



Chapter 10

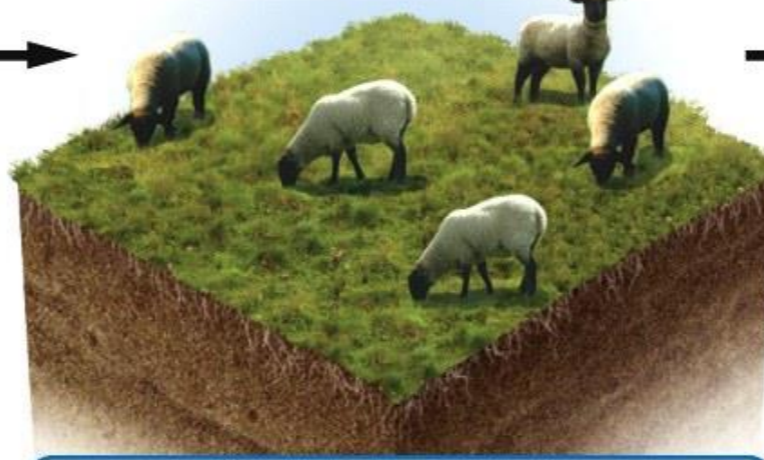
Land, Public and Private

The Tragedy of the Commons

- In 1968, ecologist Garrett Hardin described the “tragedy of the commons”.
- Tragedy of the commons- the tendency of a shared, limited resource to become depleted because people act from self-interest for short-term gain.



Use of the commons is below the carrying capacity of the land. All users benefit.



If one or more users increase the use of the commons beyond its carrying capacity, the commons becomes degraded. The cost of the degradation is incurred by all users.



Unless environmental costs are accounted for and addressed in land use practices, eventually the land will be unable to support the activity.

Figure 10.2

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Externalities

- **Externalities-** a cost or benefit of a good or service that is not included in the purchase price of the product or service.
- In environmental science we are concerned about **negative externalities** because of the environmental damage for which no one bears the cost.

Maximum Sustainable Yield

- The maximum amount of a renewable resource that can be harvested without compromising the future availability of that resource.

