Nieuwpoort	1500000
Middelkerke	2000000
Oostende	3000000
Bredene	600000
De Haan	1100000
Blankenberge	3000000
Zeebrugge	700000
Knokke-Heist	3300000

**Figure I.3.8h: Number of day tourists to the different coastal towns (Verhaeghe 2000).**



#### **Intensity 4**

The number of sold train tickets to the coast can also be used as a parameter for determining the **extent of one-day tourism that comes to the coast by train**. This parameter certainly has its limitations since not all train passengers to and from coastal towns are day tourists. People who can use the train for free are also not included in this way.

**Table I.3.8h: Number of sold train tickets to coastal towns in 1998, 1999 and 2000 (Westtoer 2002).**

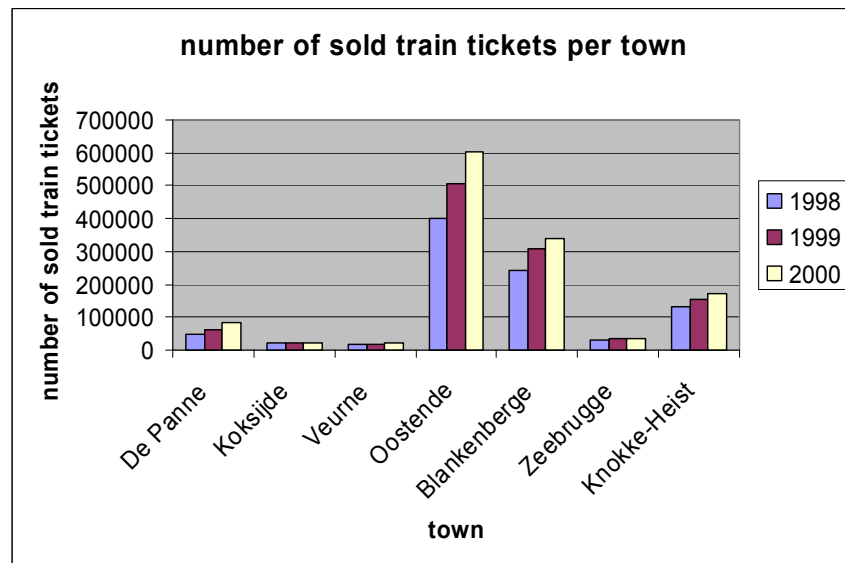
	<b>1998</b>	<b>1999</b>	<b>2000</b>
Total number of sold train tickets	890036	1105880	1277265

The numbers in table I.3.8h show that, although the number of 'day tourists' arriving by train is increasing every year, the **greatest part** of the total number of day tourists (17200000 in 1998) reach coastal towns **by car**. Table I.3.8i and Figure I.3.8i give a detailed overview of the number of sold train tickets to the different coastal towns.

**Table I.3.8i: Number of sold train tickets to the different coastal towns (Westtoer 2002).**

	<b>1998</b>	<b>1999</b>	<b>2000</b>
De Panne	48291	61164	85777
Koksijde	20431	21662	22698
Veurne	16914	18045	19858
Oostende	400574	508079	604362
Blankenberge	241630	308559	338397
Zeebrugge	28705	35573	34800
Knokke-Heist	133491	152798	171373
total	890036	1105880	1277265

**Figure I.3.8i: Number of sold train tickets to the different coastal towns (Westtoer 2002).**



Middelkerke, Bredene and De Haan do not have a train station, but can be reached by train (and subsequent buses or trams).

#### **Combined estimate of tourist pressure in the different coastal towns**

The number of sold train tickets is not very representative as an expression of tourist pressure because there are coastal towns that haven't got a train station.

Another parameter that can be correlated with tourist pressure is the number of registered compensated employers in the tourist/recreational sector (intensity 4').

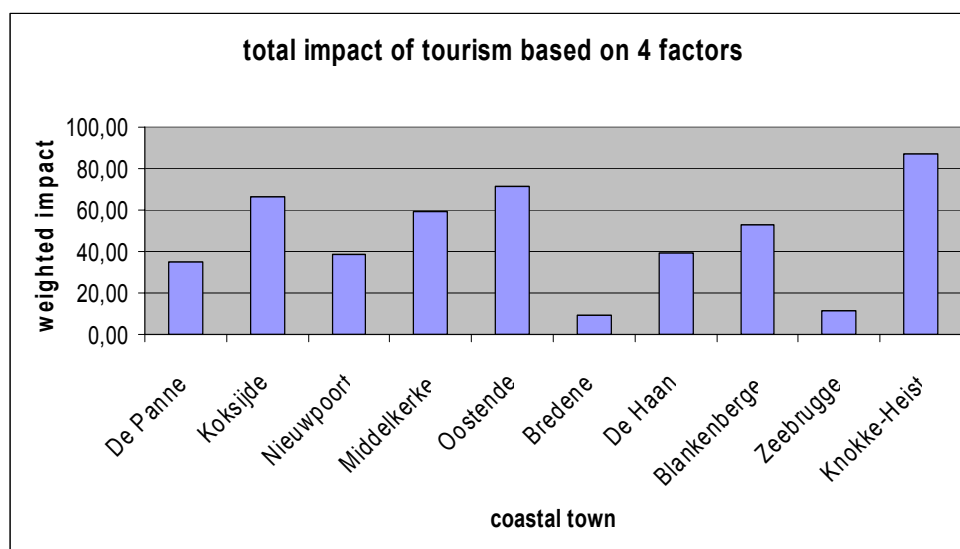
To combine these parameters in order to get an overall picture of tourist pressure in the different coastal towns, first the maximum number of each intensity parameter should be highlighted, and then, all numbers of an intensity parameter should be divided by the corresponding maximum number to get fractions. A weighting factor can be assigned to every intensity parameter (e.g. same weighting factor of 25 for each parameter – sum of weighting factor should be 100).

