Wood is a transient and essential ingredient of forested river corridors. Just like sediment, wood moves downstream and breaks down over time. As it sporadically moves downstream, wood actively shapes the riverine ecosystem (Figure 1). Wood slows down the flow of water, sediment, energy, and nutrients. This in turn diverts those flows sideways, into the banks and onto the floodplain, and vertically, into the channel bed. By altering these flows of water, sediment, energy, and nutrients, wood improves habitat, provides beneficial geomorphic functions, and can make it easier for a river to absorb disturbances like fires and floods.

The functions of wood do not come simply from wood load, or the quantity of wood in the river corridor. Instead, wood function derives from how wood interacts with flows of water and sediment, its stability during various flows, position in the river corridor, surrounding biotic activity, and how it decays and breaks down. Unfortunately, wood is much less common in rivers today than it was historically, and rivers are missing much of the beneficial functions wood can provide for biota that live along the river (including humans).
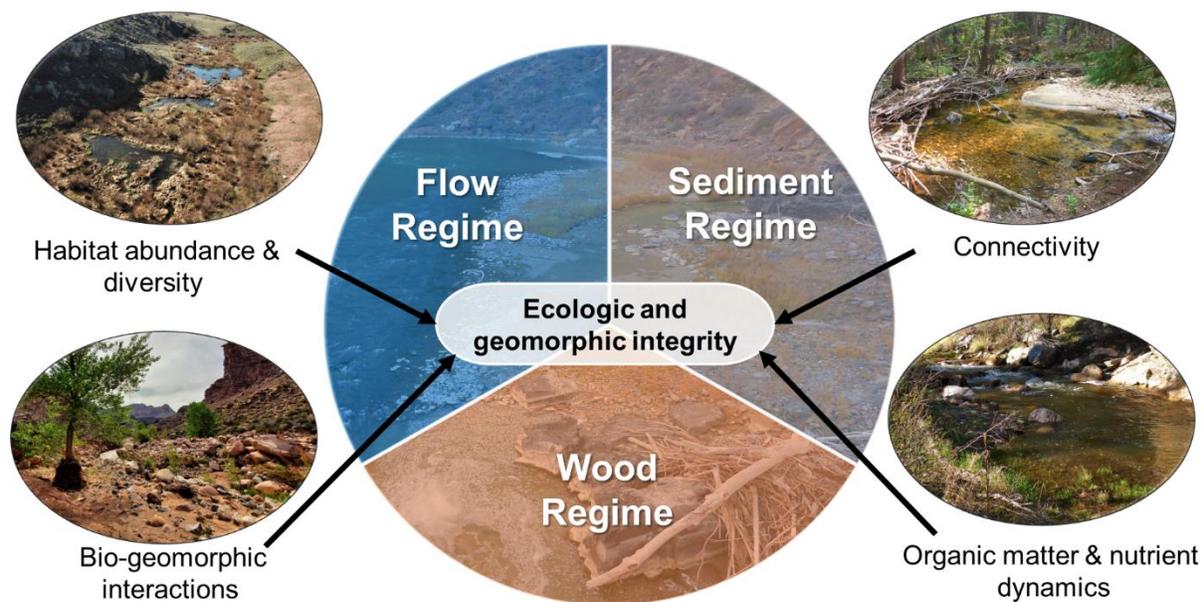

Figure 1: The wood regime works alongside the flow and sediment regimes to shape the ecologic and geomorphic integrity of river corridors. Wood influences the four habitat characteristics listed around the margins. Modified from Wohl et al. (2019).

Restoring wood to rivers requires an understanding of the wood regime, or the recruitment, transport, and storage of wood in the river corridor. Even simple, rapid assessments of how wood gets to and moves through river networks can guide stream management, and such assessments can be performed at a range of spatial scales and levels of detail depending on management objectives.

If you are interested in learning more about the wood regime, how to assess it, and how assessing the wood regime can benefit stream management, please read "A Primer on the Wood Regime for Stream Management".