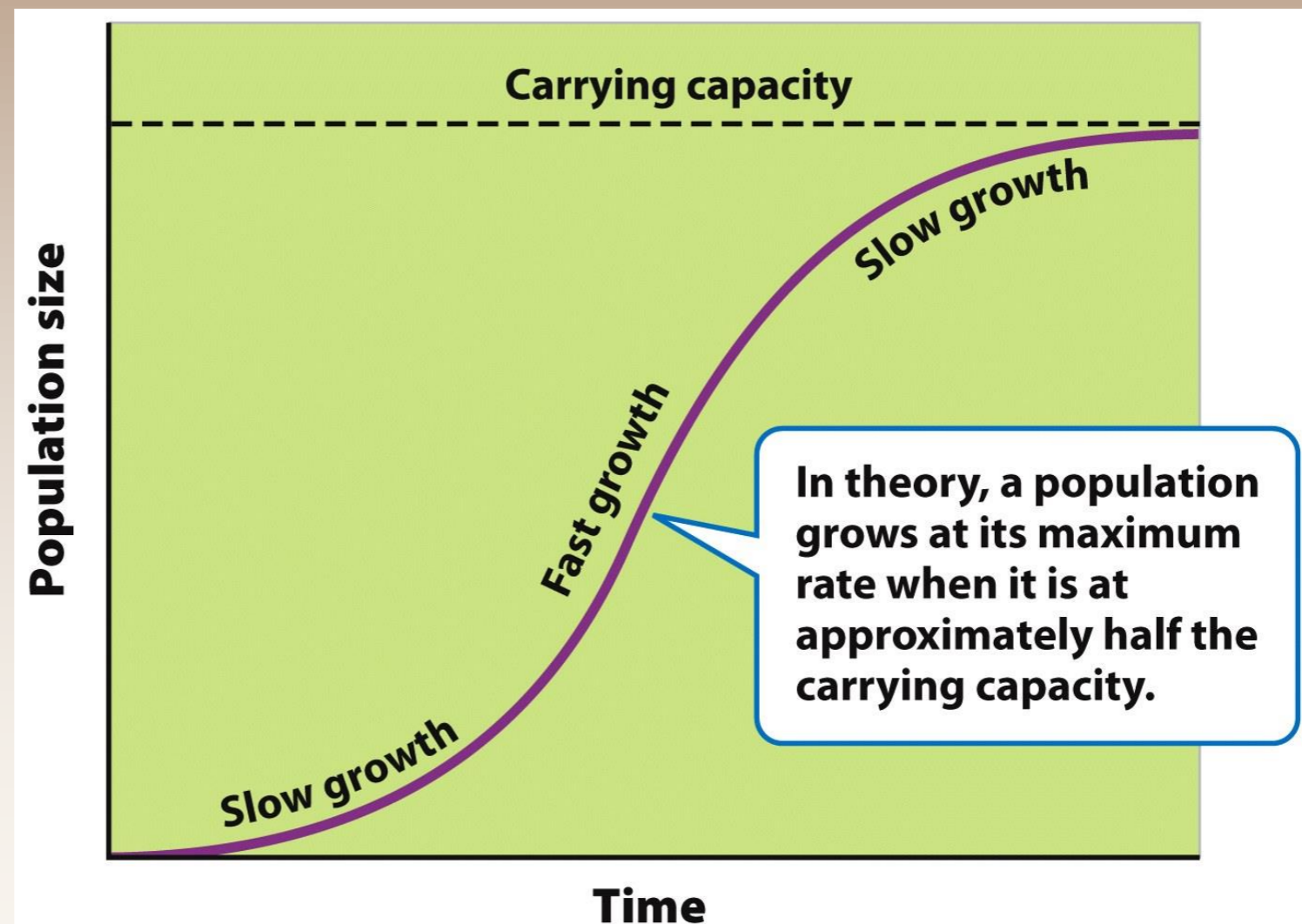


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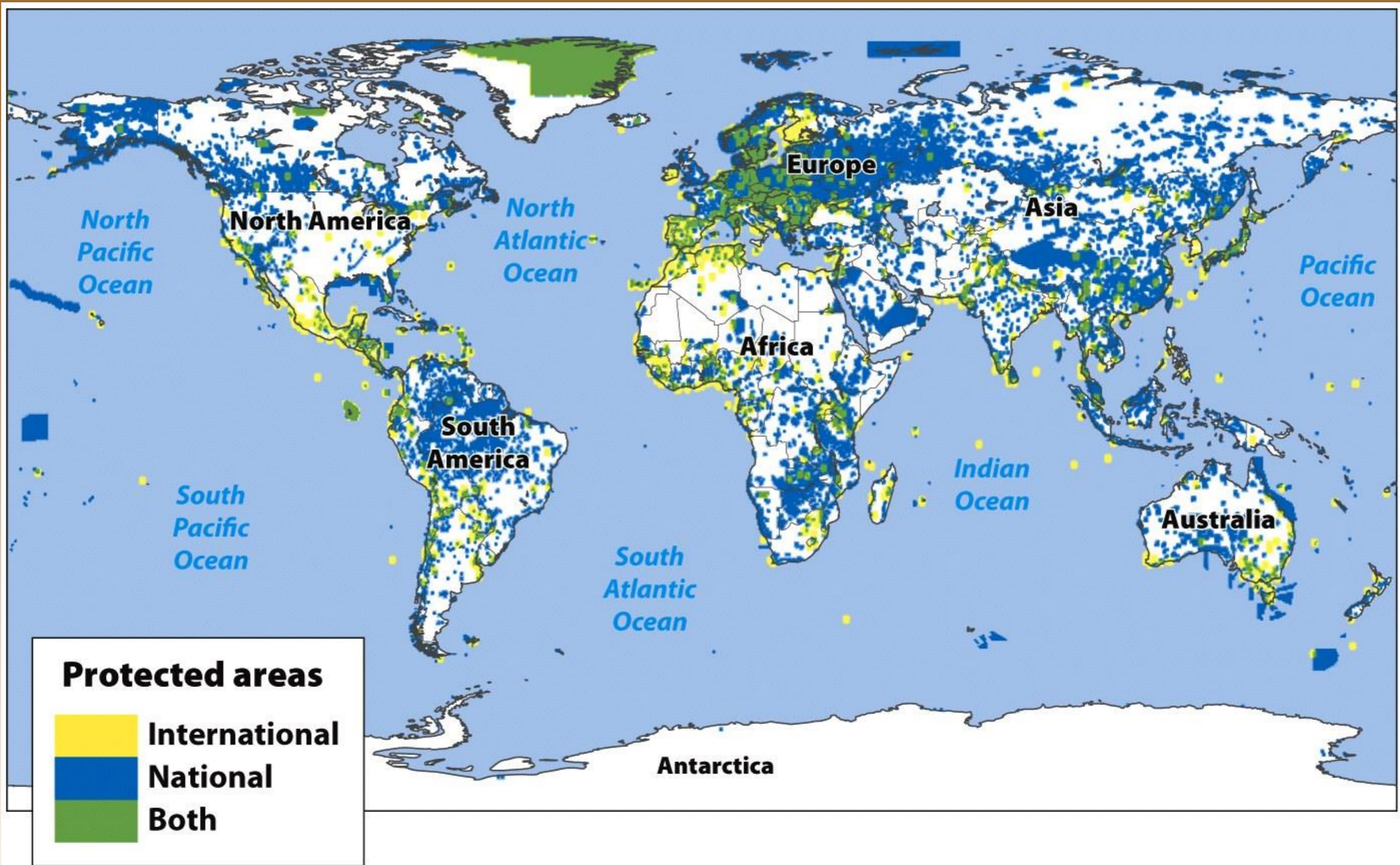