This gives for the period 1997-1999:

**Table I.3.8j: Overview of the combination of tourist intensity parameters into a global tourist impact factor.**

	intensity 1			intensity 2			intensity 3			intensity 4'			SUM impact
	1999	Fractions	weight	1997	fractions	weight	1998	fractions	weight	1997	fractions	weight	
De Panne	1312000	0.3876	9.69	4751	0.3121	7,80	1200000	0.3636	9.09	677	0.3267	8.17	34.75
Koksijde	3385000	1	25	11746	0.7715	19,29	1500000	0.4545	11.36	868	0.4189	10.47	66.13
Nieuwpoort	1589000	0.4694	11.74	5397	0.3545	8,86	1500000	0.4545	11.36	520	0.2510	6.27	38.24
Middelkerke	2187000	0.6461	16.15	12081	0.7935	19,84	2000000	0.6061	1515	689	0.3325	8,31	59.46
Oostende	1744000	0.5152	12.88	6613	0.4344	10,86	3000000	0.9091	22.73	2072	1	25	71.47
Bredene	393000	0.1161	2.90	457	0.0300	0.75	600000	0.1818	4.55	93	0.0449	1.12	9.32
De Haan	2049000	0.6053	15.13	4898	0.3217	8.04	1100000	0.3333	8.33	623	0.3007	7.52	39.03
Blankenberge	1272000	0.3758	9.39	5143	0.3378	8.45	3000000	0.9091	22.73	1028	0.4961	12.40	52.97
Zeebrugge				333	0.0219	0.55	700000	0.2121	5.30				11.70
Knokke-Heist	2227000	0.6579	16.45	15224	1	25	3300000	1	25	1699	0.82	20.50	86.95

**Figure I.3.8j: Global tourist impact in the different coastal towns, based on 4 different, weighted tourist intensity factors.**



## **8.4 RECREATIONAL FISHERIES ON OR FROM THE BEACH**

### **8.4.1 Legislative framework**

(updated by Cliquet A.)

#### **Description**

Recreational fishing is a leisure activity whereby the catches can only be used for personal use. There are three categories of recreational fisheries: beach fisheries, shrimp fisheries and beach angling.

Beach fishing is a kind of fishing that is done when it's low tide. The nets (bottom set gill nets) are placed on the beach or just below the low water line (maximum 150 m at sea). The nets are anchored with concrete blocks, anchors, and rims of car wheels or with heavy metal posts.

During shrimp fishing a net is towed or pushed over the seafloor during low water.

Between Koksijde and Nieuwpoort (but especially in Oostduinkerke) the shrimp nets are towed by horses (traditional way). There are only a few fishermen that perform this activity (from March until December). Therefore this way of shrimp fishing is economically not profitable, but it is maintained for tourist and traditional reasons.

Next to angling from boats, this recreational activity can also be executed from the beach or from groins and seawalls. Local inhabitants and tourists execute the activity.

Recreational fishing from the beach is very poorly regulated in the current legislation. The Law on river fishing (1<sup>st</sup> of July 1954) only covers the fresh water basins and the authority for the coast is divided between the Belgian State and the Flemish Community. This has led to fragmented legislation and a lack of coherence in the management of the coastal area. The only regulation concerning certain activities both on land and at sea is the Belgian Coastal Regulation. In several coastal municipalities such as Koksijde, Bredene and Oostende regulations concerning beach fisheries also exist. These regulations deal with beach-fishing areas and comprise rules concerning the permitted period and maximum number of nets per fishermen.

A regulation for beach fishing that is valid for the whole coastal area doesn't exist and a fishing permit (obliged for freshwater fishing) is not needed.

Specific for recreational angling at sea (V.V.H.V. 2003):

- Beach and sea angling: catches have to have minimum measures
- Sea angling: limited for catches of cod (maximum 15 kg/person.day) and sea bass (maximum 5 kg/person.day).

#### **Legislation**

(Maes and Cliquet 2005)

#### **International legislation:**

- Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms,

*Official Journal L 125, 27 April 1998: → It is for instance forbidden to keep any undersized fish that are caught (art. 19).*

### **National legislation:**

- Law of 22 January 1901, changing article 13 of the Decree of 16 December 1811 concerning the catch of mussels, *BS 23 August 1901*: It is prohibited to catch mussels, mussel seed, snails or other sea products from the coastal defense works without a permit.
- Royal Decree of 25 January 1951 concerning the search and catch of mussels, mussel seed, snails and other sea products on coastal and harbour works, *BS 14 February 1951*: A permit is needed to perform these activities (art. 1). The Ministry of the Flemish Community brought attention on the danger of damaging coastal defense structures (like groins) when collecting mussels and/or mussel seed. To prevent this, the Flemish government can exclude these activities on the coastal defense works.
- Royal Decree of 4 August 1981 concerning the Police and Shipping Regulations for the Belgian territorial sea, the harbours and the beaches of the Belgian coast, *BS 1 September 1981*, as amended (also known as Belgian coastal regulation): It is prohibited to fish in the channels of harbours from coastal works, except with cross nets or lines and provided shipping is not hindered (art. 10, § 11). Beach fisheries are regulated under article 40. Beach nets and fishing lines with hooks can only be placed outside the bathing areas on the beach and nets must be marked with yellow markings (art. 33, § 1, 1).
- Royal Decree of 14 August 1989 concerning the determination of additional national measures for the maintenance and conservation of the fish stocks and for control on the fishery activities, *BS 2 September 1989*, as amended: This decree sets additional measures for the implementation of the EU regulations concerning the maintenance and conservation of fish stocks. The Amendment of 11 March 1996 significantly limits the extent of recreational fisheries, with the aim of protecting commercial fisheries.
- Law of 20 January 1999 on the protection of the marine environment in the marine areas under Belgian jurisdiction, *BS 12 March 1999*; as amended: The King can, when recommended by the Ministers for protection of the marine environment and for Agriculture, take measures to limit the extent of recreational fisheries at sea (art. 12, § 2).

### **Municipal regulations concerning beach fisheries/shrimp fisheries (with horses) /beach angling:**

- Police Regulation of Bredene of 20 September 1999 concerning beach fisheries: This includes zones for beach fishing, period, materials and methods.
- General Police Regulation of De Panne, Chapter X on beach fisheries: This includes zones, period, materials, and methods.
- General Police Regulation of Koksijde, Chapter 32 on beach fisheries: zones for beach, shrimp fisheries and beach angling, placing of posts, anchors and other material for beach fisheries.
- General Police Regulation of Middelkerke, art. 93.1-93.12 on beach fisheries: This includes zones for beach fishing, period, materials and methods.
- Police Regulation of Oostende concerning beach fisheries: This includes placing of posts, anchors and other material for beach fisheries.

