Environment: habitat and conservation
River Severn Floods

Voice Over
Eighteen thousand years ago the River Severn changes course. Glacial deposits block its route north to the Irish Sea, forcing it to turn south via the Bristol Channel. Autumn 2000 the River Severn bursts its banks. Nearly two thousand properties are flooded. Shrewsbury is flooded three times in six weeks.

[Clip of floods]

Dr. Sandy Smith, Open University
Whether you take the geological timescale, or zoom in to the present day, the River Severn is in a state of continual transformation. The river is much calmer today but if I'd been here in autumn 2000 I'd be up to my knees in water and the equivalent of an Olympic swimming pool would be passing under English Bridge here every second. And if I'd been standing where Shrewsbury is now a few hundred million years ago there wouldn't have been a river here at all.

Rivers are not constant entities. They transform and renew themselves all the time.
The Severn is the longest river in Britain. From its source on Plynlimon in the Welsh mountains it flows east past Newtown, then north-east into England. Passing Shrewsbury and Ironbridge it then turns south through Worcester and Gloucester before flowing out to the sea.

A brief glimpse of its geological history shows the Severn is no stranger to change.
If you go back into geological time, about 220 million years, you won't find a river where the Severn flows today, you'll find a desert. Rocks in an old quarry at Nesscliffe, just outside Shrewsbury, provide the clues. For geologists the present is the key to the past. This rock, if I scrape a bit of it off, is made up of red sand grains so it's a sandstone. It's also got layers in it. These would intersect each other, like this. So, we've got a red sandstone with large intersecting layers and this is typical of a sand dune in a modern-day desert. At the time this rock was formed, Britain was near the Equator, at about the same latitude as the Sahara Desert, until plate tonics shifted it northwards. There'd have been no rivers around and definitely no River Severn.

Jumping forward to about two million years ago, just before the Quaternary Ice Age, the River Severn is in existence, but flowing along a very different course, flowing through Wales, like it does today, but then turning north to the Irish Sea. So what made it change to its current course? We can find the answer at Ellesmere, just north of Shrewsbury. I'm at Wood Lane Quarry and here there's evidence of why the River Severn changed its course. There's a wide range of rock sizes here, from this fine sands through to these pebbles and this larger boulder and even to this gigantic boulder beneath my feet. There's also a wide variety of rock types here. This is a sandstone like we saw at Nesscliffe, this is a local rock, this is also a local rock; this is a limestone and it's got some corals in it. But here this rock is granite; this is from the Lake District. And this one comes from even further afield; this has got stripes in it, it's a metamorphic rock, it comes from Scotland. And the transport of rock this far, of this size, needs something extremely powerful and the only thing that can do that is an ice sheet or glaciers.

So ice sheets and glaciers moved these rocks here from the north. At the end of glacial times, it began to warm up and the ice melted. As the ice retreated, it left large deposits of sediment behind called glacial moraines. These blocked the course of the River Severn. It couldn't flow north through the moraine so it turned south and went out to sea through the Bristol Channel, which is what it does today.

But even within more recent time you can see the rivers being on the move. This may look like a grassy field, but in fact it’s the Old River Bed at Shrewsbury. This is the channel the river must have flowed through five thousand years ago. Today the river is one and a half kilometres away, showing that over time the river has literally taken itself off somewhere else. And the process never stops. Rivers can change their channel even on much shorter timescales.