Figure 10.4

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Public Lands

- National Parks- managed for scientific, educational, and recreational use, and sometimes for their beauty or unique landforms.
- Managed Resource Protected Areas- managed for the sustained use of biological, mineral, and recreational resources.
- Habitat/Species Management Areas- actively managed to maintain biological communities.
- Strict Nature Reserves and Wilderness Areas- established to protect species and ecosystems.
- Protected Landscapes and Seascapes- nondestructive use of natural resources while allowing for tourism and recreation.
- National Monuments- set aside to protect unique sites of special natural or cultural interests.

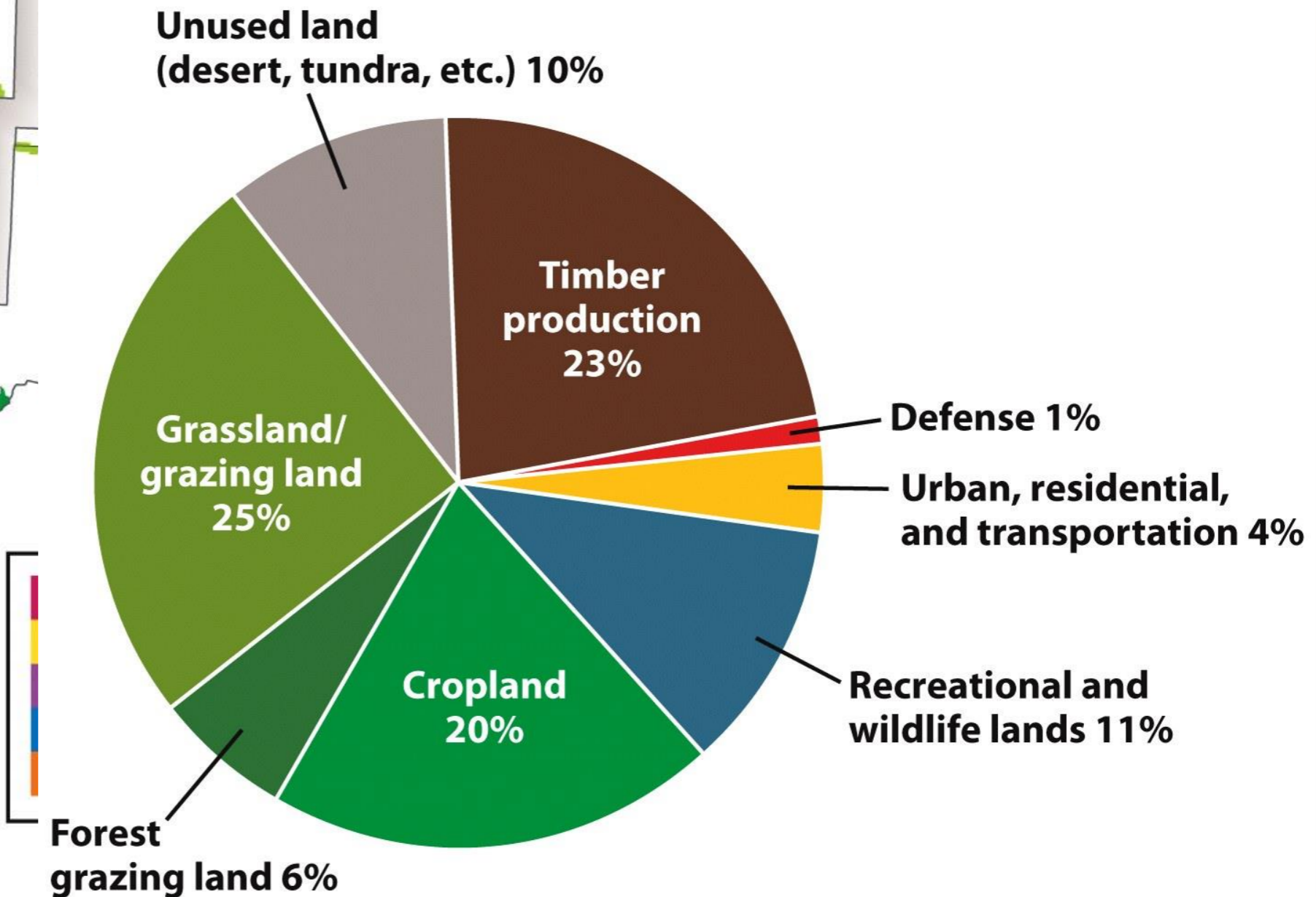
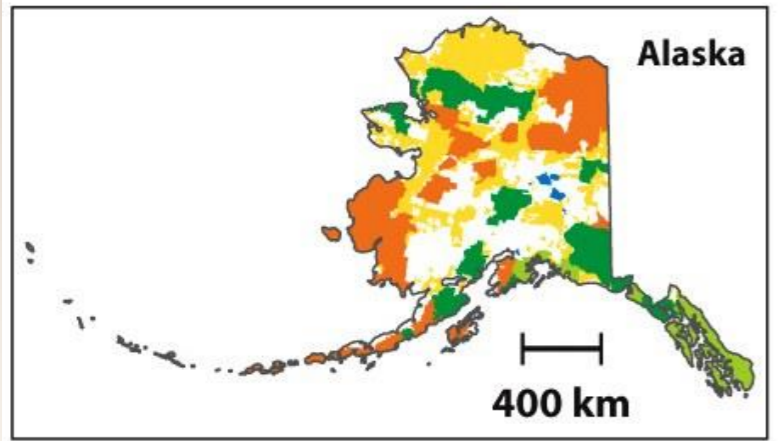
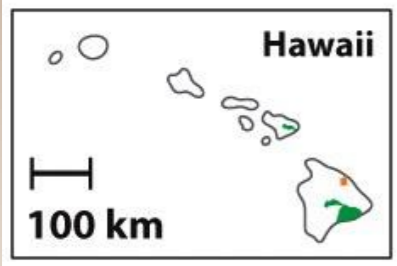
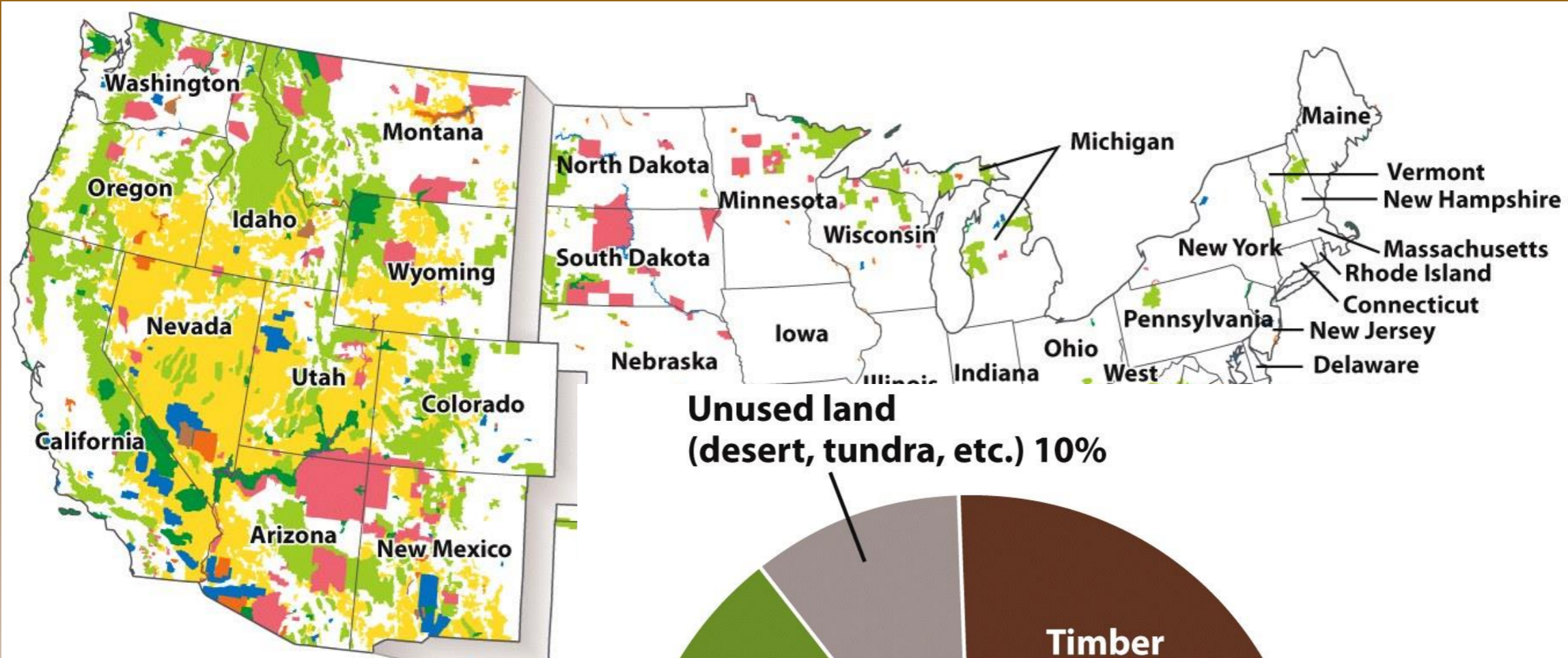