## 8.4.2 Existing situation

### 8.4.2.1 Spatial delimitation

Very little information is available on the delimitation of zones where beach fisheries, beach angling and shrimp fishing are actually conducted.

### 8.4.2.2 Type and intensity

#### **Beach fisheries**

Beach fisheries are most intensively conducted on the West coast. This kind of recreational fishing is done the whole year through, at low tide. Fishing nets are 50 to 200 meters long. During spring sole is mostly caught, while in autumn the target species are young cod and whiting. Problems with this kind of fishing are:

- Catch: small, undersized, and protected species are caught.
- Because of the combined length of the many nets the beach gets closed off in certain areas of the coast. Seals, porpoises and different water bird species can get caught in these nets and suffocate.
- The nets are usually not emptied quickly enough, which causes rotting of the catch, pollution of the beach and health risks.
- The metal posts on the beach can be dangerous for swimmers and other recreational users of the beach, such as surfers. There are also conflicts with other recreational fishing activities, such as angling and shrimp fishing.
- The nets are frequently dumped illegally at sea. The propellers of fishing or recreational boats can become entangled in the nets causing considerable damage. The floating nets also continue to catch fish and other sea mammals ("ghost fishing").

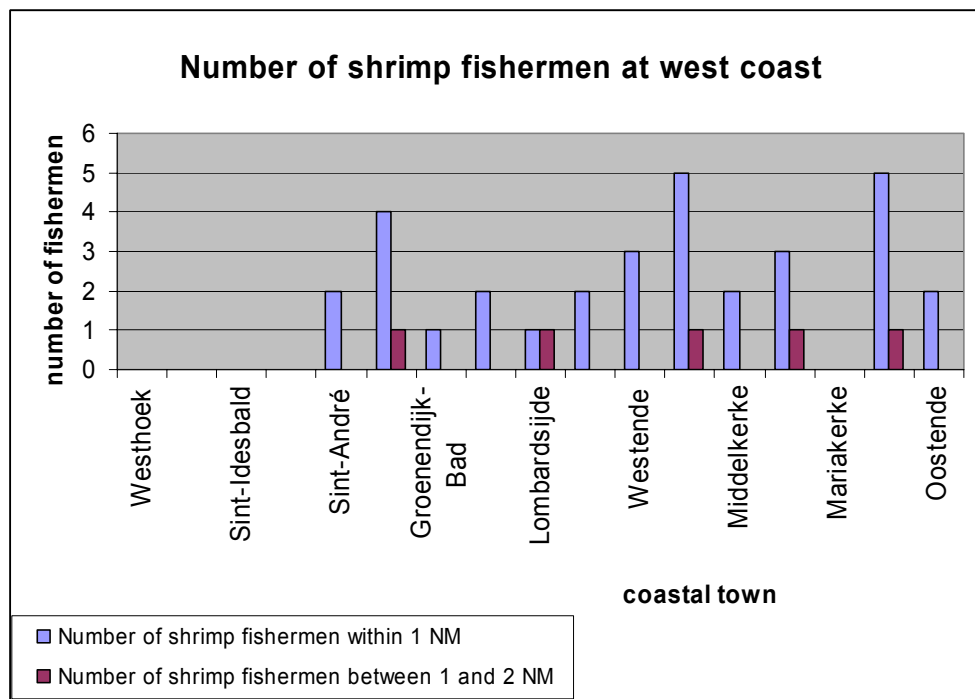
The intensity of shrimp fishing is only known for one day (13 October 1999), and only for the beaches from De Panne to Oostende (Table I.3.8k, Figure I.3.8k) (BMM 2000). The report states that the highest intensity of shrimp fishing occurs on the Belgian coast from mid August until November. This activity is usually located within 1 NM of the coastline. The shrimp statistics do not, however, include shrimp fishing with nets towed by horses. This activity occurs throughout the whole year, except in bad (stormy) weather conditions.

**Table I.3.8k: Number of shrimp fishermen on the 13<sup>th</sup> of October 1999 (MUMM 2000).**

Location	Number of shrimp fishermen within 1 NM	Number of shrimp fishermen between 1 and 2 NM
Westhoek	0	0
De Panne	0	0
Sint-Idesbald	0	0
Koksijde	0	0
Sint-André	2	0
Oostduinkerke	4	1
Groenendijk-Bad	1	0
Nieuwpoort	2	0

Lombardsijde	1	1
Sint-Laureinsstrand	2	0
Westende	3	0
Between Westende and Middelkerke	5	1
Middelkerke	2	0
Raversijde	3	1
Mariakerke	0	0
Between Mariakerke and Oostende	5	1
Oostende	2	0

Figure I.3.8k: Number of shrimp fishermen on the 13<sup>th</sup> of October 1999 (MUMM 2000).



### **Beach angling**

It is very difficult to assess the intensity of beach angling since very little detailed information exists.

Table I.3.8l gives the qualitative intensities of recreational beach angling found on the Belgian coastal website (Coastal website 2003). The qualitative intensity classes are based on the classification made by ECOLAS. ECOLAS N.V. (2000) made an inventory of all recreational activities (with license duty) in the Belgian coastal and offshore area. A classification of these activities was made based on the frequency of their occurrence during the year. Four categories were made:

- category A: activities that occur throughout the entire year.
- category B: activities that periodically occur between April and October, depending on the weather conditions.
- category C: activities that only occur during the summer season (July-August).

- category D: activities that only occur once in a year.

**Table I.3.8l: Qualitative intensities of beach angling in the different coastal towns (Coastal website, 2003).**

municipality	Beach angling
De Panne	B
Koksijde	A
Nieuwpoort	A
Middelkerke	B
Oostende	A
Bredene	A
De Haan	A
Blankenberge	A
Zeebrugge	B
Knokke-Heist	B

A recent V.V.H.V. inquiry (2003) (Vlaamse vereniging van Hengelsport Verbonden – Flemish Association for Angling Sport) gives some more detailed information in respect of the intensity of angling on the Belgian coast. However, the inquiry only registers information on the intensity of angling competitions. This only reveals a fraction of angling intensities occurring at sea and from the beach.

