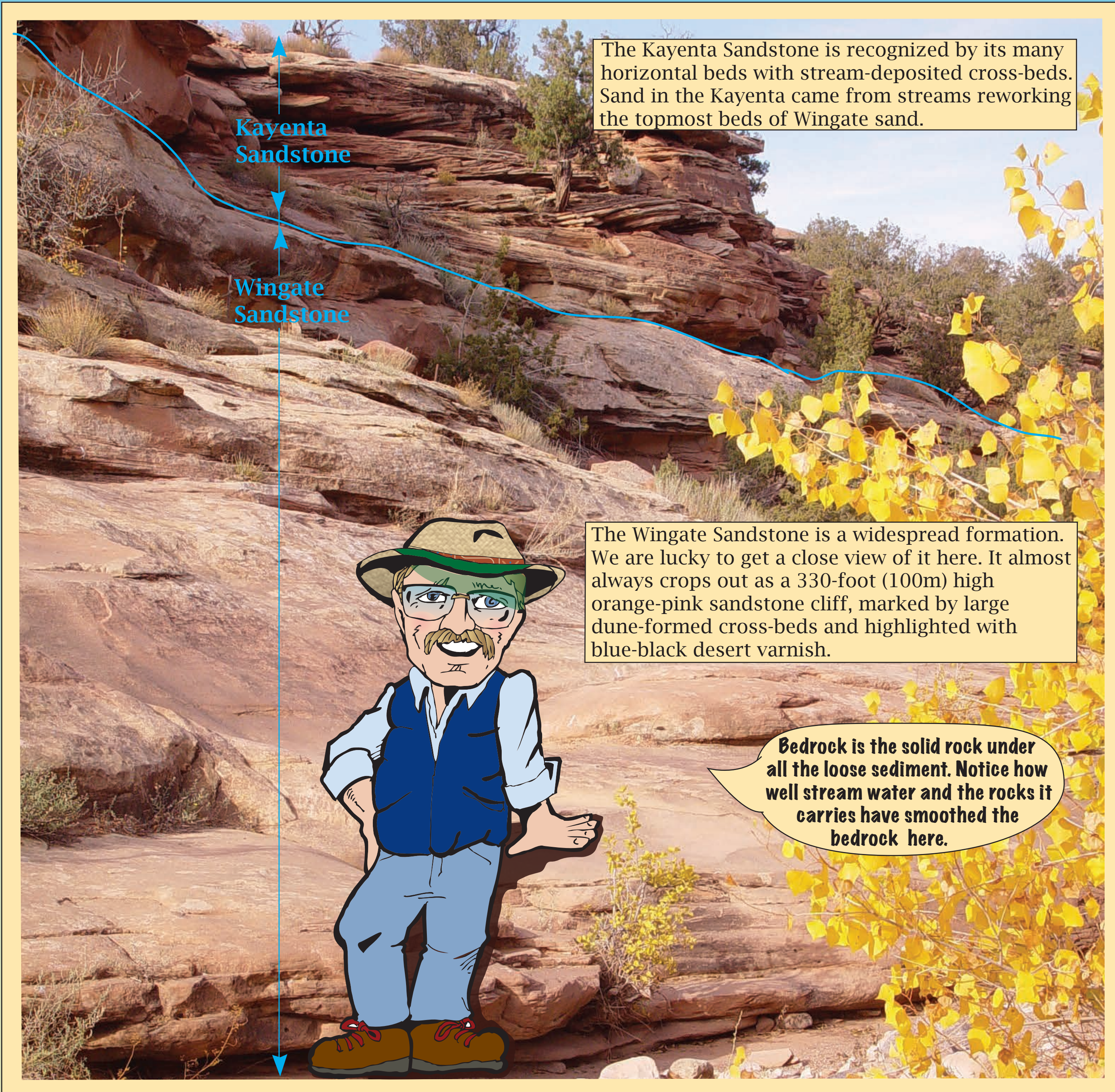


19. The Wingate and Kayenta Sandstones: Stories from the Sand

The Wingate and Kayenta sandstones tell a story of desert sand dunes followed by a wetter period with streams and rivers. This was early in the time of the dinosaurs. These sandstones don't tell much about life at their time because fossils are rarely found in them. This has also made it difficult to tell exactly how old they are.

Think about time for a moment: these rocks are between 220 and 180 million years old. Compare their age to the ages of the Entrada Sandstone (165-161 million), the Morrison Formation (156 to 147 million), and the Dakota Formation (95 million).



Cross-Beds

Sedimentary rocks are laid down in horizontal beds. Between the bedding planes, there are often cross-beds, thin sloping beds formed by water or wind moving and dropping sand grains. Wind and water each form different-shaped cross-beds. Notice the cross-beds slope down (dip) toward where the current is going.

Water-Formed Cross-Beds

around 3 ft (1 m)

Wind-Formed Cross-Beds

10 ft (3 m) or larger

Directions of Currents

Kayenta Rivers

Water-formed cross-beds tell the current directions, the directions the streams flowed. That is also the way the land sloped. These measurements show the streams that deposited the Kayenta Sandstone here generally flowed westward.

Wingate Winds

The slopes of the wind-formed cross-beds in the Wingate Sandstone tell which way the wind blew. (There are variations because the wind varies). They show the wind generally blew toward the southeast.

This cliffy outcrop is typical for the Kayenta and Wingate sandstones.

KEY

- D1 BLM trail and number
- 5 Mike's Trail Sign
- P Parking
- R Restroom

0.5 mile
0.5 km

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