Slide 1

Introduced Species

Lecture 24

Slide 2

Learning Outcomes

- Introduced Species
- Invasive Species
- Control of Introduced Species
- Habitat Conservation

Slide 3

Biodiversity

- Definition:
- Total number of species, the variability of their genes, and the communities in which they live.

Slide 4

5 Major Threats To Biodiversity

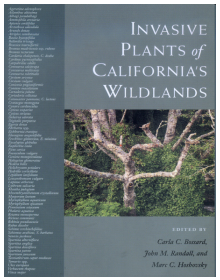
1. Introduced species
2. Habitat Destruction
3. Climate Change
4. Overharvesting
5. Pollution

- Cause species to become extripated (extinct locally)
- Reduces biodiversity
- Contributes to extinction (global)

Slide 5

Introduced Plants

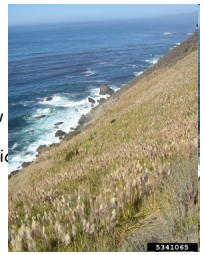
- Non-native
- Originate in regions with similar climates to California
- Pre-adapted
- Compete with native plants for resources
- Fewer pests and diseases than native plants



Slide 6

Invasive Species

- California has ~ 1,800 introduced species
- 200 currently classified as invasive
- http://www.cal-ipc.org/ip/inventory/weedlist.php
-
- Ability to self-seed and colonize new areas
- Huge impacts in agriculture and public lands
- Major threats to threatened and endangered species of plants and animals



Slide 7

Change Ecosystems

- *Bromus tectorum*
  - Annual grass invaded millions of acres of Great Basin
  - Increased frequency of fires from once in 60 years to once in 3-5 years
  - Elimination of native shrubs
- *Tamarix* spp
  - Phreatophyte invades riparian communities Southwest
  - lowers water tables

Slide 8

Change Ecosystems

- *Salt Cedars*
- *Tamarix* spp
  - Phreatophyte invades riparian communities Southwest (Texas to S California
  - lowers water tables

Slide 9

Alter Habitats

- *Spartina alterniflora*
  - Native to Atlantic and Gulf
  - Greatly increases sedimentation rates
  - Mudflats deprived of sediments erode

Slide 10

Alter Habitats

- *Ammophila arenaria*
  - Infested dunes steeper
  - Orientated parallel to coast
  - Dunes supporting native grasses (Leymus mollis) orientated perpendicular to coast

Slide 11

Replace Native Species

- European annual grasses have largely replaced native perennial grasses
- Medusa-head Grass
- *Taeniatherum caput-medusae*

Slide 12

Replace Native Species

- Yellow Star Thistle
- *Centaurea solstitialis*

Slide 13

Replace Native Species

- French Broom
- *Genista monspessulana*
- Ice Plant
- *Carpobrotus edulis*
- Pampas Grass
- *Cortaderia selloana*

Slide 14

Icon of the West

- Tumbleweed
- *Salsola tragus*
- Introduced from Arid steppes of Central Asia
- Russian Thistle
- Amaranthaceae
- Once seeds develop root dies and 'tumbling' disperses seeds