Two federations, organizing activities (mostly competitions) at sea/from the beach, are connected to the V.V.H.V., one for sea angling from boats (VVBZ) and one for beach angling (VFK).

Different clubs are associated with these federations. 51 clubs are associated with the VVBZ and 11 clubs are associated with the VFK. VVBZ clubs organize on average 5 sea angling activities per year per club (with an average angling duration of 5-6 hours and a shipping time of 1 hour). VFK clubs organize on average 10 beach angling activities per year per club (with an average angling duration of 4 hours). Table I.3.8m gives an overview of the location of the different clubs and the intensity of their angling activities (competitions). There's no information about the coastal location of the activities organized by the clubs that are not located near the coast (inland clubs).

**Table I.3.8m: Overview of the angling activities of the clubs associated with the V.V.H.V. (V.V.H.V. 2003).**

	sea boat angling clubs	Average number of angling activities/year	Average number of hours angling/year	beach angling clubs	Average number of angling activities/year	Average number of hours angling/year
Oostende	2	10	55	1	10	40
Blankenberge	1	5	27.5	1	10	40
Oostduinkerke	1	5	27.5			
Wenduine				2	20	80
Not located near the coast (inland)	47	235	1292.5	7	70	280
<b>Total number</b>	<b>51</b>	<b>255</b>	<b>1402.5</b>	<b>11</b>	<b>110</b>	<b>440</b>

Throughout the year the catches are very diverse, but global trends can be established. One of the most important target species is sole.

- October - March: young cod, whiting, dab and flounder
- April – September: eel, sole and sea bass

Fishing rods are made of carbon; length maximum 5 meters; fishing lines are made of nylon and between 25/00 and 35/00; and sinkers are made of lead with a maximum weight of 200 grams.

## **8.5 LAND YACHTING**

### **8.5.1 Legislative framework**

(updated by Cliquet A.)

#### **Description**

Due to the existing federations (e.g. LAZEF vzw) there is a uniform regulation that is applied internationally. This regulation consists of priority rules, a behaviour code and security rules. Besides this international regulation there are also municipal police regulations.

#### **Legislation**

(Maes and Cliquet 2005)

#### **Municipal regulations concerning land yachting:**

- General Police Regulation of Bredene: All traffic of land yachts, windsurf boards on wheels and other similar equipment that could be a danger for the bathers or beach visitors is prohibited in the dunes and on the beach during the period in which beach guards are active (art. 8.1.10).
- General Police Regulation of De Panne: Art. 87 and 99 (zones, periods), art. 88-90 (conditions), art. 91-95 (competitions), art. 96-98 (courses).
- Police regulation of Knokke-Heist concerning the beach: The use of land yachts and windsurf vehicles is allowed in certain zones during specific time periods (art. 26).
- General Police Regulation of Koksijde : Chapter 33, art. 1 (zones, periods), art. 2, 3 and 4 (conditions), art. 5-8 (competitions).
- General Police Regulation of Middelkerke: Art. 84.1 (zones, periods), art. 84.2-84.3 (conditions), art. 84.4-84.5 (competitions), art. 84.6 (insurance).
- Police Regulation of Nieuwpoort concerning the use of land yachts on the beach: Art. 1 and 2 (zones, periods), art. 3 (insurance), art. 4-5 (conditions).
- Police Regulation of Oostende concerning the beach and the dunes: The use of vehicles and boards on wheels with a sail is only allowed on the beach during the winter season (and only in specific zones) (art. 5).

### **8.5.2 Existing situation**

#### ***8.5.2.1 Spatial delimitation***

Land yachting is generally limited to beaches in Belgium. This is because beaches are the only locations with suitable surface areas and terrain characteristics. The West coast is the most suitable area for land

yachting due to the broadness and hardness of the beaches. It is possible to ride from the harbour of Duinkerke (France) to Groendijk (Oostduinkerke) (Coastal website 2003).

Land yachting can only be executed during low tide and on the hard part of the beach. This means there are conflicts with other beach users (sun bathers ... etc). Conflicts with other users are further diminished because land yachting requires high wind velocities, which is a negative factor for sun bathing and other recreational activities on the beach (Coastal website 2003).

Although conflicts can occur with nature conservation, land yachting only causes minor disturbances through noise, emissions or garbage. In Germany (St. Peter Ording), the Netherlands (Ter Schelling) and the USA (Ivanpah Dry Lake) land yachting even takes place in nature conservation areas (Coastal website 2003).

It is important for the land yachting sport that the current zones can be used in the future and that the possible delineation of nature areas does not restrict the sport. Furthermore a passage should be made through the planned nature conservation zone along the border with France, since competitions are mainly transboundary events. If land yachting was to be prohibited on Belgian beaches the activity would likely disappear due to the absence of alternative areas where the sport can take place (broad and long, with a hard bottom) within Belgium (Coastal website 2003).

### 8.5.2.2 Type and intensity

Ten clubs organize land yachting with approximately 1000 members. 7 clubs offer the traditional land yachting, in addition to speedsailing and kitesailing (see below). The other 3 clubs only offer speedsailing (Coastal website 2003).

Land yachting can take place the whole year through, but the highest intensities are noticed between September and March (mainly caused by municipal regulations) (Coastal website 2003).

Table I.3.8n gives an overview of the coastal towns where traditional land yachting can take place and the corresponding frequencies.

**Table I.3.8n: Location and frequency of traditional land yachting on the Belgian beaches (Coastal website 2003).**

Coastal town	Traditional land yachting
De Panne	A
Koksijde	A
Westende	C
Oostende	C
Bredene	B
Blankenberge	C
Zeebrugge	A
Knokke-Heist	B

- category A: activities that occur throughout the entire year.
- category B: activities that periodically occur between April and October, depending on the weather conditions.
- category C: activities that only occur during the summer season (July-August).