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Rangelands

- Dry, open grasslands that are primarily used for cattle grazing.



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Forests

- Areas dominated by trees and other woody vegetation.



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Timber Harvest Practices

- Clear-cutting- removing all, or almost all the trees in an area.
- Selective cutting- removing single trees or relatively small numbers of trees from a forest.



↓ Regrowth



(a) Clear-cutting



↓ Regrowth



(b) Selective cutting

Figure 10.8

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Fire M

- prescribed burns-
under controlled c



Figure 10.11a
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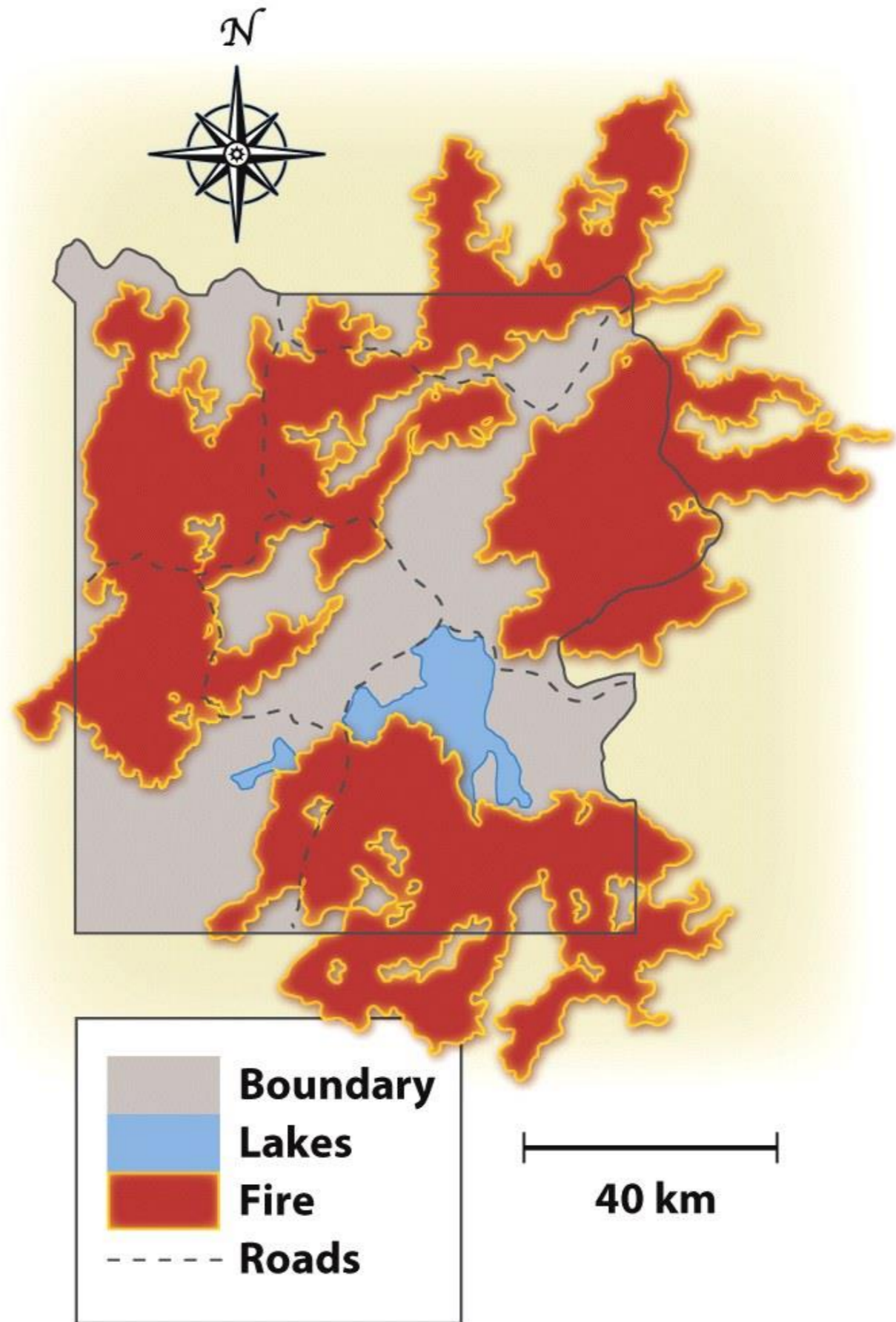


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Forests

- National Parks- established to preserve scenic views and unusual landforms.
- National wildlife refuges- managed for the purpose of protecting wildlife
- National wilderness areas- set aside to preserve large tracts of intact ecosystems or landscapes.

