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**Type 23:****Backwater and brackish water influenced Baltic Sea tributaries**

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**Distribution in river landscapes and regions according to Briem (2003):**

Young moraine landscapes: ground moraines

**Picture:**



*Hellbach (Mecklenburg-West Pomerania). Photograph: H. Schuhmacher*

**Short description of morphology:**

This stream type is found in the flat coastal plains of the Baltic Sea. The streams flow into slightly brackish, coastal waters, which are often separated from the Baltic Sea by a barrier beach and are silted up to a varying degree.

As long as the barrier beach formation is not completed, there is an open connection to the Baltic Sea (e.g. in the "Bodden" waters along the Baltic Sea coast of Mecklenburg-West Pomerania). In the naturally backwater influenced region the mineral substrates of the river channel beds lie much lower than the present water mark of the Baltic Sea (9 m in the lower reaches of the Recknitz). In these regions, organic deposits from natural sedimentation cover the mineral substrates and fill the channel to its present bottom. In smaller streams channel substrates contain humic sand and sand bars and deep pools can form. As a result of backwater and brackish water influence, organic mud is the dominant substrate. This mud causes strong oxygen consumption.

**Abiotic profile:**

**Size class:** 10 - 1.000 km<sup>2</sup> catchment area

**Slope of the valley floor:** < 0,5 ‰

**Flow category:** very slowly flowing to standing water (backwater influence); reversal of flow direction is natural

**Channel substrates:** dependent on the regional and local geological and pedological situation; tendency to high levels of detritus and fine sediments

**Physico-chemical water conditions:**

(will be supplemented)

**Conductivity [S/cm]:**

**pH-value:**

**Alkalinity [°dH]:**

**Total hardness [°dH]:**

**Flow regime & hydrology:**

Hydrology is dependent on Baltic Sea water levels (backwater influence).

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<b>Characterisation of the macroinvertebrate community:</b>	<p><b>Functional Groups:</b> The macroinvertebrate community is characterised by species from the marine and freshwater communities with a tolerance for brackish water. True brackish water species also occur.</p> <p><b>Selection of type-specific species:</b> Typical species are the caddis fly <i>Limnephilus affinis</i>, the true flies <i>Chironomus aprilius</i> and <i>C. salinarius</i> as well as the crustaceans <i>Gammarus tigrinus</i> and <i>G. zaddachi</i>.</p>
<b>Characterisation of macrophyte and phyto-benthos communities:</b>	<p>The macrophyte communities give evidence for higher salt concentrations. Submerged plants include the tassel pondweed (<i>Ruppia cirrhosa</i>), brackish water forms of the pondweed <i>Potamogeton pectinatus</i> and horned pondweed (<i>Zanichellia palustris</i> ssp. <i>pedicellata</i>).</p>
<b>Characterisation of the fish fauna:</b>	<p>The fish fauna can be very diverse, although usually only a few euryoecious species like bass, roach and rudd dominate. Seasonally, migrating fish can occur in higher abundances, when the upper reaches of the catchment provide suitable habitat for gravel-spawning species like river lamprey and sea trout.</p>
<b>Comments:</b>	<p>Morphologically, this meandering stream type resembles the streams of riverine floodplains. A major difference is the backwater influence during high water levels of the Baltic Sea.</p> <p><b>Notice:</b> The description of this stream type may be supplemented with results from currently running research projects.</p>
<b>Examples of typical streams</b>	<p>Hellbach (Mecklenburg-West Pomerania)</p>
<b>Comparative literature (selection):</b>	<p>MEHL &amp; THIELE (1998) „Detritusgeprägte Bäche der Küstenüberflutungsmoore“, LANU (2001) „Sand- und schlickgeprägte Fließgewässer der Flachküsten</p>