**Table I.3.8o: Number of land yachting days organized in De Panne and the corresponding number of participants (LAZEF 2003).**

	1996	1997	1998	1999	2000	2001	2002
Total number of sport days	72	100	105	106	115	112	134
Number of participants		2855	2436	2811	2406	2606	2658

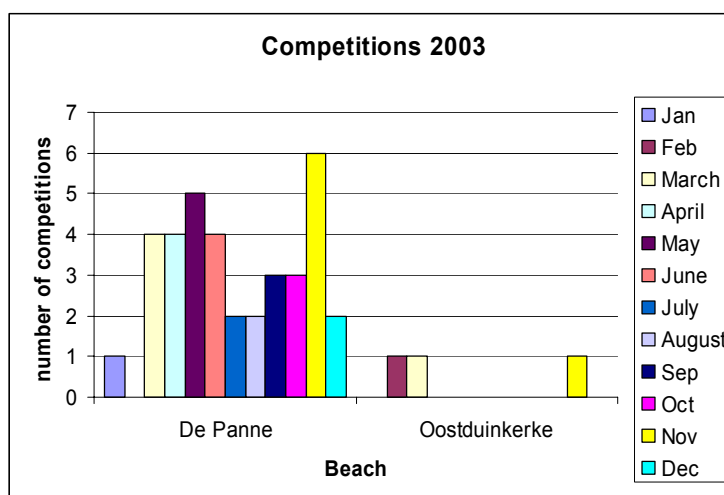
### Overview of the national competitions

During these competitions a total distance of 2 km is covered, which comprises two turns (LAZEF (2003)). The following table gives an overview of the frequency of the national competitions in De Panne and Oostduinkerke (the only coastal towns that organize such competitions) for 2003:

**Table I.3.8p: Overview of the national land yacht competitions for 2003 (LAZEF 2003).**

	Number of competitions 2003											
	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
De Panne	1	0	4	4	5	4	2	2	3	3	6	2
Oostduinkerke	0	1	1	0	0	0	0	0	0	0	1	0

**Figure I.3.8l: Overview of the national land yacht competitions for 2003 (LAZEF 2003).**



### Special disciplines

#### **Kitesailing:**

Kitesailing (also called parasailing) is a kind of land yachting (class 8) whereby a buggy is steered by means of the feet while both hands are needed to operate a kite (LAZEF 2003).

**Table I.3.8q: Location and frequency of kite sailing on the Belgian beaches (Coastal website, 2003).**

Coastal town	Kitesailing
Koksijde	B
Oostende	A
Bredene	B
De Haan	B
Blankenberge	B
Knokke-Heist	A

- category A: activities that occur throughout the entire year.
- category B: activities that periodically occur between April and October, depending on the weather conditions.

**Speedsailing:**

A speed sail is a big (usually wooden) skateboard with bigger wheels, a fiberglass mast and a sail/geek resembling that of a wind surfboard.

A speedsail is considered as a class 7 land yacht (land yacht that is driven in standing position and which sail can only stand straight by the presence of the pilot), according to the international division (RIRC – Reglement International de Roulage et de Course – edited by the international federation FISLY) (LAZEF 2003).

**Table I.3.8r: Location and frequency of speedsailing on the Belgian beaches (Coastal website 2003).**

Coastal town	Speedsailing
De Panne	A
Nieuwpoort	B
Middelkerke	B
Bredene	B
Blankenberge	B
Knokke-Heist	A

- category A: activities that occur throughout the entire year.
- category B: activities that periodically occur between April and October, depending on the weather conditions.

## 8.6 SPORT ANIMATION ON THE BEACH

### 8.6.1 Legislative framework

(updated by Cliquet A.)

#### **Description**

Only municipal regulations concerning beach animation exist.

#### **Legislation**

(Maes and Cliquet 2005)

#### **Municipal regulations concerning beach animation:**

- General Police Regulation of Bredene: Chapter 8, 8.3: beach animation is only allowed during certain periods.
- General Police Regulation of De Haan: For the organization of beach and dike animation the permission of the Burgomaster is needed (art. 135).
- General Police Regulation of De Panne: Chapter 21 (organization of beach and dike animation): permission of the Burgomaster is needed (art. 171), periods (art. 172-173), conditions (art. 174-177).
- Police Regulation of Knokke-Heist concerning animation activities on public grounds: It is prohibited to organize animation activities on the beach and in the dunes (art. 1-2). Under certain conditions these activities can be allowed (art. 3).
- General Police Regulation of Middelkerke: The organization of publicity animation on dikes and beaches is limited (at. 41).
- Police Regulation of Oostende concerning the beach and dunes: Animation can only be organized on the beach with the permission of the city council (art. 6).

### 8.6.2 Existing situation

#### **8.6.2.1 Spatial delimitation**

The information on sport animation on the beach is very scarce.

#### **8.6.2.2 Type and intensity**

Very little information could be found regarding sport animation frequencies and intensities. The coastal website gives some background information (Table I.3.8s).

**Table I.3.8s: Coastal towns where sport animation events are organized, with their corresponding frequency (Coastal website 2003).**

Coastal town	Sport animation
Koksijde	C
Bredene	B
Blankenberge	B

- category B: activities that periodically occur between April and October, depending on the weather conditions.
- category C: activities that only occur during the summer season (July-August).

## **8.7 HORSEBACK RIDING**

### **8.7.1 Legislative framework**

(updated by Cliquet A.)

#### **Description**

Horseback riding takes place on the beaches and in the dunes of some coastal towns and is therefore mainly considered in municipal regulations.

#### **Legislation**

(Maes and Cliquet 2005)

- Decision of the Flemish Government of 26 April 1995 concerning the beach concessions, *BS 29 August 1995*: It is only possible to prohibit the exclusion of horseback riding on the beaches or in the dunes during the bathing season (July-August) (art. 8).

