Flying Under the Radar: Potentially adapted trees and shrubs to Intermountain West Landscapes
Overview

• Traditional landscaping
• Sustainable landscaping
• Specific Plants
Traditional Suburban Landscape

- American households (Figures from 1990’s):
  - Spend almost $500 on yard equipment and chemicals annually
  - 35% spend more than $500 annually on lawn maintenance
  - 55 to 65% applied lawn and garden chemicals
  - 74% applied lawn fertilizer
Traditional Suburban Landscapes

- Reduces number of pest predators
- Unnatural environment
- Monoculture situations
  - More turf grown in the U.S. than cotton, barley or rice
  - Norway Maple is 70% of Logan’s Urban Canopy
Unique Beauty or Monoculture?

A.W. Spirea

Burning Bush

Lilac

Cistena Plum

Common Privet

Cotoneaster

Find us Anywhere
Unique Beauty or Monoculture?

Honey Locust  Norway Maple  Ash  Flowering Pear

Find us Anywhere
Unique Beauty or Monoculture?

Shasta Daisy

Cone Flower

Dianthus

Tickseed

Stella Daylily

Creeping Phlox

Find us Anywhere
Non-Adapted Plant Material
Over-Watering

• In Utah 50” of water is typically applied to turf. Turf requires 25” to remain healthy.

• Up 85% of landscape plant problems are due to overwatering.
Traditional Landscaping: A Maryland Study

- Studied scale infestation of wild and cultivated mulberries.
- Found:
  - Well irrigated trees were susceptible
  - Drought stressed trees were not

- Both well irrigated and drought stressed wild trees were virtually scale free.
- Cuttings from wild trees planted in the landscape were susceptible when well irrigated
Long Term Use of Cover Sprays and Residual Pesticides in Pin Oak

• In the 1990’s
  – 32% of pest control companies were applying pesticides regularly even if insects were not present.
Long Term Use of Cover Sprays and Residual Pesticides in Pin Oak

Raupp et al., 2001
Fertilize Stressed Plants?

- Herms, D. 2002: Review article on Fertilization of woody plants
  - Decreases insect resistance
  - Increases herbivory
    - Increased nutrients and decreased secondary metabolites
  - Given a chance to adapt, low nitrogen soils generally don’t induce N-chlorosis
  - Excessive N decreases disease resistance
    (Schoenewiess, 1975)
Other studies

- Raupp, M. et al. 1992: Review article on IPM
  - Excessive pesticide use causes pest outbreaks
  - IPM program reduces pesticide use from 45-90%
  - Aphids of high concern to professionals and homeowners
Sustainability

• In an ecological context, sustainability can be defined as the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future.
Sustainability

- In an ecological context, sustainability can be defined as the ability of an ecosystem to maintain ecological processes, functions, biodiversity and productivity into the future.
  - Reduce inputs
  - Save money
  - Reduce time
  - Increase insect predators
Sustainable Landscape: A Southern Nevada Study

- Southern Nevada Water Authority
- Residents voluntarily converted 1,000 – 2,000 square feet of traditional landscape to a sustainable landscape
Sustainable Landscape: A Southern Nevada Study

**Traditional Landscape**
- Used 273 gal of water more a day
- Used 80 gal water / ft² / year
- Overall cost: $680

**Sustainable Landscape**
- 33%-39% reduction in irrigation costs
- 2 hours less a week in maintenance
- Used 17gal water / ft² / year
- Overall cost: $473 per year

In the Las Vegas area 60-90% of all potable water is used for irrigation.
Common Misconceptions

• Sustainable = Maintenance free
• Sustainable = Pesticide and fertilizer free
• Easy to design and install
• Native plants are pest free
How to Encourage Sustainability

- Focused marketing
  - Sustainability is a top-down phenomenon
- Master Gardeners
  - Education, tours and demonstrations
- Correct Principals
  - What is actually waterwise
- Dispel Misconceptions
  - Many landscape styles can be waterwise
Specific Plants
Any guesses?
Curl-leaf Mountain Mahogany
*Cercocarpus ledifolius*

- Slow growing
- Tolerates shearing
- Small specimen tree or large shrub
- N-fixing species
New Mexico Privet (Desert Olive)

*Forestiera neomexicana*

- Hedge or specimen plant
- Good fall color
- Spring blossoms
Bearberry or Manzanita
*Arctostaphylos nevadensis x patula*

- Evergreen
- Shade groundcover
- Replacement for *Vinca spp.*
Mountain Lover

*Pachistima myrsinoides*

- Great replacement for Boxwood (*Buxus spp.*)
- Grow to 24 inches high
- Cold-hardy evergreen
White Shield Osage Orange

*Maclura pomifera* ‘White Shield’

- Nearly pest and disease free
- Grows to 40 feet high
- Thornless and seedless
State Street Maple
*Acer miyabe{i}i* ‘Morton’

- Similar to hedge maple
- Faster growing
- Zone 4
- Possibly as drought tolerant
Seven-Sons Flower
*Heptacodium miconoides*

- Fall bloomer
- Spent flowers still decorative
- Decorative bark
- Zone 5
- Can be trained as a tree
- Alkaline soil tolerant
Chinkapin Oak
*Quercus muehlenbergii*

- Exhibits medium to high drought tolerance
- Moderate growth rate
- Zone 3
- 40-50 feet high