The Scenario

The Development 2050 scenario assumes greater reliance on market-oriented approaches to land and water use, with attendant emphasis on short-term economic gain in making land and water use decisions. It assumes recent trends in the relaxation of land use laws continue, resulting in fewer restrictions on where intensive land management may occur. The map at right represents the landscape patterns corresponding to these assumptions. Urban and rural residential uses expand significantly, with 1990 forest and agricultural lands making way for these expansions. Development 2050 and the two other future scenarios are intended not as predictions, but rather to bracket a range of plausible options for future land and water use in the WRB.

The primary determinants of the patterns shown in the map at right are commuting times from major employment centers, anticipated forest management mandates under more market-oriented assumptions, existing water rights, and projected crop patterns. Changes are projected in the amount, location, and pattern of urban, rural residential, agricultural, forest, and native vegetation land uses. Changes in water use are projected as the existing water rights associated with changing land uses are exercised. Federal reservoir management assumes the ca. 1990 operational pattern: reservoirs store as much water as possible in the winter and spring, release it in the summer to meet existing stream-flow targets along the mainstem of the Willamette River. The assumptions employed regarding each broad type of land and water use are described below.

Urban

As with each of the three future scenarios, the projected population for Development 2050 is 3.9 million people, approximately double the 1990 population of the WRB. The Development scenario assumes 87% of these people will live inside urban growth boundaries, which have by 2050 expanded 129,000 acres beyond their 1990 extent. Of the 573,000 total acres within Development 2050 UGBs, over 81% are developed as homes, stores, roads, and other built features, with less than 19% of the area inside 2050 UGBs vegetated. This dramatic UGB expansion over 60 years assumes new homes are built at densities somewhat higher than exists in 1990 (6.2 homes per acre basinwide for homes constructed 1990-2050 as compared to approximately 4.2 homes per acre basinwide existing in 1990), and by redeveloping and infilling only 5% (Table 35, p. 106) of 1990 urban residential areas at this slightly higher density.

In 1990, UGBs occupied approximately 6% of the WRB. In Development 2050 they occupy 7.8%, an average increase of over 2,100 acres basinwide per year for the 60-year period. The majority of this expansion occurs in the northern portion of the basin.

Rural Residential

A key assumption of Development 2050 concerns a significant increase in the total number of people living in rural areas. Consistent with this, Development 2050 assumes a general relaxing of restrictions on where new rural residences may occur. This is accomplished by excluding fewer areas from new rural development in this scenario than in the other two future alternatives. For example, new rural residences are not excluded from areas of Class I or II soils (pp. 10-11), nor from riparian areas (pp. 40-43), nor from wetlands smaller than 5 acres in Development 2050. They are however excluded from the Federal Emergency Management Agency (FEMA) floodway (an area smaller than the FEMA 100 year floodplain), from industrial forestry parcels except when human population density exceeds 70 people per square mile, from parcels less than 1 acre in size and from parcels with less than 5 percent of their area or less than 1/4-acre suited for septic systems. The resulting pattern of 2050 rural residential land uses departs notably from trends experienced since the late 1970s (p. 108).

Agriculture

Development 2050 agricultural land use declines in area relative to 1990 conditions due to dramatic increases in land area of urban and rural residential uses. While irrigated crop, grain, and hay uses decline basinwide in this scenario, other agricultural trends vary among the north, middle, and south basin counties. Grass seed uses increase in the north and middle basin, but drop by more than half in the south basin. Pasture uses increase in the north and south basin but drop by nearly one-third in the middle basin. The total area of land in agricultural production declines to 1.291 million acres in Development 2050, which equals approximately 17% of total basin area. Approximately 181,000 acres of 1990 agricultural lands are converted to other uses by 2050 under this scenario, with most of these converting to rural residential and urban uses or fragmenting into areas too small to farm.