#### **Municipal regulations concerning horseback riding:**

- Police Regulation of Blankenberge concerning horseback riding on the beach and in the dunes: Horseback riding is prohibited during the summer season, except on the established bridle paths.
- General Police Regulation of Blankenberge: During the bathing season access to certain beach zones is denied to horses, donkeys and harnessed coaches (art. 192).
- General Police Regulation of Bredene: All traffic with horses and mounts is prohibited in the whole dune area, unless on the established bridle paths. Horses are only allowed on the wet beach outside the summer months (art. 9.3.1 and 9.3.2).
- General Police Regulation of De Haan: Horseback riding is prohibited on the beach at high tide and during daytime in the summer period. It is also restricted in certain periods and zones in dunes (art. 165-167).
- General Police Regulation of De Panne: All traffic with horses and mounts is prohibited in the whole dune and forest area, unless on the established bridle paths (art. 49 and 57). There are also restrictions for horseback riding on the beach during the summer season (art. 50).
- Police Regulation of Knokke-Heist concerning traffic with mounts on the beach, in the dunes, in the forest and on the public roads: All traffic with horses and mounts is prohibited in the dunes and forest, unless on the established bridle paths (art. 1), and during the summer season in certain beach zones (art. 2).
- General Police Regulation of Koksijde: All traffic with horses and mounts is prohibited in the whole dune area, unless on the established bridle paths (Chapter 22, art. 1). During the summer season all traffic with horses and mounts is prohibited on the beach and in the beach water (art. 2).
- General Police Regulation of Middelkerke: All traffic with horses and mounts is prohibited in the whole dune area. All traffic with horses and mounts is restricted on the beach in certain periods and zones.
- Police Regulation of Nieuwpoort concerning access of horses on the beach: Horseback riding is prohibited on the beach in the summer season from 8.00 am until 19.00 pm (art. 1). Ponies accompanied by an authorised person are allowed (art. 2).

- Police Regulation of Oostende concerning animals: All traffic with horses and mounts is prohibited in certain zones and periods on the beach. It is also prohibited in dunes, except on the established bridle paths (art. 6-7).
- Police Regulation of Zeebrugge on sea bathing: All traffic with horses is prohibited from 9.00 am until 19.00 pm on the beach and in dunes during the summer season (art. 11).

## 8.7.2 Existing situation

### 8.7.2.1 Spatial delimitation

Horseback riding only occurs in certain coastal towns.

### 8.7.2.2 Type and intensity

Horseback riding can be done in Koksijde, Oostende, Bredene, De Haan and Zeebrugge and frequencies are given on the coastal website (table I.3.8t).

**Table I.3.8t: Coastal towns where organized horseback riding takes place, with the corresponding frequency (Coastal website 2003).**

Coastal town	Horseback riding
Koksijde	B
Oostende	C
Bredene	C
De Haan	B
Zeebrugge	B

- category B: activities that periodically occur between April and October, depending on the weather conditions.
- category C: activities that only occur during the summer season (July-August).

## 8.8 OTHER (UNORGANISED) BEACH RECREATION

### 8.8.1 Legislative framework

(updated by Cliquet A.)

#### **Description**

Other beach recreation (which is not organised by federations) includes sunbathing, playing, beach animation, walking ... etc.

## **Legislation**

(Maes and Cliquet 2005)

### **Regulations concerning sunbathing/swimming:**

- Royal Decree of 4 August 1981 on a police and shipping regulation for the Belgian territorial sea, the ports and beaches of the Belgian coast, *BS* 1 September 1981; as amended: It is prohibited to swim or bath in the harbours of the Belgian coast (art. 44).

### **Municipal regulations concerning the geographical and temporal delineation of the (guarded) swimming zones/sun bathing areas:**

- General Police Regulation of Blankenberge: Art. 171 and 172.
- General Police Regulation of Bredene: Chapter 8, 8.1.
- General Police Regulation of De Haan: Art. 127-128.
- General Police Regulation of De Panne: Chapter 19, art. 141-143.
- Police regulation of Knokke-Heist concerning the beach: Chapter 1, art. 2-4.
- General Police Regulation of Koksijde: Chapter 26, art. 1-3.
- General Police Regulation of Middelkerke: Art. 76-77.
- Police Regulation of Nieuwpoort concerning sea bathing: Art. 1-2.
- Police Regulation of Oostende concerning the beach and dunes: Art. 1.
- Police Regulation of Zeebrugge on sea bathing: Art. 1-2.

### **Regulations concerning beach cabins:**

- Decision of the Flemish Government of 26 April 1995 concerning the beach concessions, *BS* 29 August 1995: There's no permission from the Flemish Minister for Public Works needed to locate permanent or movable beach cabins on the beach (art. 6, 3). The concession holders have to ask permission to use a proposed zone for the installation of beach cabins to the Ministry of the Flemish Community (department LIN, AWK).

### **Municipal regulations concerning beach cabins:**

- General Police Regulation of Blankenberge: Art. 173-181; Police Regulation concerning windscreens on the beach.
- General Police regulation of Bredene: Chapter 8, 8.2.
- General Police Regulation of De Haan: Art. 136.
- General Police Regulation of De Panne: Art. 151, art. 157-170.
- Police Regulation of Knokke-Heist concerning the beach: Art. 12, art. 14-16 (beach tents).
- General Police Regulation of Koksijde: Chapter 25 on beach cabins and beach tents.
- General Police Regulation of Middelkerke: Art. 78 on beach cabins and wind screens.
- Police Regulation of Oostende concerning the beach and dunes: Art. 7 (wind screens).
- Police Regulation of Zeebrugge concerning sea bathing: Art. 7-10 (beach cabins).

### **Regulation concerning vehicles on the beach:**

- Municipal regulations concerning vehicles on the beach and in the dunes: All traffic with motorized vehicles in the dunes and on the beach is prohibited in the following coastal towns (Bredene, De Panne, Knokke-Heist, Koksijde, Middelkerke, Oostende, Zeebrugge). In certain municipalities an exception is made for vehicles of public services.

## 8.8.2 Existing situation

### 8.8.2.1 Spatial delimitation

There are no specific data available for these unorganised activities.

Unorganised recreational use of the beaches and dunes often conflicts with the main environmental goals for beaches, dunes and the sea. This includes such things as coastal defense and preservation of the natural environment.