Federal Regulations

- National Environmental Policy Act (NEPA)- mandates an environmental assessment of all projects involving federal money or permits.
- Environmental impact statement (EIS)- outlines the scope and purpose of the project.
- Environmental mitigation plan- outlines how the developer will address concerns raised by the projects impact on the environment.

Residential Land

- Suburban- areas surrounding metropolitan centers with low population densities.
- Exurban- similar to suburban areas, but are not connected to any central city or densely populated area.

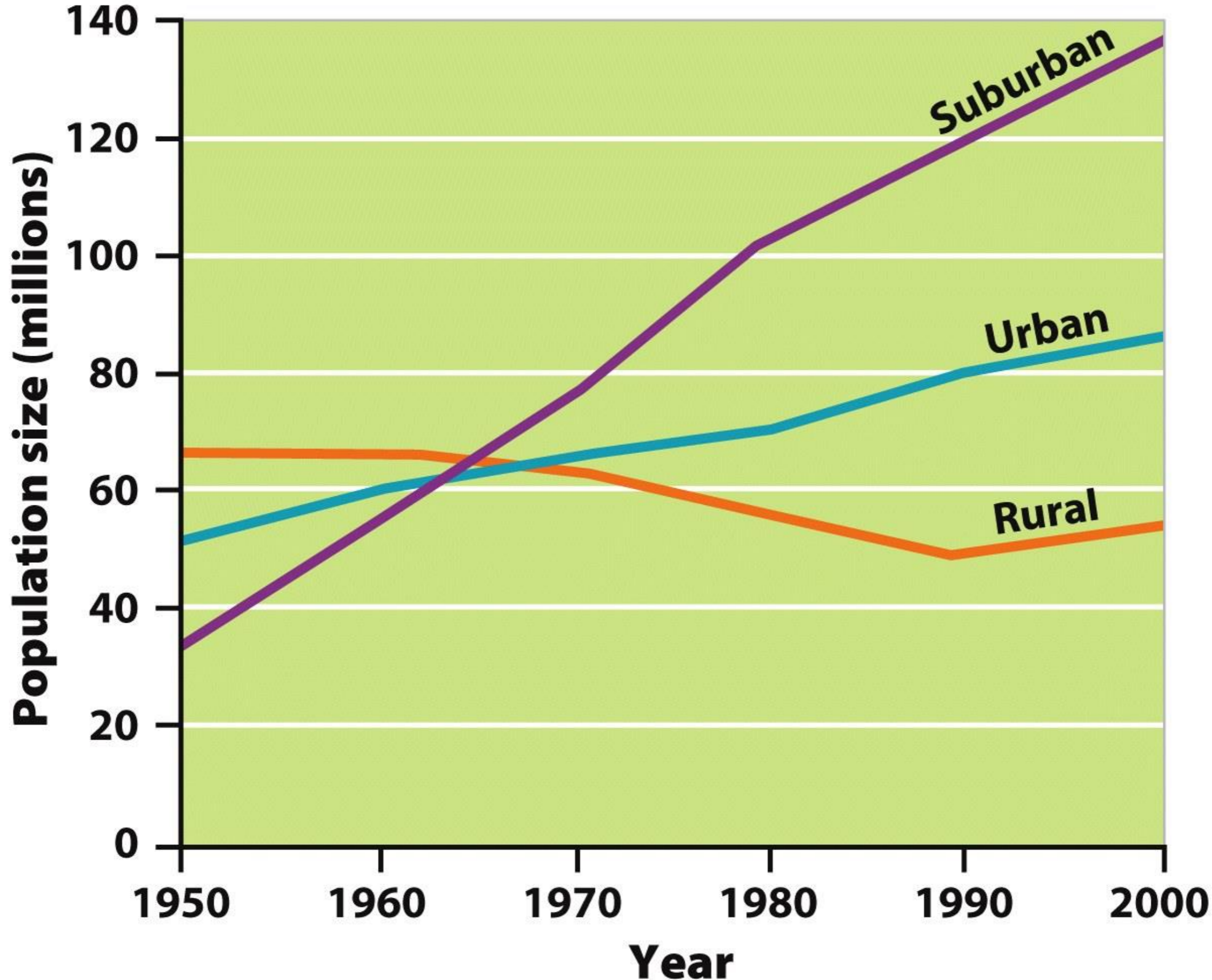


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Urban Sprawl

- Urban sprawl- the creation of urbanized areas that spread into rural areas.
- The four main concerns of urban sprawl in the U.S. are:
 - automobiles and highway construction
 - living costs (people can get more land and a larger house in the suburbs for the same amount of money)
 - urban blight (city revenue shrinks as people move to the suburbs)
 - government policies

