

## The Scenario

Conservation 2050 projects changes in land and water use patterns to prioritize ecological services to the year 2050. Trends in the protection of aquatic life and native habitats result in resource conservation and restoration of river floodplain and upland habitat functions, with commensurate changes in urban, forest, and agricultural practices. The map at right represents the landscape patterns corresponding to these trends. The primary determinants are assumptions that conservation and restoration of native habitats and the species dependent on them will be increasingly important. Assumptions were made by the PFWG with technical input from others regarding how, where, and when more conservation-oriented land and water use occur. One of the most significant assumptions is that choices will be made first regarding which areas are conservation and restoration priorities, with future land and water use minimizing adverse effects at these locations. Two tiers of conservation and restoration lands are depicted as being phased in to 2050. Tier 1 lands are managed with priority given to achieving a naturally functioning landscape (Fig. 103). Tier 2 lands are managed for sustainable production of goods and services compatible with habitat conservation values. The changes corresponding to these assumptions are projected in the amount, location, and pattern of urban, rural residential, agricultural, forest, and native vegetation land uses. Water uses are projected as water rights associated with changing land uses are exercised and, in this alternative, at times converted from out-of-stream (e.g., irrigation) to in-stream (e.g., providing fish habitat) uses. Operations of federal reservoirs assume natural flows are passed through the dams in March through April every year. Each broad type of land and water use is described below.

## Urban

Assumptions regarding increased urban densities lead to 94% of the 2050 population of 3.9 million people residing inside Conservation 2050 urban growth boundaries, which have expanded 54,000 acres beyond their 1990 extent. Of the 498,000 total Conservation 2050 UGB acres, 79% are developed and more than 20% are vegetated. This UGB expansion, larger than Plan Trend's due to protection of riparian vegetation inside UGBs, is accomplished by having new homes at higher densities (9.3 homes per acre within UGBs basinwide for homes constructed 1990-2050 as compared to 4.2 homes per acre within UGBs basinwide existing in 1990), and by redeveloping 12-15% of 1990 urban residential areas at higher densities (Table 35, p. 106). UGBs occupy 6.8% of the basin in Conservation 2050, an average annual increase of 900 acres over 1990 conditions for the 60-year period.

## Rural Residential

Within the 253,000 acres of 1990 rural residential zones (RRZ), slightly more than 26,000 of these acres were covered by rural buildings in 1990. As UGBs expand under Conservation 2050 assumptions, some 1990 RRZs are incorporated into 2050 urban areas. This results in a decline in the number of rural structures from 1990 to 2050 in this scenario. Countering this decline, this scenario assumes new rural dwellings will be created between 1990 and 2050, and that some of these will occur outside 1990 RRZs. Approximately half of these new rural dwellings will be clustered into groups on parcels 20 acres or larger in size, in areas adjacent to 1990 RRZs and well suited as Tier 1 native habitat. The clustered patterns of these dwellings allow a larger portion of rural residential parcels to remain as native habitat, with the assumption that land developers and residential owners will respond to financial, tax, and regulatory changes encouraging this pattern of rural residential development (Fig. 131, p. 109).

## Agriculture

Conservation 2050 agricultural land use remains similar in crop mix to 1990 conditions while total agricultural land area decreases significantly. Regional increases occur in the nursery sector and in grasses that appear more frequently as filter strips near wetlands. Riparian vegetation increases along streams in agricultural areas, with priority to re-vegetating water-quality limited streams on public lands. In the privately dominated lowlands, public lands are insufficient to meet assumptions, and some lower-productivity private lands are shown as restored to natural vegetation. Of the 1.37 million acres of 1990 private agricultural land, 3.7% are restored to Tier 1 riparian

areas by 2050, 1.2% are restored to bottomland forest, 1.5% to native prairie and 2.4% to wetlands. In total, 12.25% of 1990 private agricultural lands are restored to native vegetation in Conservation 2050 following assumptions that sufficient incentives will exist to sponsor such restoration. Water rights used to irrigate 1990 fields restored by 2050 to native vegetation are assumed converted to in-stream rights. The total area of land in agricultural production in Conservation 2050, defined by land use/land cover, is 1.16 million acres, a decrease of 248,000 acres from 1990 conditions. Less than a fourth of these converted 1990 agricultural acres are in urban or rural residential uses by 2050, with the balance restored to native vegetation.