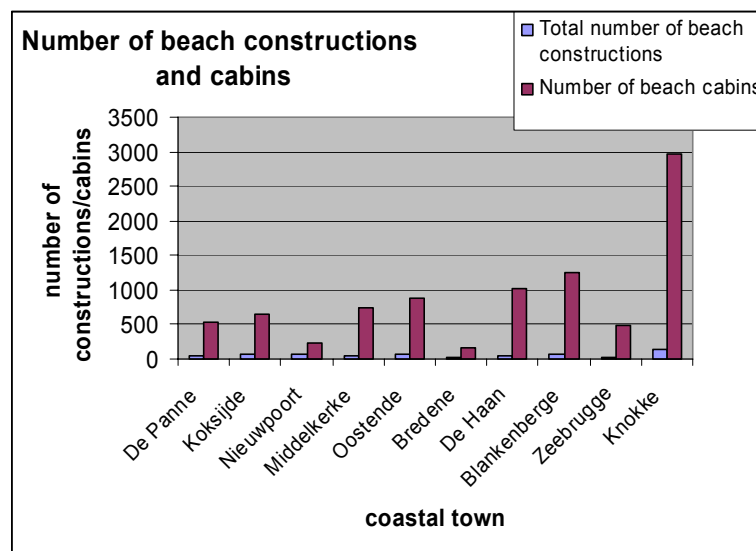
The increasing growth of coastal towns and holiday residencies next to the coastline has led to an increasing number of activities on the beach. These activities and related structures are largely spread along the beaches. People often gain access to different areas along a beach through the beach dunes. However, passage through the dunes results in the trampling of vegetation and has negative effects on the natural coastal defenses of a beach.

There's an increasing demand for the establishment of permanent structures on the beach, which cause much visual disturbance. Further, temporary structures are usually made of inappropriate materials and in a bad state of repair (PSEP 2003).

### 8.8.2.2 Type and intensity

PSEP (2003) made an inventory of the different types of constructions on beaches. Beach cabins were identified as one category of construction (Figure I.3.8m; also see § i 'Tourism'). Tourists usually use cabins to store recreational equipment. The number of such cabins on the beaches of the different coastal towns can be used to estimate the intensity of the unorganised beach recreation on these beaches.

**Figure I.3.8m: Number of beach constructions and cabins in the different coastal towns (PSEP 2003)**



## **8.9 INTERACTIONS APPLICABLE TO ALL SUBUSES**

### **8.9.1 Suitability for user**

Details – if applicable – can be found in the chapter that is specifically dedicated to “Suitability”.

### **8.9.2 Impact on other users**

Details – if applicable – can be found in the chapter that is specifically dedicated to “Interaction among users”.

### **8.9.3 Impact on environment**

Details – if applicable – can be found in the chapter that is specifically dedicated to “Interaction between users and the environment”.

#### **Biological**

- High intensity of tourism and recreation can disturb the benthos of the beaches and the birds residing in the area.
- Noise impact
- Solid waste

#### **Geophysical impact**

- Disturbance of the sediment by recreational activities
- Solid waste

### **8.9.4 Impact on socio-economy**

Details concerning the socio-economic importance of tourism in the coastal area can also be found in the final report of the MAREDASM project (Maes et al. 2002).

#### **Economic**

**Commercial accommodations** (hotels, camping accommodations, holiday centres, holiday villages) (Westtoer 2002):

Overall turnover based on the estimated average expenses per overnight stay:

- 1992 overall turnover = € 327600000
- 2000 overall turnover = € 341800000

**Individual holiday rental homes** (Westtoer 2002):

- 1992 overall turnover = € 424400000
- 2000 overall turnover = € 322500000

**Second residencies** (Westtoer 2002):

Almost no information on expenses during overnight stays in second residencies exists. Therefore an estimate of the overall turnover was based on hypotheses of expenses corresponding with those of commercial accommodations.

- 1992 overall turnover = € 300400000
- 2000 overall turnover = € 425000000

**One day tourism** (Westtoer 2002; Flemish Ministry of Employment and Tourism 2004):

No accurate and scientifically based data is available concerning the revenue generated by one-day tourism in the coastal towns. The following estimates of the total turnover made by one-day tourism are generated by using hypotheses on the expense patterns of the tourists (Westtoer 2002).

- 1992 overall turnover = € 469000000
- 2000 overall turnover = € 507000000

These estimates are based on the estimated number of day tourists stated by Westtoer (2002).

The statement of the Flemish Minister of Employment and Tourism (2004) gave the following estimate of the overall turnover made by one-day tourism:

- 2003 overall turnover = € 675000000

This number is based on an average expense of 35 € per person/day (estimated after an inquiry of 11,000 day tourists done by Westtoer).

Other sources (e.g. WES) calculated different numbers of day tourists, which makes it very difficult to draw conclusions on the extent and turnover of this activity. Further research is needed to determine the socio-economic importance of one-day tourism to the coast.

## **Social**

**Employment in the tourist/recreational sector** (Westtoer 2002; Samuelov 1999):

Although incomplete, the only available dataset on employment in the tourist/recreational sector comes from the Provincial Service for Tourism and Recreation (Westtoer 2002). Employment due to tourism and recreation is generated by different sectors. Because it is difficult to separate the employment due to tourism and from that linked to local population, only those sectors with a direct link to tourism and recreation are included:

- accommodation facilities
- restaurants and bars
- real estate agencies
- recreation facilities

Not included are:

- shops
- bakeries
- hair dressers
- supply companies (indirect employment)

The number of registered compensated employers in the tourist/recreational sector of the coastal area is given in table I.3.8u.

**Table I.3.8u: Number of registered compensated employers in the tourist/recreational sector in the coastal area (Westtoer 2002; Samuelov 1999).**

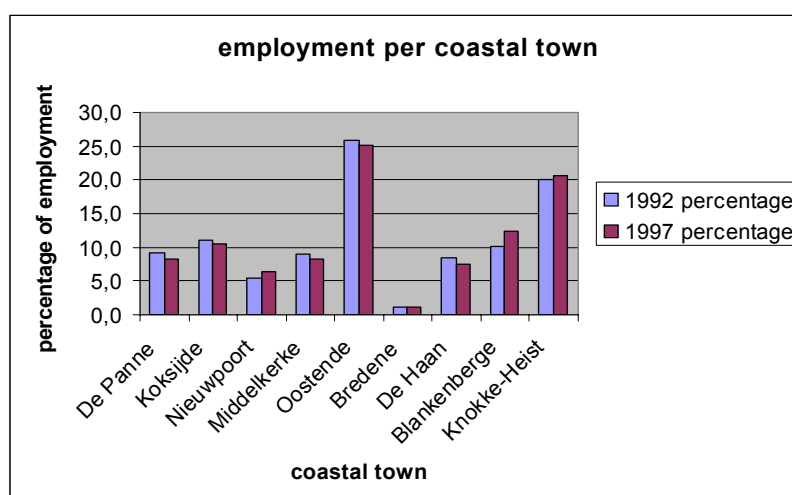
Sectors	1992	1997	2000
Accommodation (1)	2724	2689	2562
Restaurants and bars (2)	3120	3531	3923
Real estate agencies (3)	1085	1099	1102
Recreation (4)	873	950	1023
<b>Total</b>	<b>7784</b>	<b>8269</b>	<b>8610</b>