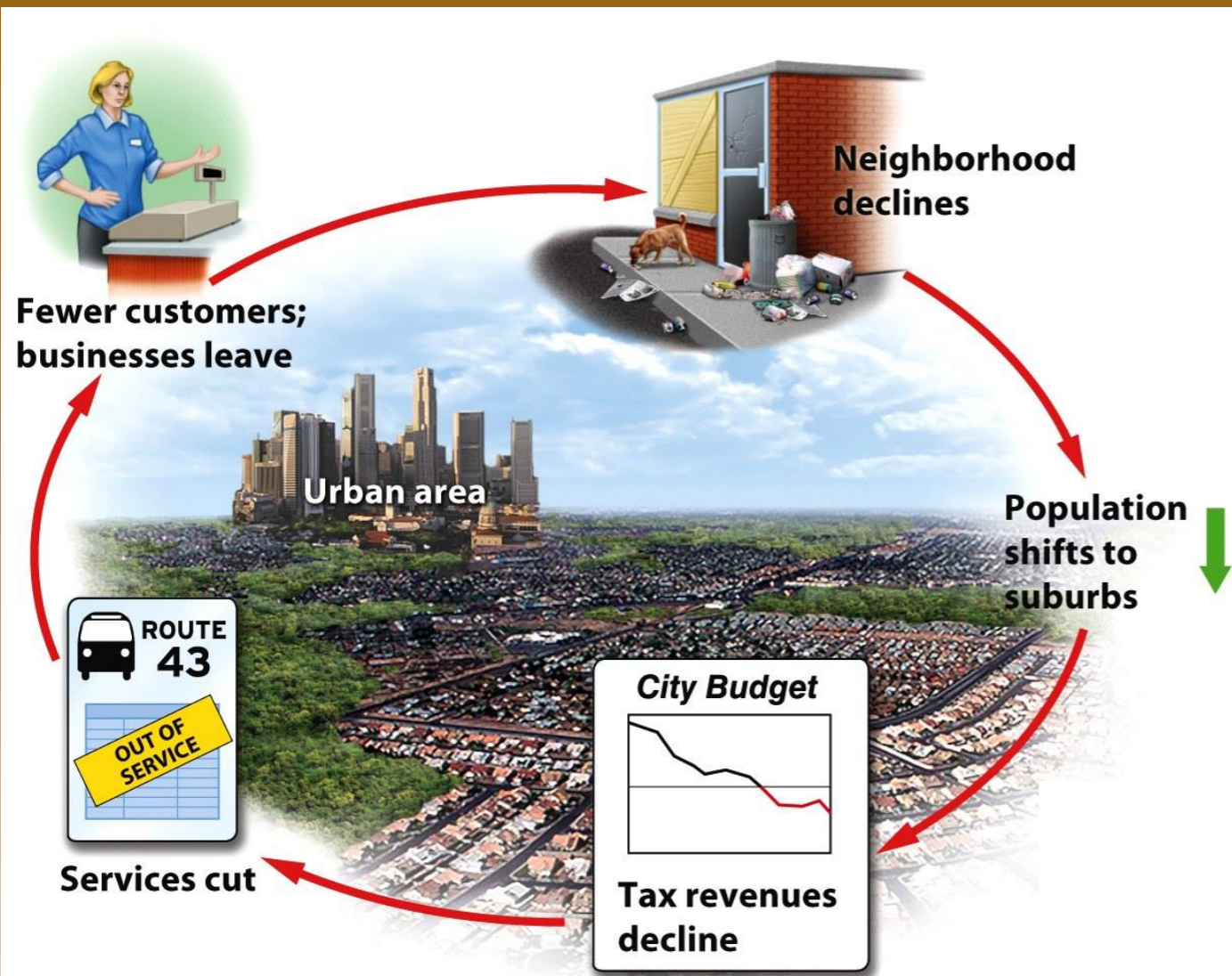


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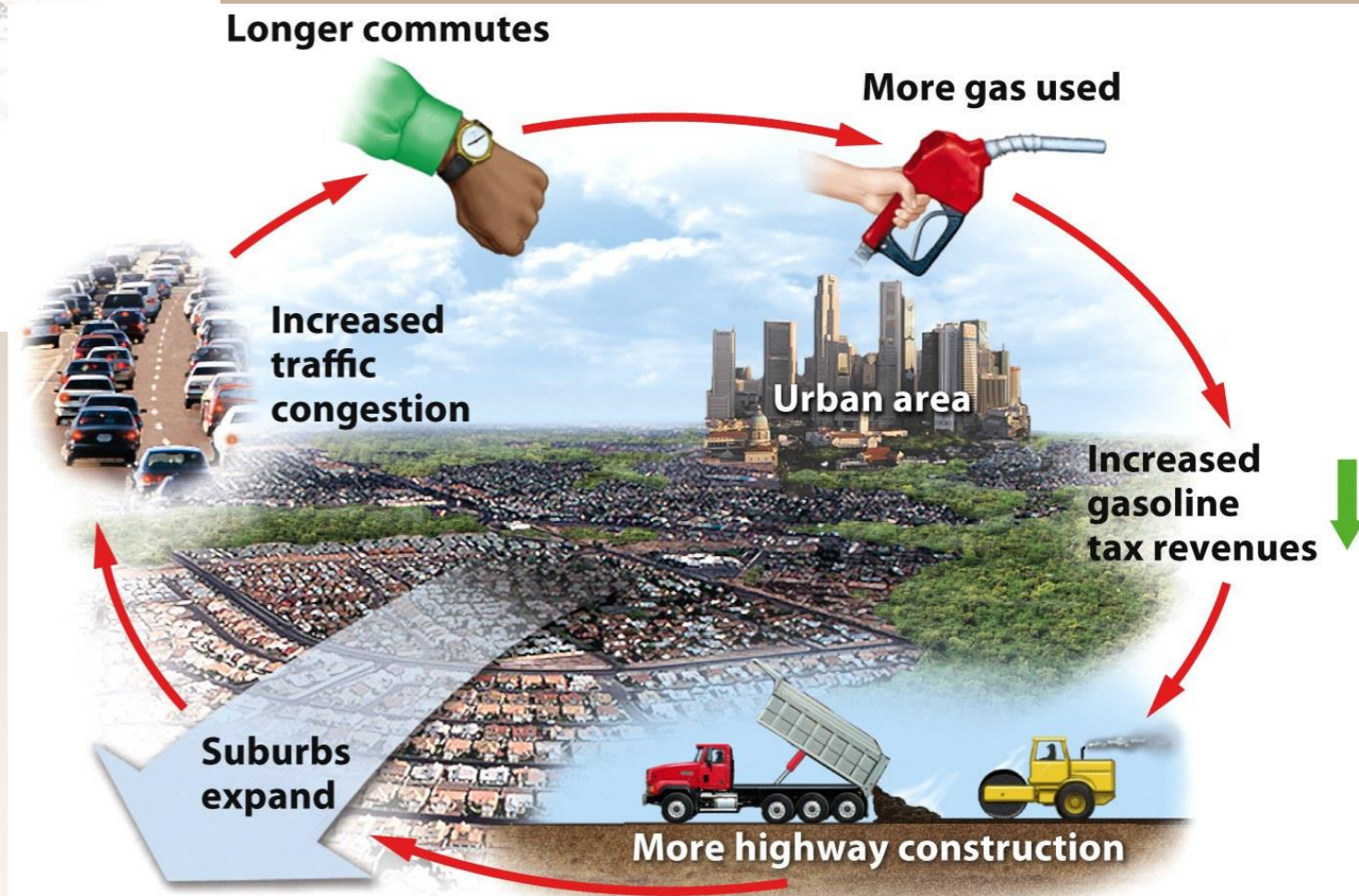


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Government Policies

- Highway Trust Fund- a federal gasoline tax to pay for construction and maintenance of roads and highways.
- Zoning- a planning tool to create quieter and safer communities. For example, prohibiting the development of a factory or strip mall in a residential area.
- Multi-use zoning- allows retail and high-density residential development to coexist in the same area.
- Subsidized mortgages- low interest rates offered to people to purchase a home that would otherwise not be able to do so.

Smart Growth

- Mixed land uses
- create a range of housing opportunities and choices
- create walkable neighborhoods
- encourage community and stakeholder collaboration in development decisions
- take advantage of compact building design
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty and critical environmental areas
- Provide a variety of transportation choices
- Strengthen and direct development toward existing communities
- Make development decisions predictable, fair and cost-effective



Figure 10.16

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Figure 10.17

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