Forestry and Natural Vegetation

An important assumption of Development 2050 regarding private forest lands is that, as population density reaches 70 persons per square mile, industrial forest parcels shift to become non-industrial forest parcels with attendant increases in rural residential land uses. There is also significant change in riparian vegetation policy, with 150-foot protection zones for large streams on federally managed forest lands, but no mandated riparian protection zones on state or private lands. Timber harvest rotation schedules are based on average annual cutting rates from 1973 to 1995 published in the May 1997 "Timber Harvesting Practices on Private Forest Land in Western Oregon," [115] which equates to 60 years for private industrial and 128 years for non-industrial. The harvest schedule for State forest lands is based on a 100-yr. rotation, or 50% harvest probability. Modeled harvest units are 30 acres in size for federal, state, and private industrial lands, 5.6 acres in size for private non-industrial lands.

With forestlands continuing to occupy more than two-thirds of the basin, natural vegetation remains extensive under Development 2050 assumptions. While no explicit assumptions were stated in Development 2050 regarding non-forest natural vegetation, land use and management, primarily through land conversion to urban and rural residential uses, affect these areas of natural vegetation directly and indirectly. Willamette River mainstem channel complexity decreases due to river straightening (Fig. 173, p. 133).

Water Availability

Increases in the demand for surface water through 2050 reflect population and economic growth, as well as land conversion patterns, with per capita municipal demands assumed to be 12.5% greater in Development 2050 than in the Plan Trend 2050 scenario. Most increases in water demand occur within the constraints of existing ca. 1990 water rights and permits, with new permits available only for small self-supplied rural users and along the mainstems of the lower McKenzie and Willamette Rivers.

