

Restriction of the circulation of small pleasure boats on the rivers of Wallonia, Belgium

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Abstract The regional authorities of the Walloon Region in the south of Belgium have regulated the circulation of pleasure boats, and kayaks in particular, so as to limit the conflicts between different uses of rivers (e.g. nature conservation, recreational fishing and canoeing). The regulation was enacted in 1994, using the federal law of 1973 on nature conservation as its basis. It was made necessary by the recent and important development of river-based recreational activities and by the need to protect the aquatic environment, the rivers, and the associated fauna and flora. The limitations were determined according to season, flow and time of the day. Authorized types of boat are described in the present study, and the conditions of access to the embarkation and disembarkation sites along the rivers are set out. The limitations to canoeing were settled according to the river classification. Minimum flow rates were determined for rivers where the necessity for protection was the highest because of the very high activity of rented kayaks and the risk of overcrowding the river. An information system allows the kayak operators and the sportsmen to be informed daily on the possibilities for canoeing.

KEYWORDS: canoes, resource use conflicts, rivers.

Introduction

The Regional Authorities of the Walloon Region in the south of Belgium have regulated the circulation of pleasure boats, and kayaks in particular, so as to limit the conflicts between different uses of rivers (e.g. nature conservation, recreational fishing and canoeing). The regulation was enacted in 1994 (Regional Regulations 1994, 1996), using the federal law of 1973 on nature conservation as its basis (Federal Law 1973). It was made necessary by the recent and important development of river-based recreational activities, and by the need to protect the aquatic environment, the rivers, and the associated fauna and flora.

Example of the River Lesse

Conflict between users of the River Lesse is the oldest and the best documented example in Wallonia. The river (length = 100 km) is the most attractive in the region. The navigation of

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kayaks on the lower Lesse (length = 20 km, width = 20–30 m) is the densest in Belgium. The fleet size of the three kayak operators located on this section of the river is estimated at 4500 boats. During the high season in summer, the fleet can be completely deployed once a day and partially for a second time. During the busiest hours of these days (between 1000 and 1600 h), the local traffic density can reach 15 kayaks min^{-1} .

The fish population is mixed, with a predominance of cyprinids, *Barbus barbus* (L.), *Leuciscus cephalus* (L.) and *Chondrostoma nasus* (L.), and salmonids, *Salmo trutta* L. and *Thymallus thymallus* (L.). Because of the diversity of the fish population and the presence of different campsites along the banks, recreational fishing is also a very attractive activity. Angling occurs mainly at dawn and dusk during spring for salmonids, and during summer for salmonids, cyprinids and predatory fish.

The Lesse valley is also of general interest for wildlife and habitat conservation. Human activity is potentially detrimental to the nesting of several water birds, especially *Alcedo atthis* (L.) and *Riparia riparia* (L.), and to the development of in-stream and riparian vegetation. Treading on gravel, macro-invertebrate habitats and fish spawning grounds is of particular concern.

General principle

The navigation of small pleasure boats on the rivers of Wallonia can be classified as listed below.

- 1 Navigable rivers include canalized rivers and artificial ship canals, where permanent historical navigation rights exist. Several large non-navigable rivers are also included in this category, but for these water bodies, no navigation rights existed before 1994, and therefore, the navigation of small pleasure boats was not regulated. On the large non-navigable rivers, the navigation of pleasure boats is henceforth allowed during the entire year.
- 2 Intermediate non-navigable rivers are water bodies where canoeing is only allowed between October and March, when biological activity around the river is lower and discharge rates are often adequate.
- 3 Other rivers, narrow rivers and brooks include water bodies which are managed by provincial or local authorities, and where navigation is rarely possible, even for kayaks. Navigation is forbidden in these rivers at all times.

Restrictions for nature conservation

In rivers open to canoeing, the Ministry of the Environment may impose local closure periods for nature conservation. Such action is mainly as a result of low water levels. During these periods, the water level in the river is not always sufficient to allow an easy passage for kayaks. The number of groundings can then become very significant, and can have serious detrimental effects on vegetation, sediments and the river environment. Moreover, in summer, periods of drought are often associated with periods of fine weather and river overcrowding.

