Knowledge about the implications of climate change on the economy is highly important for national and international governments as these implications may be far reaching. One of the economic sectors that is thought to be sensitive to climate circumstances is the transport sector and the inland waterway transport sector in particular. It is likely that climate change will affect the navigability of the inland waterways. For North West Europe, it is expected that in winter the occurrence of high water levels will be more frequent, while in summer an increase in the number of days with low water levels is probable. This dissertation focuses on the effect of low water levels on inland waterway transport prices and how the inland waterway transport market adapts to low water levels. We find that transport prices rise substantially in periods with low water levels, leading to welfare losses. We also find that the extent to which the transport price rises is sensitive to imbalances in trade flows. Transport flows in North West Europe seem to adapt to the increase in inland waterway transport prices due to low water levels: a small part of the inland waterway cargo is shifted to competing transport modes, road and rail. We do not find that the inland ships’ navigation speed reacts to higher transport prices.