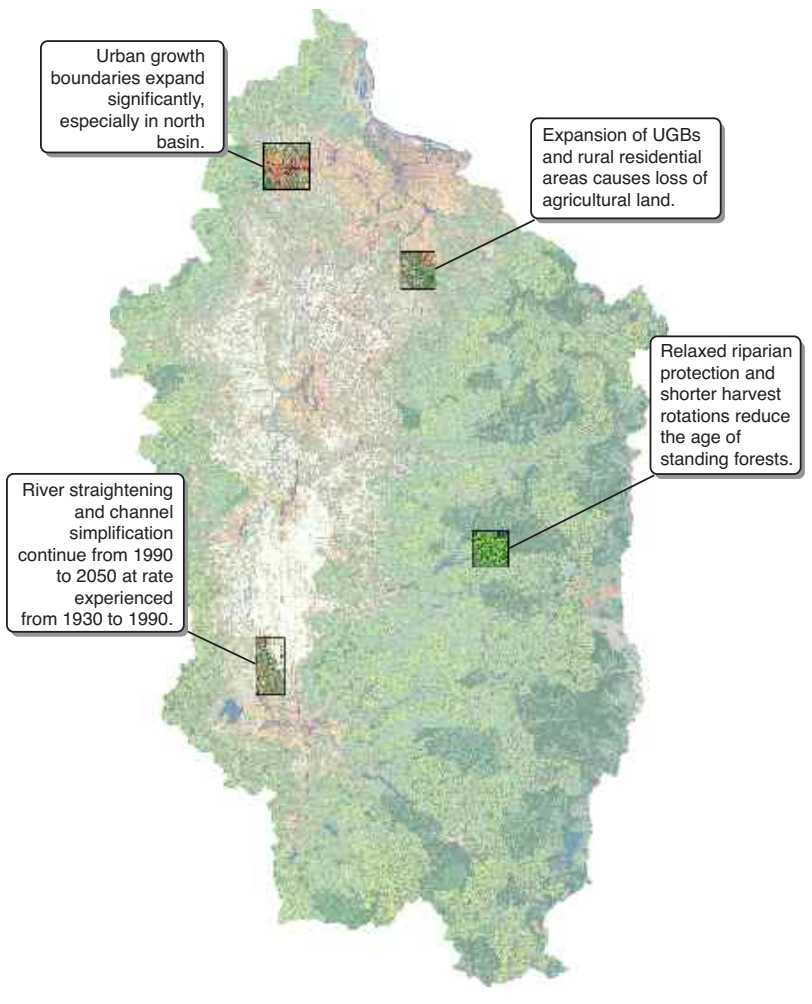
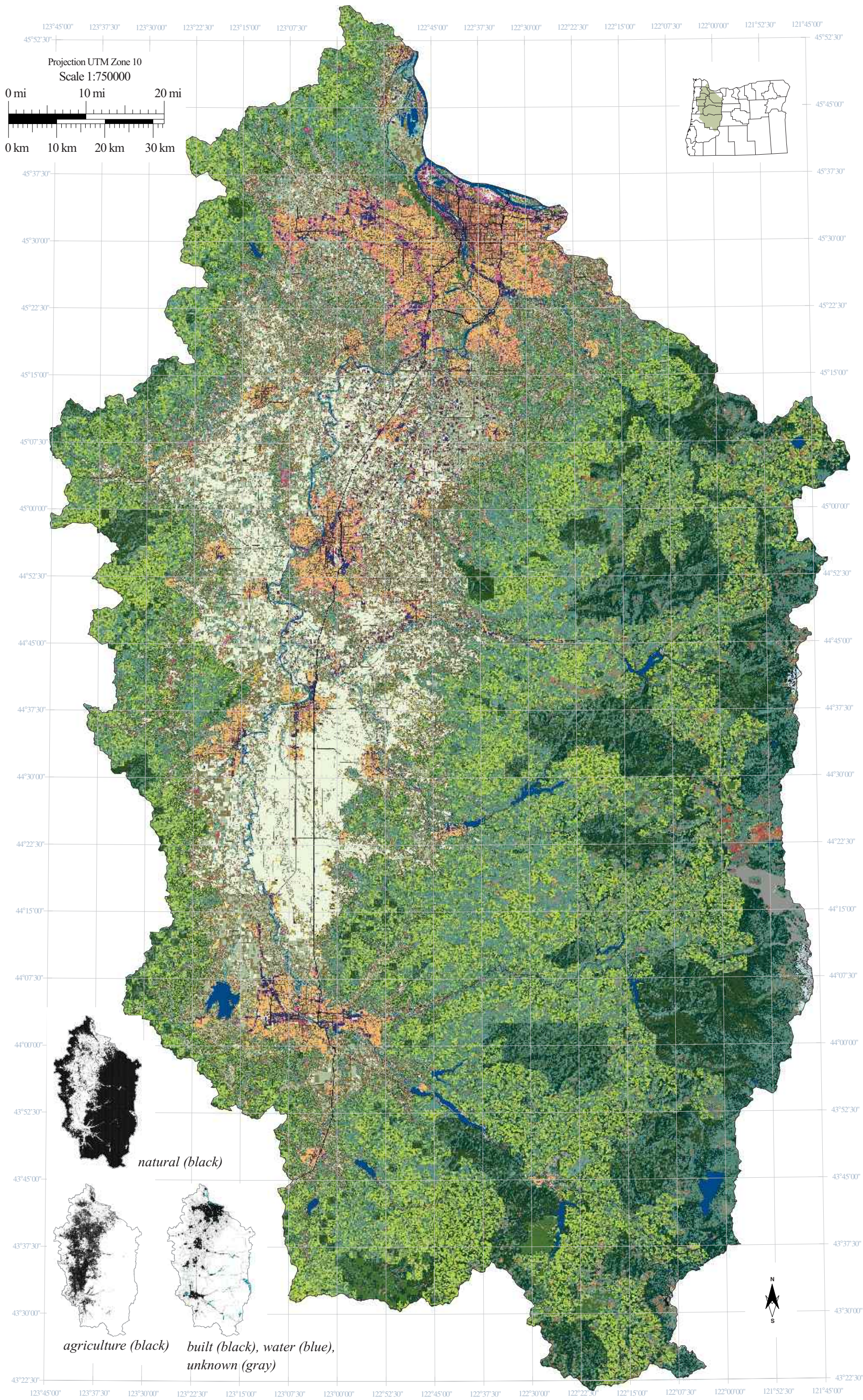


Figure 102. *A diagram of the Development 2050 alternative, highlighting some key features.*

Map 26. Development 2050



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