These numbers can be divided over the different coastal towns, and can give an idea of the socio-economic importance of the tourist/recreational sector for these towns (Table I.3.8v, Figure I.3.8n).

**Table I.3.8v: Numbers of registered compensated employers in the tourist/recreational sector in the different coastal towns (Westtoer 2002; Samuelov 1999).**

	1992						1997					
	1	2	3	4	total	%	1	2	3	4	total	%
De Panne	211	289	60	161	721	9.1	195	276	53	153	677	8.2
Koksijde	396	331	126	17	870	11.0	340	384	122	22	868	10.5
Nieuwpoort	223	126	68	6	423	5.4	303	150	62	5	520	6.3
Middelkerke	172	213	149	170	704	8.9	150	277	130	132	689	8.3
Oostende	604	913	278	246	2041	25.9	604	917	300	251	2072	25.1
Bredene	38	40	4	5	87	1.1	33	45	9	6	93	1.1
De Haan	433	167	57	1	658	8.3	351	209	62	1	623	7.5
Blankenberge	251	339	42	161	793	10.1	371	406	47	204	1028	12.4
Knokke-Heist	396	702	301	188	587	20.1	342	867	314	176	1699	20.5
<b>total</b>	<b>2724</b>	<b>3120</b>	<b>1085</b>	<b>955</b>	<b>7884</b>	<b>100</b>	<b>2689</b>	<b>3531</b>	<b>1099</b>	<b>950</b>	<b>8269</b>	<b>100</b>

**Figure I.3.8n: Numbers of registered compensated employers in the tourist/recreational sector in the different coastal towns (Westtoer 2002; Samuelov 1999).**



All coastal towns have the same percentages of compensated employment in 1992 and 1997, so the employment due to tourism and recreation seems not to have changed drastically over the years. This factor can be used to extrapolate the intensity of tourism/recreation in the different coastal towns.

**Independent direct employment in the tourist/recreational sector:**

Next to registered compensated employment, independent direct employment also occurs in the coastal area. These persons are mainly involved in restaurants, bars and in the entertainment sector (Table I.3.8w).

**Table I.3.8w: Number of independent employers in the tourist/recreational sector in the coastal area (Westtoer 2002; Samuelov 1999).**

Sectors	1995	2000
Restaurants and bars	1771	1605
Entertainment	169	264
<b>Total</b>	<b>1940</b>	<b>1869</b>

No detailed numbers per coastal town are available for this kind of employment.

In 2000 a total of 10479 persons were employed in the tourist/recreational sector.

**Beach fisheries/shrimp fisheries:**

Due to the limited amount of information concerning beach fishing/shrimp fishing it is not possible to make a socio-economic assessment of this activity. Another inquiry done by the V.V.H.V. (2002) investigated the socio-economic importance of beach angling but also that of all other angling disciplines (also angling in freshwater environments). Table I.3.8x gives an overview of some results of the inquiry.

**Table I.3.8x: Results of V.V.H.V. inquiry (2002), compared to information from 1997.**

	1997	2001
Total number of respondents	2348	1430
Percentage of beach anglers (from beach, dikes, ... etc)	17 %	14.5 %
Percentage of sea anglers (from boats)	20 %	17 %
Number of beach anglers	399	207
Number of sea anglers	470	243

Anglers normally practice more than one angling discipline. In 1997 anglers practiced on average 2.3 disciplines and in 2001 this was on average 2.4 disciplines.

Taking this into consideration it is possible to calculate the chance that a certain discipline is executed at a certain moment in time (Table I.3.8y).

**Table I.3.8y: Estimates that sea or beach angling was performed in 1997 and 2001 (V.V.H.V. 2002).**

	<b>1997</b>	<b>2001</b>
Total number of respondents	2348	1430
Chance for beach angling (from beach, dikes ... etc)	7.4 %	6.0 %
Chance for sea angling (from boats)	8.7 %	7.1 %
Total chance for beach + sea angling	16.1 %	13.1 %

When taking into account the number of anglers that obtained a fishing permit in 2001 (40000) and the percentage of respondents (40%) that had such permits, it is possible to calculate the total number of anglers in 2001, namely 175000. Since the inquiry was not representative of occasional anglers, which fish less than 10 times a year (only 1.7 % of the respondents), the total number of anglers in 2001 is definitely underestimated. Nevertheless, the total number of anglers can still be used as a guide to estimate percentages for different disciplines (Table I.3.8z).

**Table I.3.8z: Numbers of beach and sea anglers in 2001 (V.V.H.V. 2002)**

Discipline	Percentage	Number
Beach angling	6.0 %	10500
Sea angling (from boats)	7.1 %	12425
Total beach + sea angling	13.1 %	22925
Total angling	100 %	175000

Flemish anglers spent on average € 600 per year on their hobby in 2001. This amount includes that of angling material, bait and feeders, membership costs, permit costs, travel costs, boat rental, specific clothing, purchase of specific sport magazines, and books ... etc. This gives the following turnover:

**Table I.3.8aa: Total turnover for the different sea angling disciplines in 2001 (V.V.H.V. 2002).**

	<b>Beach angling</b>	<b>Sea angling</b>	<b>Beach + Sea angling</b>
<b>Total turnover (€)</b>	6300000	7455000	13755000

**Other sub-uses:**

There are no socio-economic data available for land yachting/sport animation/horseback riding and other (unorganised) beach recreation.

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