

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
 - 55to 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

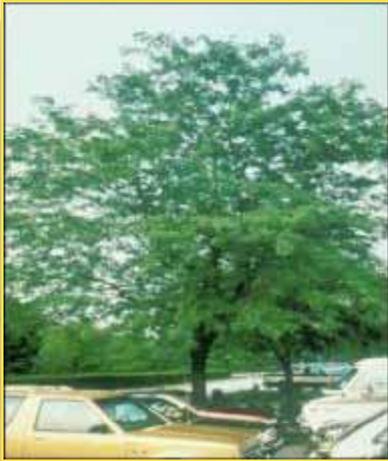


Cotoneaster

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Unique Beauty or Monoculture?



Honey Locust



Norway Maple

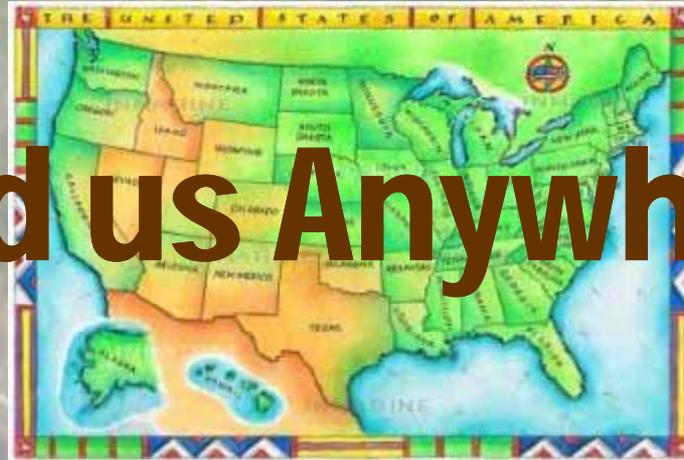


Ash



Flowering Pear

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Unique Beauty or Monoculture?



Shasta Daisy



Cone Flower



Dianthus



Tickseed



Stella Daylily



Creeping Phlox

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Non-Adapted Plant Material



Over-Watering



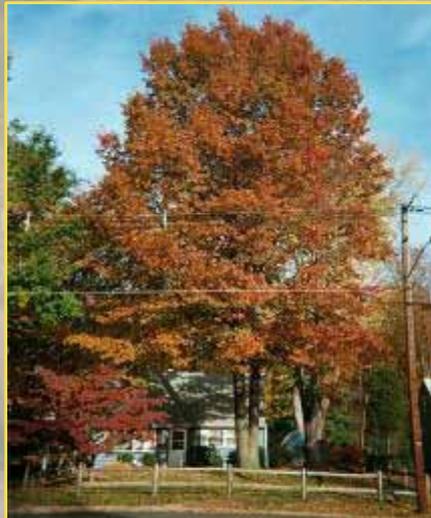
- In Utah 50” of water is typically applied to turf. Turf requires 25” to remain healthy.
- Up 85% of landscape plant problems are due to overwatering.

Traditional Landscaping: A Maryland Study

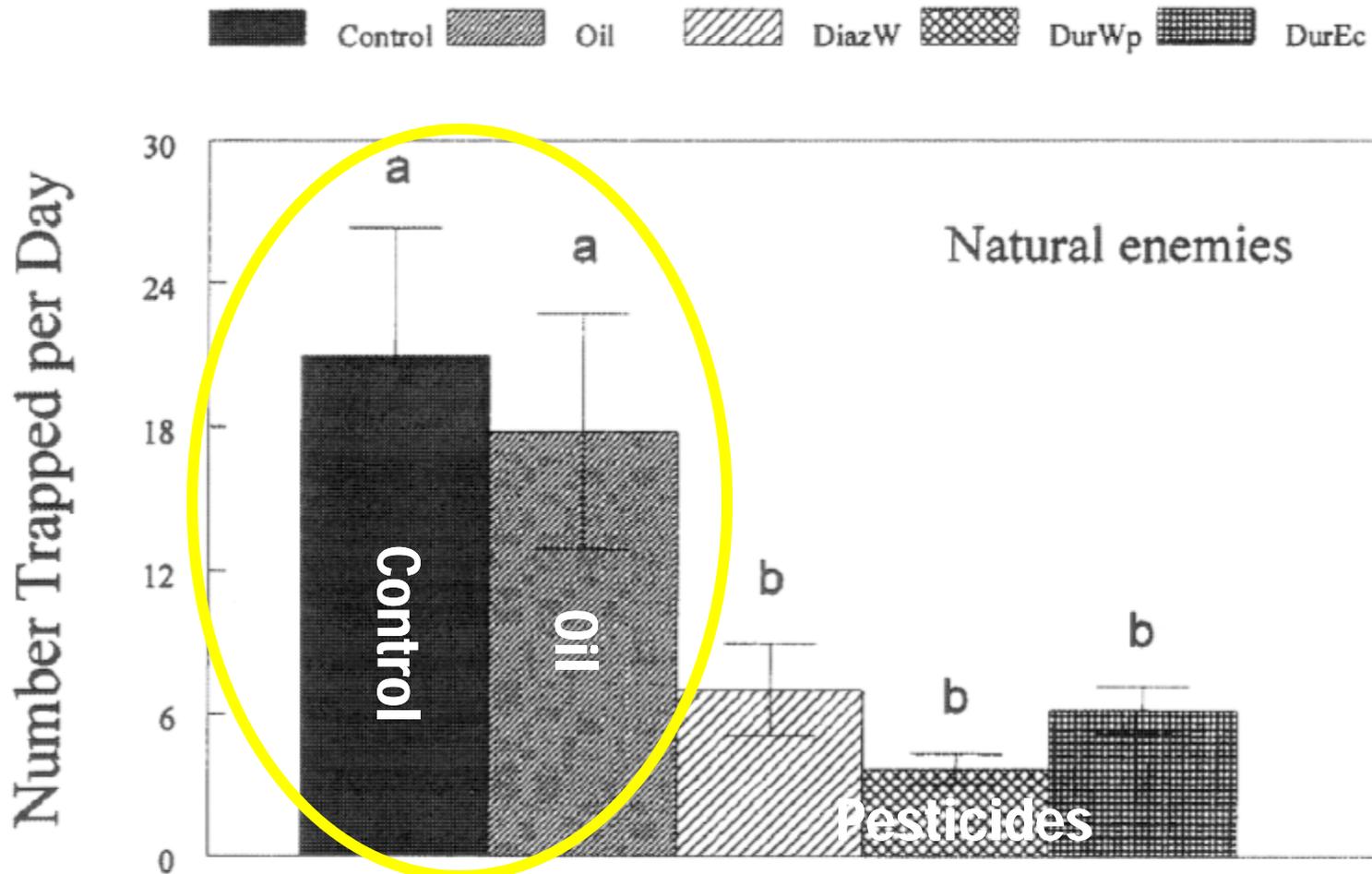
- Studied scale infestation of wild and cultivated mulberries.
- Found:
 - Well irrigated trees were susceptible
 - Drought stressed trees were not
 - Both well irrigated and drought stressed wild trees were virtually scale free.
 - Cuttings from wild trees planted in the landscape were susceptible when 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: \$473per 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



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Bearberry or Manzanita

Arctostaphylos nevadensis x patula

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



Mountain Lover

Pachistima myrsinites

- 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 miyabei '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