## Forestry and Natural Vegetation

Federal forest lands in this scenario limit harvesting to young stands on a 60-year rotation to achieve forest age structure more comparable to natural conditions. Most federally managed forest lands are in reserves. Conservation 2050 assumes National Wildlife refuge lands leased ca. 1990 for agriculture are converted to native habitat. State forest lands have approximately half the land base in reserves, with harvesting applied to young stands on a 120-year rotation. Private industrial forest lands in this scenario show 3% of holdings reaching late successional (old growth) stages by 2050 through legacy tree management, using a 65-100-year variable harvest rotation. By 2050 the percentage of coniferous industrial forest ownership older than 80 years more than doubles from 1990 levels. Private non-industrial lands are shown managed on a 150-year average rotation. Riparian zones are shown as on federal forest lands 300 feet each side all streams, state forest lands 200 feet each side all streams, and private lands 100 feet each side all streams with additional riparian vegetation in Tier 1 areas. Willamette River mainstem channel complexity increases, especially in the historically more complex southern reaches of the river (Fig. 173, p. 133). This results in more extensive floodplain forests on flood-prone lands and near major tributary junctions.

With significant changes in the lower elevations, and forestlands occupying more than two-thirds of the basin, natural vegetation becomes more extensive in Conservation 2050. As Figure 103 shows, this alternative is organized around a set of strategic choices regarding what to conserve and restore, how much to conserve and restore, where and when to do it.

## Water Availability

Agricultural and municipal water conservation practices result in a 10% increase over 1990 levels in in-stream water rights by 2050. This is obtained by: transfer of irrigation allotment at the time of agricultural field conversion to Tier 1, improved cultivars, enhanced irrigation efficiencies, and an 8% reduction in municipal per capita water consumption rates relative to Plan Trend 2050.

