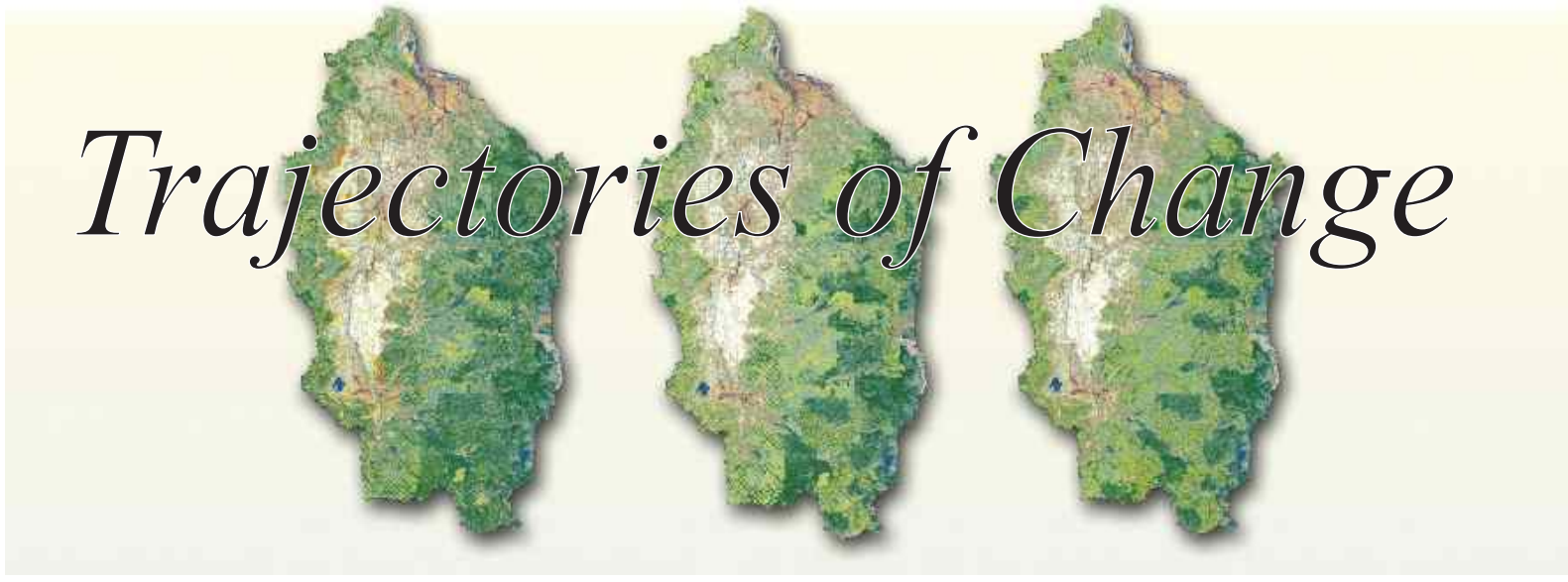
Pre-EuroAmerican Scenario (PESVEG) ca. 1851

Land Use / Land Cover (LULC) ca. 1990

Plan Trend 2050

Development 2050

Conservation 2050



Trajectories of Change

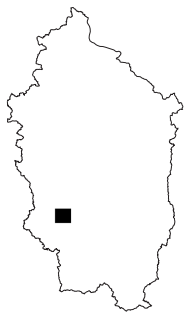
The choices we make today shape the future of the Willamette Basin. Better understanding of the likely consequences of these choices provides the opportunity for more informed decision-making. The purpose of this chapter is to illustrate and evaluate several alternative futures for the basin, alternatives that reflect varying options for future land and water use.

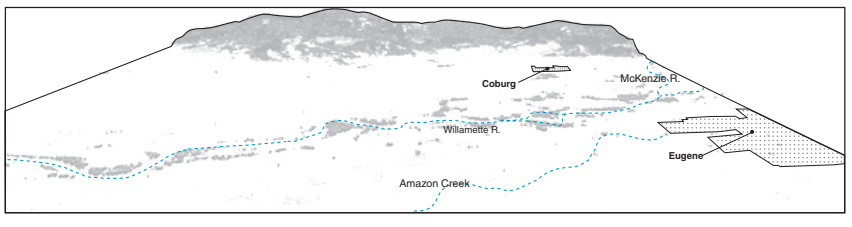
We present three future scenarios, Plan Trend 2050, Development 2050, and Conservation 2050, chosen to depict a plausible range of alternatives as defined by representative citizens of the WRB. These alternatives range from more conservation-oriented to more market-oriented. For each scenario, citizen stakeholders defined a set of plausible assumptions regarding future trends in urbanization, rural residential development, agriculture, forestry, and water use, consistent with the underlying premise of the scenario. Consortium scientists then translated these assumptions into spatially explicit representations, expressed as maps of land use/land cover in the basin through the year 2050. These landscape scenarios are not predictions of future change, but rather visualizations of the likely outcomes of the stakeholder assumptions.

The future of the basin will be, in part, a reflection of its past. That is, the natural patterns and dynamics that occurred prior to EuroAmerican settlement as well as the present-day human activities and corresponding patterns both constrain, to some degree, future options for land and water use. They also provide valuable perspective for interpreting the significance of future changes. For this reason, we trace the Willamette Basin landscape from circa 1850 to 1990 to 2050, a span of 200 years and five landscapes in total: the past, present, and three alternative futures.

To highlight the implications of the policy choices imbedded in Plan Trend 2050, Development 2050, and Conservation 2050, we compare and contrast the past, present, and three future landscapes in two different ways. First, we summarize key landscape features, for example, the density and distribution of the human population, the amount and quality of agricultural land and types of crops grown, and the extent and condition of natural vegetation. We then evaluate the likely effects of these alternative landscapes on four different resources of concern: the ecological condition of the Willamette River, water availability, aquatic life, and terrestrial wildlife. This chapter ends with conclusions and specific recommendations for how to use these results if Oregonians choose to protect and restore natural resources and biodiversity in the Willamette Basin.

The images on the facing page provide the same aerial vantage of an area in the southern portion of the Willamette Basin, north of present-day Eugene, shown by the black rectangle in the small context map below. The images on the facing page depict this area (also diagrammed below) at three different times: the past (top image on facing page, ca. 1851), the present (second from top, ca. 1990) and three versions of future land and water use patterns ca. 2050. Among the many noteworthy pattern changes embodied in these five versions of this portion of the basin, note especially the reduction of channel complexity and floodplain forest extent from ca. 1851 to ca. 1990, as well as the differences in Eugene's northern urban growth boundary ca. 2050 under the three future alternatives, and the different patterns of 2050 rural residential development north of Eugene and south of Junction City. These images were produced from the maps on pp. 79, 87, 89, 91, 93, and 94-95 and are useful companions to them in visualizing landscape change.





3D Visualization (left): David Diethelm