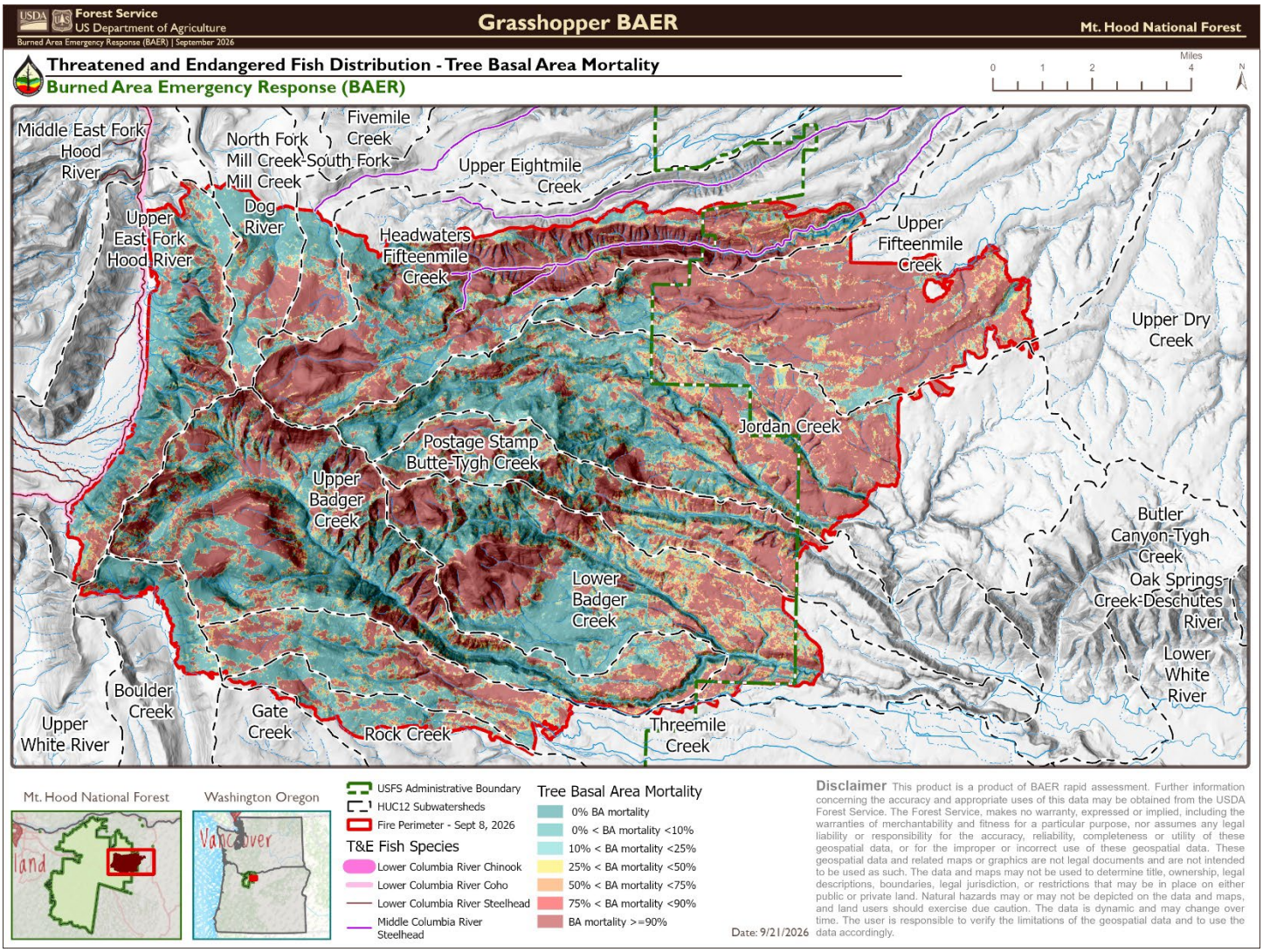


Figure 6: Tree Basal Area Mortality map of the Grasshopper Fire perimeter.

A tree basal area mortality map estimates the percentage of trees killed by a wildfire in the map area. Basal area is the total cross-sectional area of tree trunks, indicating how much total space trees take up. The map shows how much of that total tree trunk area was killed. If an area had 1,000 square acres of basal area before the fire and 500 square acres belonged to trees that died, the basal area mortality would be 50%. The higher the tree basal area mortality, the higher likelihood of negative impacts on the ecosystem. The map helps Forest managers identify areas where trees suffered the most damage or died, which can help guide recovery projects.

The map also shows the streams used by threatened and endangered (T&E) fish species. Trees support fish habitat in many ways. Tree roots hold streambanks in place to reduce erosion, while fallen logs and branches create pools where fish can rest and escape predators. Tree shade keeps streams cool, which is especially important for the survival of young fish and eggs. When a wildfire kills trees near streams, water temperatures and erosion can increase. Rain may carry more soil and ash into waterways, which can reduce water quality and kill fish eggs. These changes can put additional stress on threatened and endangered fish, though the effects depend on the fish species, the stream, and the percent of tree basal area mortality.