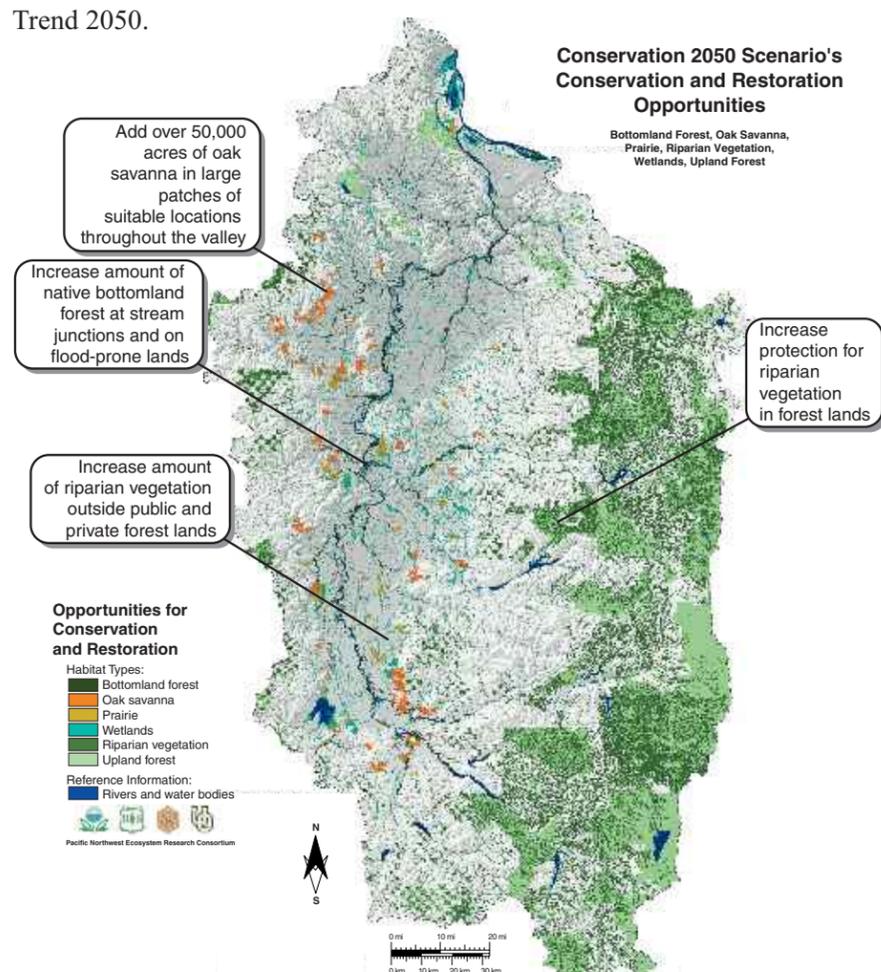
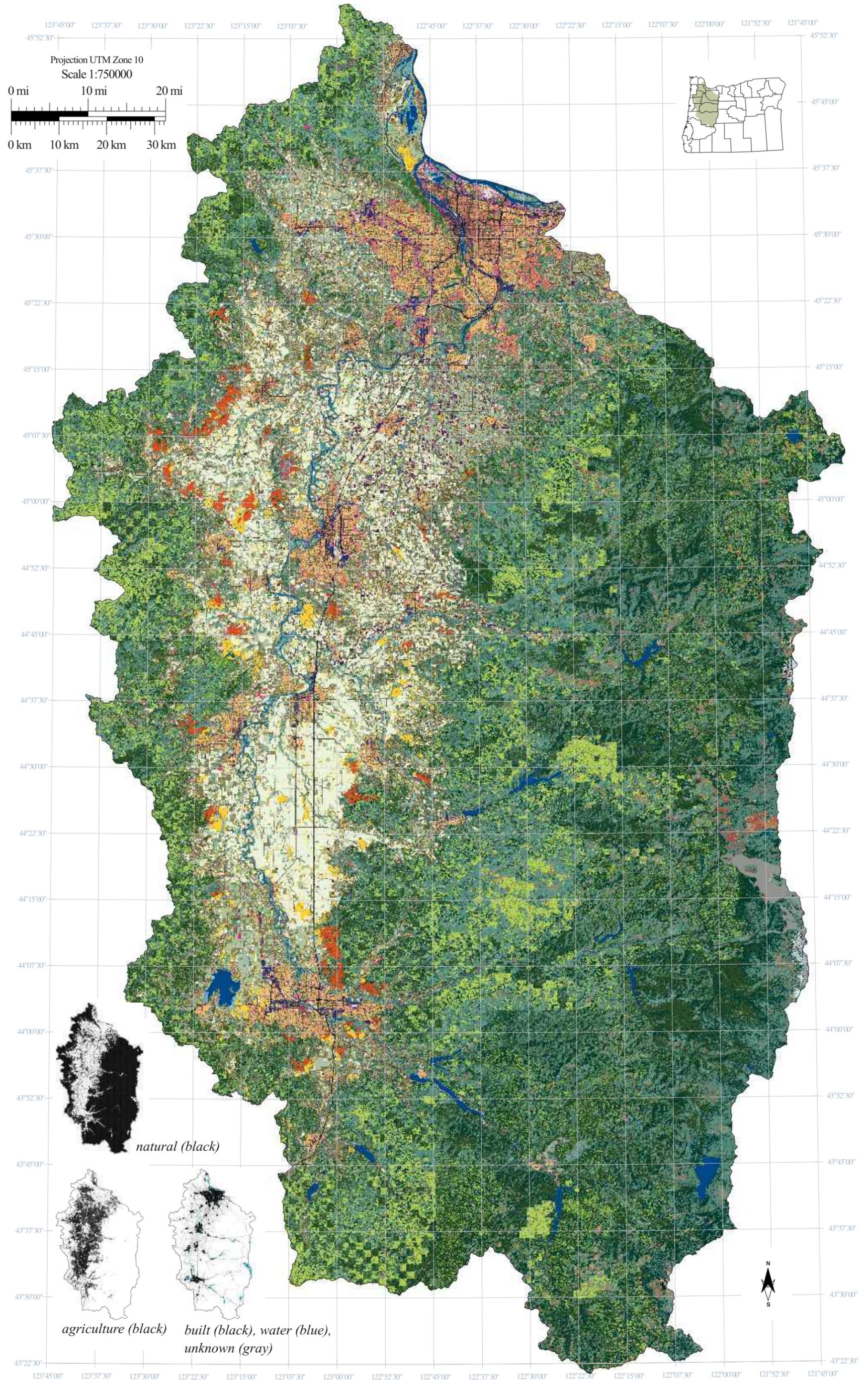


Figure 103. *The Conservation and Restoration Opportunities Map depicts the Tier 1 and 2 priority areas. These areas were incorporated into the map at right in the corresponding land cover types.*



Note: Legend for this map is the same as Land Use / Land Cover ca. 1990 on p. 78