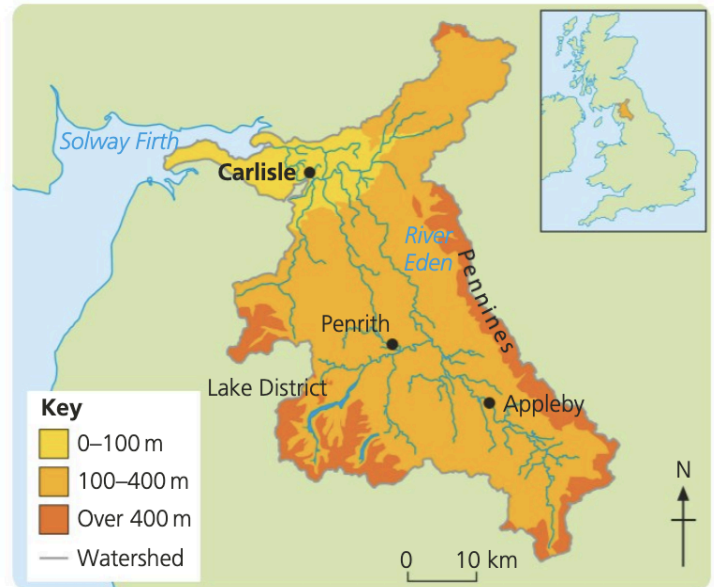


## Student Notes: Case study: The River Eden, Carlisle

[Click here](#) to listen to a podcast about this topic.

The River Eden is in Cumbria in the northwest of England. Its source lies in the hills of the **Pennines** and its mouth is the Solway Firth, which opens into the Irish Sea. The **catchment area** has many tributaries with their source in the hills and mountains of the northwest. The **watershed** around the catchment area follows a line through the peaks of the Lake District and Pennines (map A).

The Lake District is one of the wettest parts of England, with **annual rainfall** up to 2800 mm, over three times the national average. Tributaries flow steeply downhill into the River Eden. The river then flows north along the Eden Valley, originally carved by **glaciers** during the Ice Age. The valley has a history of flooding, with the towns of Appleby, Penrith and Carlisle at greatest risk. Two **tributaries** - the River Caldew and River Petteril - both flow into the River Eden in Carlisle.



**A:** The catchment area of the River Eden

The River Eden has **flooded** twice in Carlisle in the twenty-first century. First, in 2005, over 1800 homes were flooded and three people died. It was described at the time as a 'once in a hundred year' event. Ten years later, in 2015, despite improved **flood defences**, Carlisle was flooded again. This time, even more homes were left without electricity. Have the lessons been learned since 2015, or could it happen again?



**B:** 1:50,000 OS map extract of Carlisle