Minimum flow rates were determined for rivers, where the need for protection was greatest.

If the flow is reduced to the minimum rate, canoeing is automatically prohibited. When sufficient flow is re-established, canoeing is authorized again. The minimal flow rates were assessed and then agreed by direct observation at the reference sites of the rivers under different hydrological conditions.

The water flow is measured by means of flow meters installed on the affected rivers and automatically linked by telephone to headquarters. Every day, the mean water flow during the three preceding days is compared to the minimum flow rate set for the river. If the measured flow is less than the minimal rate, a procedure of closure is initiated, including the wording of a ministerial decision, information notice boards in the affected embarkation areas, and messages are modified on the phone and Internet servers.

The definition of minimum flow rates is the key element for deciding between the interests of the different users of the rivers. The critical case of the River Lesse in 1996 (very dry summer) is illustrated on Figure 1 for three fixed minimum flow rates assigned to three different sections of the river. The importance of the corresponding closure period is presented for different rivers of Wallonia as the number of closed days (1996 and 1997) in Table 1.

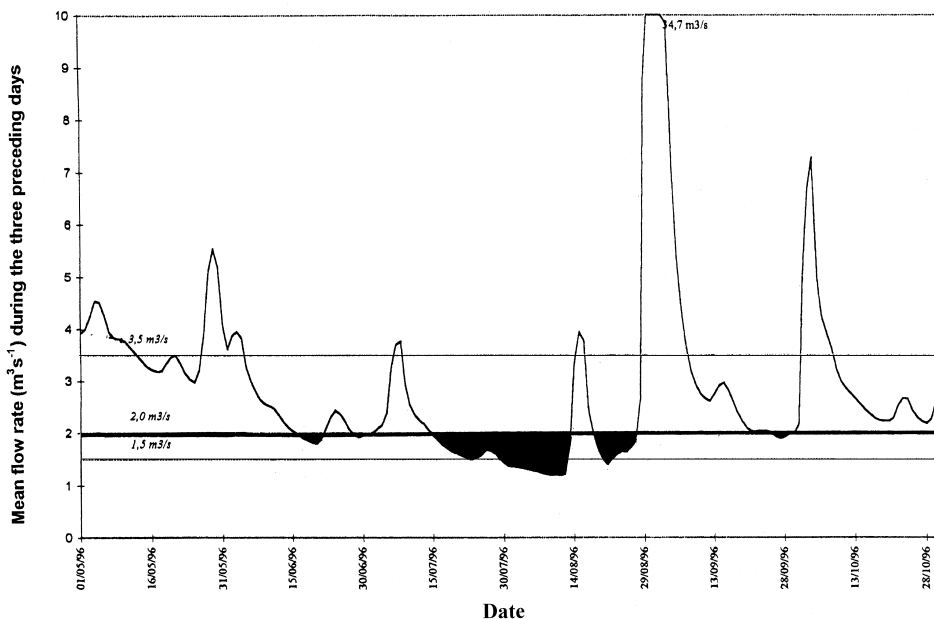


Figure 1. Number of closed days for canoeing (in black) on the River Lesse in 1996. The mean flow rate ($\text{m}^3 \text{s}^{-1}$) during the three preceding days is shown.

Other regulations

The authorized types of boat targeted by these restrictions are fishing boats, canoes, kayaks, inflatable boats (maximum capacity = three people) and rafts used by children.

