Figure 10.10 Potential Plant-Species Diversity as Determined by Climate Patterns. Blue tones represent increases in diversity relative to present, and reddish tones represent decreases in diversity. Potential plant-species diversity represents diversity when ecosystems reach equilibrium with climate.
Figure 10.11. Species Richness of African Ticks in 2000, at a Resolution of 0.5 degrees. This map is based on climate-driven estimates of species ranges for 73 of the approximately 240 African species. The numbers in the legend indicate the number of tick species by grid cell. Tick species richness is highest in East Africa, Kenya, and Tanzania. There are pockets of high diversity in the Eastern Highlands of Malawi and Zimbabwe, the Cape, and West Africa; the lowest species richness occurs in the desert areas.

Figure 10.12. Predicted Changes in Tick Species Richness (per one-half degree cell) in Africa by 2100 in MA Scenarios. The number on the legend indicates the number of species that are gained or lost from each grid cell relative to a 2000 baseline estimate. Each map illustrates one scenario: a) Order from Strength; b) Global Orchestration; c) Adapting Mosaic; d) TechnoGarden.
Figure 10.13. Threat to Natural Ecosystems from Climate Change Following the Biome Approach in the IMAGE 2.2 Model in MA Scenarios

- Change without adaptation
- Change with adaptation
- No change
Figure 10.16. Nitrogen Deposition, Sensitivity, and Exceedance of Critical Loads for Order from Strength Scenario in 2050. In these maps for sensitivity, red tones indicate insensitive.
Figure 10.21. Change in Annual Water Availability in Global Orchestration Scenario in 2100. Numbers indicate the location of river basins in Figure 10.20. Shades from grey through red indicate regions that are drying.

Figure 10.23. Relationship between Species Abundance and Ecosystem Function for Resilient and Brittle Ecosystem Services. In some cases decline may be rapid as the abundance of the species undertaking the activity declines (for example, population regulation of herbivores by top carnivores). In others, there may be considerable redundancy, and the relative efficiency with which any function is undertaken declines only slowly with loss of species diversity and abundance declines. Arguably, this is the case for nutrient cycling and water cleansing, though it is worth noting that the net amount of nutrients and water processed will remain dependent upon the net area (and quality) of land available.