Table 1. Minimum flow rate and number of closed days for rivers in Wallonia, Belgium, in 1996 and 1997

Month	Number of days	River (minimum flow rate)									
		Lesse (2 m ³ s ⁻¹)		Semois (2.2 m ³ s ⁻¹)		Viroin (1 m ³ s ⁻¹)		Ourthe (3 m ³ s ⁻¹)		Ambleve (2.5 m ³ s ⁻¹)	
		1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
January	31	0	0	0	0	0	0	0	0	0	0
February	29 (28)	0	0	0	0	0	0	2	0	0	0
March	31	0	0	0	0	0	0	0	0	0	0
April	30	0	0	0	0	0	0	1	0	0	0
May	31	0	0	0	0	0	0	15	0	0	0
June	30	9	0	0	0	19	0	27	0	0	0
July	31	18	0	5	0	26	0	31	0	11	0
August	31	23	0	13	0	23	8	28	20	14	0
September	30	5	8	0	7	12	22	26	25	0	0
October	31	0	10	0	10	10	10	21	23	0	0
November	30	0	0	0	0	0	7	0	10	0	0
December	31	0	0	0	0	0	0	0	0	0	0
Total	366 (365)	55	18	18	17	90	47	151	78	25	0
July–August	62	41	0	18	0	49	8	59	20	25	0

On non-navigable rivers, canoeing is only authorized:

- 1 between sunrise and sunset (from 1 October to 15 March);
- 2 between 1000 and 1700 h (from 16 March to 14 June); and
- 3 between 0930 and 1800 h (from 15 June to 30 September).

Access to the rivers is regulated, and each embarkation or disembarkation area must be officially specified.

The Minister of the Environment can also depart from the general principle in order to authorize local and limited navigation for scientific, festive or sportive purposes.

Internet server

An Internet server allows the kayak operators and the sportsmen and women to be informed daily on the possibilities for canoeing. The address of the server is «[HTTP://mrw.wallonie.be/dgme/sibw/legislations/consnat/kayaks/kayak.html](http://mrw.wallonie.be/dgme/sibw/legislations/consnat/kayaks/kayak.html)». The following information (in French) is available: a general description of the regulations; legal references; a list of embarkation and disembarkation areas; daily possibilities for canoeing in the different rivers; and forecasting for the next few days.

Discussion

The definition of minimum flow rates is the key element used to decide between the interests of the different users of the river. However, a definition of flow rates based on rationality is practically impossible. Several reasons can be put forward. The first is the lack of precise data linking canoeing pressure and the different components of the aquatic environment. Moreover, the weight attributable to these different components is mostly dependent on the geographical, social and economic situation, which can vary dramatically. Finally, the user groups are heterogeneous and their interests differ widely (e.g. type of interest, representativeness of groups and form of pressure). For these reasons, the efficiency of the regulations, the benefit to the aquatic environment and the acceptability of the regulations by the user groups is rarely checked.

In the example of the River Lesse, the economic context is very important. During the high season, the income from the kayak rental can reach BEF 2 000 000 (i.e. 50 000 Euros) per day. This explains the high economic pressure from the kayak operators. Indeed, the minimum flow rates were defined after a subjective and reasonable compromise between water level and the ability to navigate the river easily. Because of the pressure by different user groups, some definitions were reviewed, as suggested in Figure 1, where the initial flow rate of $2 \text{ m}^3 \text{ s}^{-1}$ was modified and split into three rates. In a lower part of the river, where the traffic density is the highest, the modification resulted in a reduction of the minimum rate ($1.5 \text{ m}^3 \text{ s}^{-1}$), and at the same time, a better protection of the environment against the navigation was given to an upper part of the river ($3.5 \text{ m}^3 \text{ s}^{-1}$). In the intermediate part, the rate was unchanged. This illustrates the differential pressure brought by the different user groups.

References

- Federal Law (1973) Loi du 12 juillet 1973 sur la Conservation de la Nature. *Moniteur Belge* 11 September 1973, 10 306.
- Regional Regulations (1994) Arrêté du Gouvernement Wallon réglementant la circulation des embarcations et des plongeurs sur et dans les cours d'eau. *Moniteur Belge* 9 August 1994, 20 194.
- Regional Regulations (1996) Arrêté du Gouvernement Wallon réglementant la circulation des embarcations et des plongeurs sur et dans les cours d'eau. *Moniteur Belge* 25 June 1996, 17 500.